Yvon Roy Entrepreneur Électricien (1986) Inc.
300 rue St-Jean Baptiste Nord
Princeville Qc G6L 5E2
Tél. : 819-364-5330
Fax : 819-364-5120

O&M - submittals

Project :

Solid Waste Transfer Station
Iqaluit

Bindel 1 of 2

Project manager
Cathy Brisson

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

[X] REVIEWED	DC SD NO. OM Submittals R0
[ ] REVIEWED AS NOTED	PROJECT NO. 19-9543(WTS)
[ ] REVISE & RESUBMIT	BY K.Speidel
	DATE 2024-04-18

DILLON CONSULTING

SHOP DRAWING NUMBER

Projet : Solid Waste Transfer Station

projet : PP8058

Spécialité : Electrical

Date : 2022-2023-2024

YVON ROY (1986) INC.
300, St-Jean Baptiste Nord, Princeville, QC

ELE-001	Power generator diesel
ELE-002	MI cable
ELE-003	Service entrance
ELE-004	Panelboard
ELE-005	Disconnect switch
ELE-006	Motor disconnection
ELE-007	Transformer
ELE-008	Lighting
ELE-009	Emergency light
ELE-010	Roadway lighting
ELE-011	Conduit and fitting
ELE-012	Wire and cable
ELE-013	Wire and box connector
ELE-014	Grounding
ELE-015	Wiring device
ELE-016	Heating cable
ELE-017	Tray
ELE-018	Telecom + fiber
ELE-019	Fire alarm
ELE-020	Intrusion
ELE-021	Videosurveillance
ELE-022	Red strob (alarm)
ELE-023	exterior control lighting
ELE-026	annonciator
ELE-027	garage door contact
ELE-028	type G - office
ELE-029	panelboard - office
ELE-030	heating cable - office
ELE-031	emergency light - office
ELE-032	methane monitor - office
ELE-033	tank control panel - office
ELE-034	fire stop
ELE-035	lamecoide list
ELE-036	
ELE-037	
ELE-038	
ELE-039	

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	 	**Shop Drawing no :** ELE- 001 R3 **Referencing** 263214 + 263623
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : WAJAX

Descriptions / comments

Power generator diesel + automatic transfer switch
(item highlighted changes for clarification and accessibility of parts)

Comments of Professionnal :

- Comments on next Page.

stamp approval :

SHOP DRAWING REVIEW

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	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-001-R3

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Mar. 24 2023

DILLON CONSULTING

- Please provide breakers from the same manufacturer in the same bus. (Currently there is 2 ABB Breakers, and 1 Square D). If it is not possible to do this, please provide reasoning.

Confirm the Generator Meets The Electrical Inspector Requirements Below: (RFI-040 Item 12)

Please read the following regarding approvals for generators and clarify if the generator is going to be a packaged assembly as described below. If it is a packaged assembly, please provide a copy of the report from the inspection body who evaluated the assembly.

Approval requirements for the generator:
When an integrated product such as a generator set mounted in a heated and sound attenuated enclosure; with an oil pan heater, battery charger, enclosure lighting and fire alarm, load center, damper controls and actuators, a generator controller and switchboard, is built in one location and shipped for installation in another Canadian location, it must then be approved to the relevant Canadian Codes and Standards. This review process typically includes but is not limited to the following work flow;
• All components of the assembly are verified as certified for Canada and utilized per their conditions of certification and manufacturer's recommendation,
• Interconnecting wire and cable is verified as sized correctly and has appropriate ratings (ampacity, oil resistance, temperature rating and the like),
• Verification that overcurrent and overload devices are certified and have the correct ratings,
• Verification that control components including Loss of Phase relays and Ground Fault interrupters are installed where required,
• The dielectric strength of all ungrounded conductors is adequate for the voltage rating of the equipment which includes mandatory testing,
• Verification that all mandatory Caution and Warning labels are bilingual and in place where required,
• The application of a system label, that includes the inspection body's mark of conformity in accordance with Rule 2 - 100 Marking of equipment, and
• Produce a report that details the equipment and attests to it being approved for Canada

This evaluation may only done by a third party evaluator accredited by Standards Council of Canada (SCC) as qualified and competent to conduct the equipment review and testing to verify compliance. For your convenience I've attached a Bulletin that lists the recognized inspection and certification bodies with their approval labels.

In the case of a Generator Assembly, we require the following standards for review be referenced by the evaluation agency as a minimum;
• CAN/CSA C22.2 No. 94.2 Enclosures for electrical equipment, environmental considerations
• CAN/CSA C22.2 No. 14 Industrial control equipment
• CAN/CSA C22.2 No. 286 Industrial control panels and assemblies
• CAN/CSA C22.2 No. 100 Motors and generators
• CAN/CSA SPE1000 Model code for the field evaluation of electrical equipment,
• CAN/CSA C22.2 No. 0 The Canadian Electrical Safety Code Part II – General requirements, and
• CAN/CSA C22.1 The Canadian Electrical Safety Code Part I

Note also that the enclosure if of a custom design and fabrication has not been previously examined against the requirements of C22.2 No. 94.2 and so marked, then we require the IB to conduct rain testing to verify the enclosure is in fact weather tight. This qualification must be included in the Evaluation Report.

Should you have already engaged a third party inspection Body (IB) to complete the work, then forward a copy of the Evaluation Report to my office for review. If the scope of the evaluation includes the enclosure as well as the generator assembly and ancillary equipment installed, then we will issue an installation permit to the contractor, who can then connect the equipment. If the equipment has not been evaluated as a complete assembly then you can contact one of the organizations listed in the attached Bulletin for assistance. It is generally a lower cost option to have equipment evaluated at the integrator's facility, prior to shipping to the North, as an initial review often reveals several components are not certified for Canada and require replacement with an approved equal.

Be advised that we will not accept a third party evaluation of the generator assembly that does not include examination and testing of the generator and ancillary equipment. A mark of conformity must not be applied to an assembly unless it is deemed in full compliance with Codes and Standards unless there is clear language in the report that the scope of the evaluation excludes certain components. This statement must appear on the System Label as well. A certification mark on the generator alternator does not imply that the rest of the components have been verified and tested as required; it simply covers the alternator. If a generator assembly with enclosure arrives on site without complete approvals it will remain disconnected until such time as the work can be completed by an accredited inspection agency.

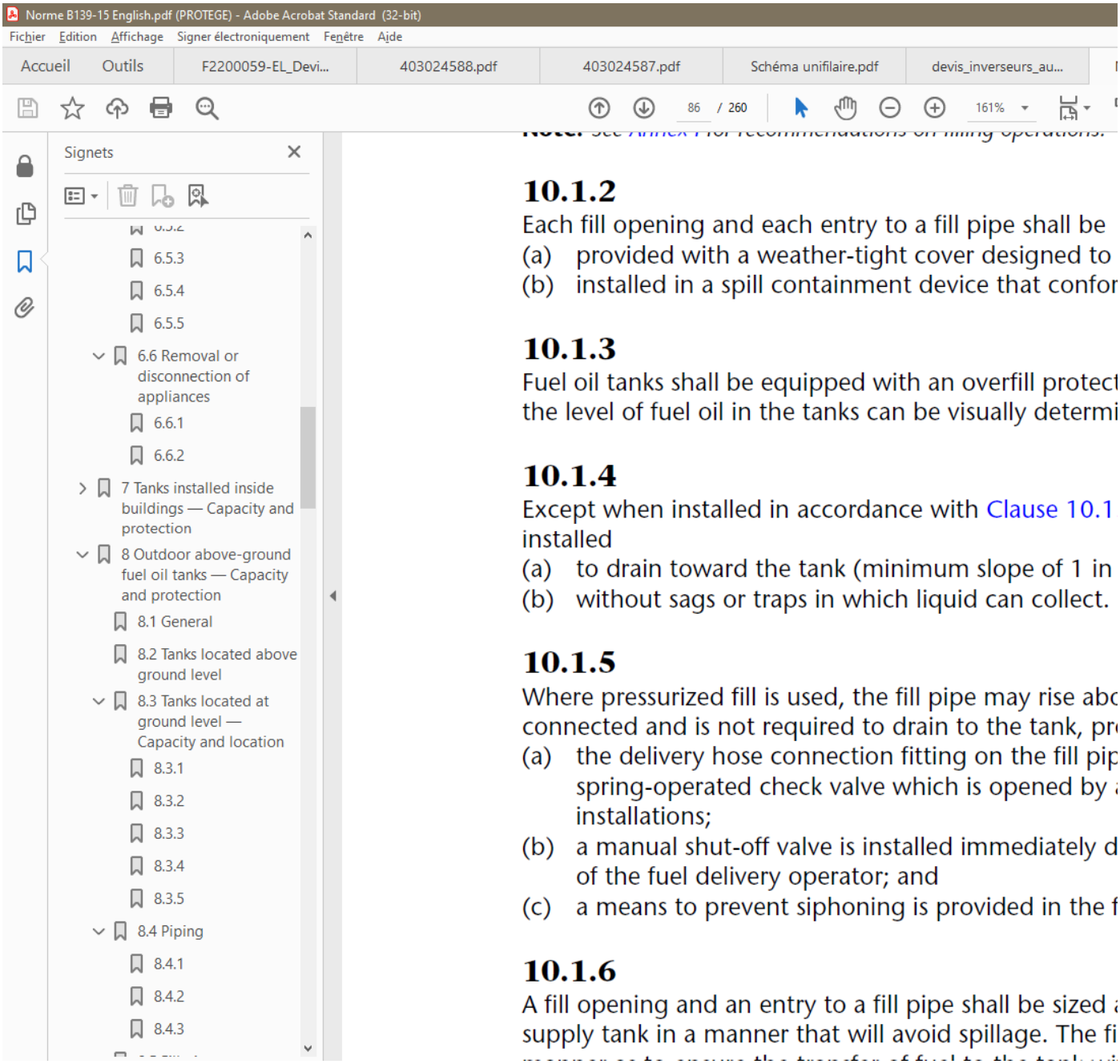
Sandra Rousseau

De: Cathy Brisson <cbrisson@yvonroyinc.com>
Envoyé: 16 février 2023 12:36
À: Sandra Rousseau
Objet: RE: WST - ELE - 001 generator
Pièces jointes: ELE-001 - generator and ATS - RR 2023-02-15 Annotations.pdf

Bonjour
Voici commentaires de Génératrice Drummond en annexe j'ai remis les commentaires de l'ingénieur
Donc refaire approbation du même dessin

1- ''Confirm Generator programmed…all shutdowns…. 26 32 14 par 2.3.2.3'' ; we are compliant ; see drawing p 45-47
2- ''coordinate site work'' ;by contractor
3- ''Contractor to coordinate…''; by contractor
4- ''which Control damper…'' ; Thermostat is provided, see Shop drawing p109, 113-116
5- ''Please identify thermostat….exhaust fan''; see shop drawing p 110
6- ''The enclosure design…..acceptable noise….at full load is too high'' ; see Add 5 Q7, stating 75 dBA is acceptable; so we are compliant to add 5
7- ''Details on fuel tank size and calculate….full capacity''; to meet short delivery(June 2023); we provide a 300 kw instead of a 250 kw as per spec;
So a 300 kw is 83.7 L/hr at full load, at 250 kw will be +- 250/300 x 83.7 L = 70 L/hr; specification is for 12 hrs (26 32 14 p10/15) = 840 L ; we provide 892 L tank
8- ''Tank must have a Fuel level Alert panel…..visual Indicator'' ; see below B139 par 10.1.3 ''Overfill Protection shall conform to ULC S661'' ; we provide Mechanical Overfill conform to ULC S661; see drawing p29
9- ''Dual Wall and ULC S601…tank'' ; we are compliant; will be added to revised drawing

Same drawings than ELE-001.



CATHY BRISSON
Resp. achats et projets

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SHOP DRAWINGS

REVISION 3

IQALUIT-Waste Transfer Station
CITY OF IQALUIT NUNAVUT

Project Wajax: 22MN0273M

Genset 300kW - 347/600V

Genset MTU, Model: MTU 6R0150 DS300
Marathon Alternator, Model: 432PSL6246

DATE : DECEMBER 12 2022

SALE REPRESENTATIVE: YVAN BROUILLETTE
TECHNICAL SUPPORT: STEPHANE DESMARAIS
SALE COORDINATOR: SÉBASTIEN GRAND BOIS

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5. STARTING SYSTEM
6. ELECTRONIC CONTROLS

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GENERATOR &
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BILL OF MATERIALS

List of Material

Génératrice Drummond

No de projet	2022-07-1223A
Dossier	22MN0273M
Projet	IQALUIT-Waste Transfer Station
Groupe	DS300D6S, 432PSL6246, 300 Kw, 375 KVA, 361A, 600V

Part No	Instruction	Quantity
	ATS	
ATH3LDA30400ESC	Automatic Transfer Switch C-H 400A 347/600V 3Ph 3P Nema 1 ATS	1.00
	Power Xpert 1000	1.00
	PXM1K-BIPP Com Module for PXM-	1.00
SUA86872	MODBUS GATEWAY TO ETHERNET-NET	1.00
	Lubrification System	
PANEGO	Galvanized drip failure for 16x28 oil	1.00
	Cooling System	
MTU	-20 F MTU coolant Preheater 2500W/208V 1 PH (CB125810-200)	1.00
	Electrical System	
SUA102878	PMG Mercedes OM926LA prix 566.83USlist (357.11 Cost us)	1.00
X57522500006	VOLTAGE REGULATOR DVR2400	1.00
PO # YU1351	Panel 4 circuit breakers* installed on the front of a Nema 1 box of dimensions, 42x24x10 + EXTRA	1.00
PLAQUEDPAF	"Fire Pump Breaker" Name plate	1.00
HDL36150CU33X	Square D 3P circuit Brkr 600V 150A (#14 - 3/0) (72270)	1.00
S29450	Auxiliary contact for Frame H-J-L-M-P-R Brkr	1.00
PLAQUEDPAF	"Fire Pump Breaker" Name plate	1.00
XT5NU340AENN0G0XXX	ABB XT5N 400Ekip Dip LS/I 400 3p FF	1.00
S29450	Auxiliary contact for Frame H-J-L-M-P-R Brkr	1.00
PLAQUEDCU	"Emergency Load Brkr" Name plate	1.00
XT5NU340AENN0G0XXX	ABB XT5N 400Ekip Dip LS/I 400 3p FF	1.00
S29450	Auxiliary contact for Frame H-J-L-M-P-R Brkr	1.00
DD31P925B	Battery EAST PENN 925CCA 12V (EPM)	2.00
MTU	Battery holder	2.00
X54942500005-MTU	Battery charger MTU MicroGenius® 300 24Vdc 10A	1.00
SER-1012	Charger warning label	1.00
MGC-2020	Controller MGC-2020	1.00
CRM024DC4LSS42H	24Vdc ABB 4P2D relay	4.00
3CPL112	12/24 panel circ, 3PH, 125A	1.00
SLA12-2L	Emergency lighting 72W/8 hours	2.00
HBL5262SA	RECEPTACLE 15A 125V	1.00
OAS05038/208V	Auxiliary heating 208V 5000W	2.00
C232MV	Fluorescent lighting 2X 32W/120V T8 c/a grille, switch and power supply	4.00
	Light OLWP11PEBZ LED	1.00
	Duplex socket (spare) indoor 15A	2.00
	Federal signal CO light indicator	1.00

List of Material

Génératrice Drummond

No de projet	2022-07-1223A
Dossier	22MN0273M
Projet	IQALUIT-Waste Transfer Station
Groupe	DS300D6S, 432PSL6246, 300 Kw, 375 KVA, 361A, 600V

Part No	Instruction	Quantity
	15A outdoor GFI duplex jack with on/off switch for each outlet	2.00
T775M2030/U	Honeywell electronic modulating thermostat 10VD	1.00
3813	ELECTRICAL BOX DUPLEX SOCKET	1.00
3854	Full duplex 120V box plate	1.00
FS100PR	Transformer 120/240 @ 12 / 24Vac 100VA Closed	1.00
CA7-16E-M22-24E	Relay, power = 30A/2hp/240V, 1½hp/120V, coil = 24vdc, DPDT	3.00
Exhaust System		
TS60TLS000	Cowl engine exhaust silencer TS residential grad	1.00
MTU	Exhaust gasket for 6" flange	1.00
MTU	Bolt kit for 6" flange	1.00
MTU	Unit mounted 12" silencer , Industrial Grade, Aluminized steel, Black, SISO (XG3041700064)	1.00
	Exhaust blankets- silencer	1.00
	Exhaust blankets- elbow	1.00
Fuel System		
TANK	Fuel tank, horizontal double wall construction ULC-S601 2900L (766gal)	1.00
MTU	Fuel flexible lines package (Supply & Return lines)	1.00
AE14002	Fuel double-wall leak detector	1.00
8640	Rochester level sender	1.00
9095SA0500AV	Overfill prevention valve	1.00
M4500-10678	Magnetic level sender Madison	1.00
E550-999	Fuel whistle 2"NPT	1.00
BOL REMPL 20L	Spill filling containment box 20 liters ULC 2"NPT	1.00
179-0100AC	Fuel fill cap with lock 2"NPTF	1.00
8680	Rochester level gauge	1.00
Ventilation System		
AFBUP	Belimo damper actuator	
3900 SERIES	Alumavent insulate control damper	
S12-E1	Ventil-x-pert SD wall ehhaust fan	1.00

List of Material

Génératrice Drummond

No de projet	2022-07-1223A
Dossier	22MN0273M
Projet	IQALUIT-Waste Transfer Station
Groupe	DS300D6S, 432PSL6246, 300 Kw, 375 KVA, 361A, 600V

Part No	Instruction	Quantity
	Enclosure	
	Enclosure - Walk-In 300kW 75dBA @ 7m	1.00
	- 4in wall construction 14ga steel	1.00
	- Double doors	1.00
	Miscellaneous	
SER-1010	Neutral tag	1.00
MANUEL ATS	User Manual - Automatic Switch Transfer - Eaton	1.00
MANUEL GENE	User Manual - Generator - CD + USB	1.00
1693-46	Wajax 4GB USB Flash Drive 2 colors	1.00
GARANTIE ATS	1 Year Warranty - Automatic Inverter - Eaton	1.00
GARANTIE GÉNÉ	5 ans COMP. 3000h	1.00
B125003	Air filter, John Deere 6135HFG84	2.00
DZ112918	ELEMENT FUEL FILTER	2.00
RE532952	ELEMENT FUEL FILTER	2.00
RE572785	OIL FILTER	2.00
E3SCO	Carbon monoxide senso	1.00
	REPLACEMENT FUSE KIT FOR MTU	
KIT-FUSIBLES	#H314005 Fuse H314 5A, 250V	1.00
	#314015 Fuse H314 15A, 250V	1.00
	#314020 Fuse H314 20A, 250V	1.00
	#ATO5 5A fuse (32Vdc rating)	2.00
	#ATO10 10A fuse (32Vdc rating)	2.00
	#ATO15 15A fuse (32Vdc rating)	2.00
	#ATO20 20A fuse (32Vdc rating)	2.00
	#ATO25 25A fuse (32Vdc rating)	2.00
	#BLS00.8 600V 8/10 A fast acting fuse	3.00
	#KTKR4/10 600V 4/10 A fast acting fuse	3.00
	#2184 4A 250V time delay fuse	1.00
	#ATO30 30A fuse (32Vdc rating)	1.00
	#H314010 Fuse H314 10A, 250V	1.00
	#MCL10 10A, 600V fast blow fuse	3.00
	#4629T14 Clear 9-compartment case	1.00

List of Material

Génératrice Drummond

No de projet	2022-07-1223A
Dossier	22MN0273M
Projet	IQALUIT-Waste Transfer Station
Groupe	DS300D6S, 432PSL6246, 300 Kw, 375 KVA, 361A, 600V

Part No	Instruction	Quantity
	Factory Test	
	noise test	1.00
	vibration test	1.00
	Test standard	1.00
	Test industriel (6 hrs @ 250 KW , + 0 hrs @ 0 KW)	1.00
	Testing with different load levels	1.00
	Testing the generator in the presence of the engineer	1.00
	Factory test book	1.00
TEST SONORE_1	Shop Sound test report by Tech. Service	1.00
TEST WALK-IN	General ventillation testing in Walk-in	1.00
	Dielectric strength tests	1.00
SER2185	COLLANT "+ D'UN CIRCUIT SOUS TENSION" // STICKER "+ OF ONE LIVE CIRCUIT"	1.00
SER1016	Ground sticker	1.00
	Fuse type identification label & rated current	1.00
	Label "Neutre raccordé au châssis en usine/Neutral factory bonded to frame"	1.00
SER-2187	TRANSFORMER FUSE STICKERS	1.00
	Conduct the Dielectric Test Using the Criterion AVC-25C Pot Tester	1.00
	Mise en service	
MEM FORMATION_1	Start-up and training on site	1.00

SECTION 1

GENERATOR SET DATASHEET

Diesel Generator Set

mtu 6R0150 DS300

300 kWe/60 Hz/Standby/208 - 600V
Reference *mtu* 6R0150 DS300 (275 kWe) for Prime Power for Stationary Emergency Rating Technical Data

System ratings

Voltage (L-L)	208V	240V	380V	480V	600V
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
kW	300	300	300	300	300
kVA	375	375	375	375	375
Amps	1,041	902	570	451	361
skVA@30% voltage dip	930	930	640	820	720
Generator model	433CSL6216	433CSL6216	433CSL6216	432CSL6212	432PSL6246
Temp rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD WYE	12 LEAD DELTA	12 LEAD WYE	12 LEAD WYE	4 LEAD WYE

Certifications and standards

- Emissions
  - EPA Tier 3 certified
  - South Coast Air Quality Management District (SCAQMD)
- Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Seismic certification - optional
  - 2018 IBC certification
  - HCAI pre-approval
- UL 2200 - optional
- CSA - optional
  - CSA C22.2 No. 100
  - CSA C22.2 No. 14
- Performance Assurance Certification (PAC)
  - Generator set tested to ISO 8528-5 for transient response
  - Verified product design, quality and performance integrity
  - All engine systems are prototype and factory tested
- Power rating
  - Accepts rated load in one step per NFPA 110
  - Permissible average power output during 24 hours of operation is approved up to 85%.

Standard features*

- Single source supplier
- Global product support
- Two (2) Year/3,000 Hour Basic Limited Warranty
- 6090HFG86 diesel engine
  - 9.0 liter displacement
  - Common rail fuel injection
  - 4-cycle
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
  - Integral set-mounted
  - Engine-driven fan
- Generator
  - Brushless, rotating field generator
  - 2/3 pitch windings
  - 300% short circuit capability with optional Permanent Magnet Generator (PMG)
- Digital control panel(s)
  - UL recognized, CSA certified, NFPA 110
  - Complete system metering
  - LCD display

Standard equipment*

Engine

- Air cleaner
- Oil pump
- Oil drain extension and shut-off valve
- Full flow oil filter
- Open crankcase ventilation
- Jacket water pump
- Thermostat
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 24V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery rack and cables
- Flexible fuel connectors
- Flexible exhaust connection
- EPA certified engine

Generator

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 130 °C maximum standby temperature rise
- 1-bearing, sealed
- Flexible coupling
- Full amortisseur windings
- 125% rotor balancing
- 3-phase voltage sensing
- ± 1% voltage regulation no load to full load
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Digital control panel(s)

- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- CANBus ECU communications
- Windows®-based software
- Multilingual capability
- Communications to remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

* Represents standard product only. Consult the factory/***mtu*** Distributor for additional configurations.

Application data

Engine

Manufacturer	John Deere
Model	6090HFG86
Type	4-cycle
Arrangement	6-inline
Displacement: L (in³)	9.0 (549)
Bore: cm (in)	11.84 (4.7)
Stroke: cm (in)	13.6 (5.4)
Compression ratio	16:1
Rated rpm	1,800
Engine governor	JDEC
Maximum power: kWm (bhp)	345 (463)
Steady state frequency band	± 0.25%
Air cleaner	dry

Liquid capacity

Total oil system: L (gal)	31 (8.19)
Engine jacket water capacity: L (gal)	16 (4.23)
System coolant capacity: L (gal)	53.5 (14.13)

Electrical

Electric volts DC	24
Cold cranking amps under -17.8 °C (0 °F)	950
Batteries: group size	31
Batteries: quantity	2

Fuel system

Fuel supply connection size	-10 JIC 37° female
Fuel return Connection size	-6 JIC 37° female
Maximum fuel Lift: m (ft)	2.4 (7.9)
Recommended fuel	diesel #2
Total fuel flow: L/hr (gal/hr)	239.92 (63.38)

Fuel consumption

At 100% of power rating: L/hr (gal/hr)	83.71 (22.11)
At 75% of power rating: L/hr (gal/hr)	67.34 (17.79)
At 50% of power rating: L/hr (gal/hr)	49.48 (13.07)

Cooling - radiator system

Ambient capacity of radiator: °C (°F)	50 (122)
Maximum restriction of cooling air: Intake and discharge side of radiator: kPa (in. H_2O)	0.124 (0.5)
Water pump capacity: L/min (gpm)	294.6 (78)
Heat rejection to coolant: kW (BTUM)	114 (6,489)
Heat rejection to air to air: kW (BTUM)	99.1 (5,641)
Heat radiated to ambient: kW (BTUM)	36.9 (2,099)
Fan power: kW (hp)	13.9 (18.6)

Air requirements

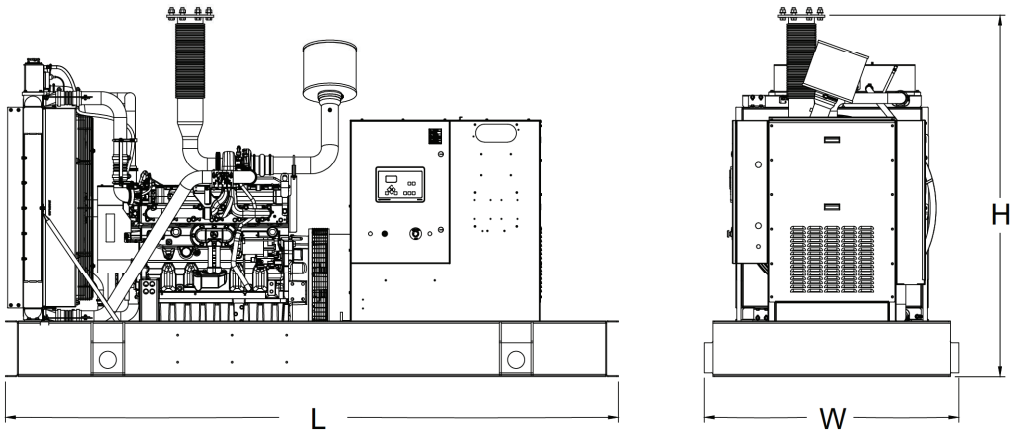
Aspirating: *m³/min (SCFM)	26.5 (936)
Air flow required for radiator cooled unit: *m³/min (SCFM)	507.6 (17,926)
Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: *m³/min (SCFM)	134 (4,733)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

Exhaust system

Gas temperature (stack): °C (°F)	497 (927)
Gas volume at stack temperature: m³/min (CFM)	63.6 (2,246)
Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H_2O)	7.5 (30)

Weights and dimensions



Drawing above for illustration purposes only, based on standard open power 480 volt generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight
Open Power Unit (OPU)	3,658 x 1,524 x 2,159 mm (144 x 60 x 85 in)	3,080 kg (6,790 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

Sound data

Unit type	Standby full load
Level 0 (OPU): dB(A)	85.6

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

Emissions data

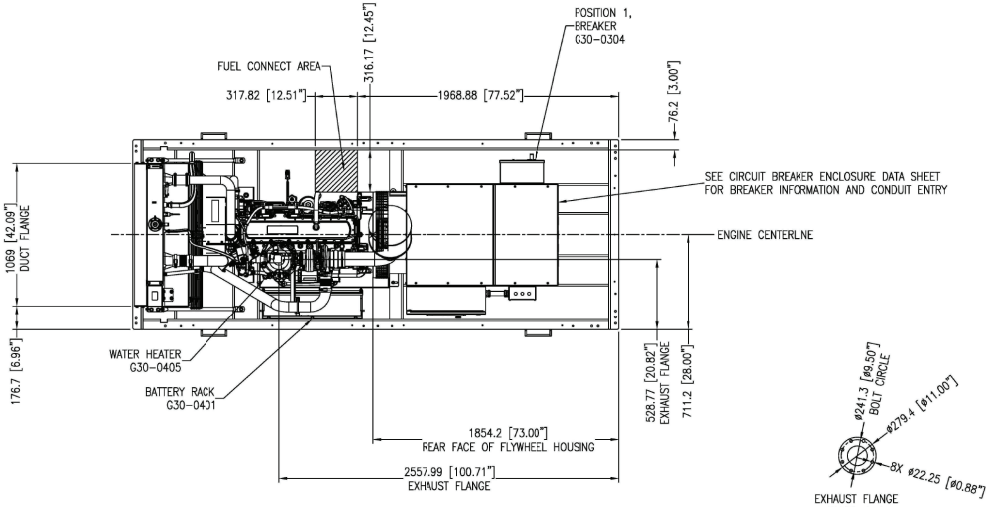
NO_x + NMHC	CO	PM
4.25	0.25	0.02

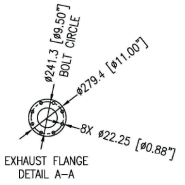
All units are in g/hp-hr and shown at 100% load (not comparable to EPA weighted cycle values). Emission levels of the engine may vary with ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data was obtained in compliance with US EPA regulations. The weighted cycle value (not shown) from each engine is guaranteed to be within the US EPA standards.

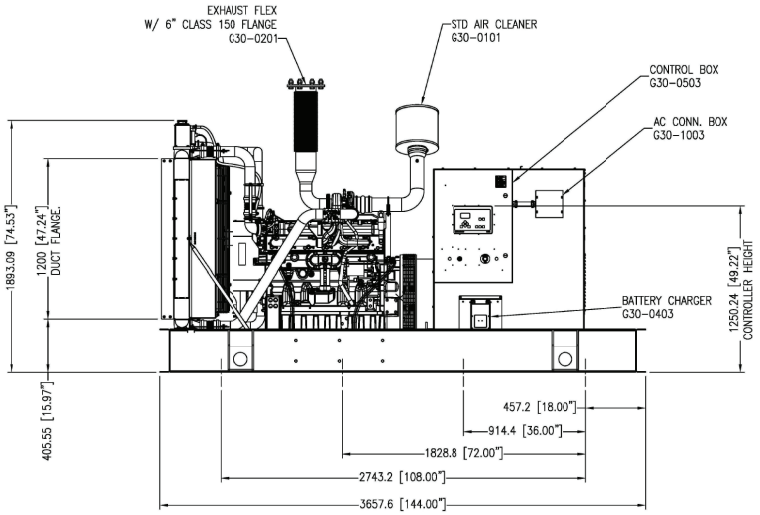
Rating definitions and conditions

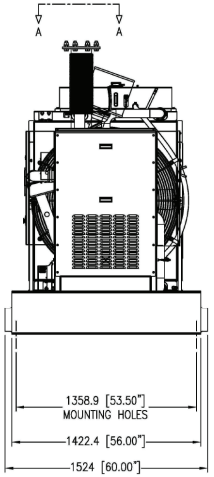
- Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, and AS 2789. Average load factor: ≤ 85%.
- Nominal ratings at standard conditions: 25 °C and 300 meters (77 °F and 1,000 feet).
- Deration factor:
  - Consult your local ***mtu*** Distributor for altitude derations.
  - Consult your local ***mtu*** Distributor for temperature derations.

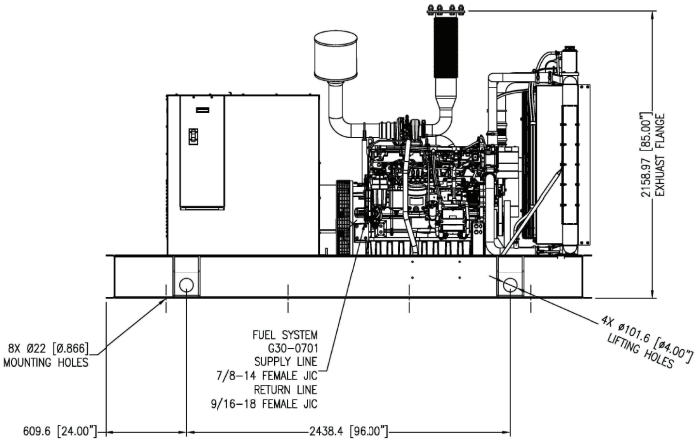
Subject to change. | 231116 | 2022-01











REVISION	DATE	DESCRIPTION
A	2020-04-01	UPDATED TITLE BLOCK

A Rolls-Royce solution

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APPLICABLE MODELS:
- MTU 6R0150 DS230
- MTU 6R0150 DS250
- MTU 6R0150 DS275
- MTU 6R0150 DS300

THIRD ANGLE PROJECTION

DRAWN TO SCALE
DIMENSIONS: MM [INCH]

DATE CREATED: 2018-08-17

DIMENSIONAL LAYOUT

DESCRIPTION: 230-300 kW Genset

ENGINE: John Deere, JD6090

WEIGHT (MIN-MAX): 2750-3555 KG 6063-7838 LB

DRAWING NUMBER: XZG3000100130

SHEET: 1 of 2

SECTION 2
ENGINE

2.1 ENGINE DATASHEET

ENGINE PERFORMANCE CURVE

Rating: Gross Power
Application: Generator
Emergency Stationary (300 kWe Market)
1800 RPM (60 Hz)

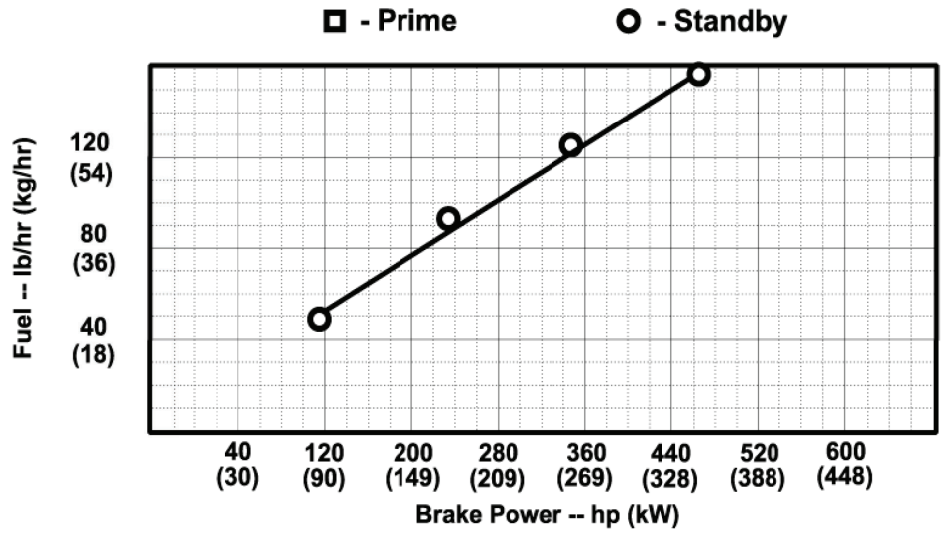
PowerTech™ E 9.0L Engine
Model: 6090HFG86

NA hp (NA kW) Prime
463 hp (345 kW) Standby

Nominal Engine Power @ 1800 RPM			
Prime		Standby	
HP	kW	HP	kW
NA	NA	463	345

Generator Efficiency %	Fan Power (4% of Standby)		Power Factor	Prime Rating		Standby Rating	
	hp	kW		kWe	kVA	kWe	kVA
90-94	18.5	13.8	0.8	NA	NA	298-311	373-389

Note 1: Based on nominal engine power.



STANDARD CONDITIONS

Air Intake Restriction.....12 in.H_2O (3 kPa)
Exhaust Back Pressure.....30 in.H_2O (7.5 kPa)

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 3046 conditions:
- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:
- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85kg
- Torque: N·m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:

Designed/Calibrated to meet:	Certified by:
• EPA Tier 3 Ref: Engine Emission Label	Shawn Kuelbey 22Dec10

Performance Curve: 6090HFG86_A

Engine Installation Criteria

General Data

Model	6090HFG86	
Number of Cylinders	6	
Bore	118.4 mm	4.7 in.
Stroke	136 mm	5.4 in.
Displacement	9.0 L	549 in.³
Compression Ratio	16.0 : 1	
Valves per Cylinder, Intake/Exhaust	2 / 2	
Firing Order	1-5-3-6-2-4	
Combustion System	HPCR	
Engine Type	In-line, 4-cycle	
Aspiration	Turbocharged and air-to-air aftercooled	
Charge Air Cooling System	Air-to-Air	
Engine Crankcase Vent System	Open	

Physical Data

Length	1208 mm	47.6 in.
Width	635 mm	25.0 in.
Height	1132 mm	44.6 in.
Weight, with oil &no coolant (Includes engine, flywheel housing, flywheel &electrics)	841 kg	1854 lb
Center of Gravity Location, X-axis From Rear Face of Block	-400.8 mm	-15.8 in.
Center of Gravity Location, Y-axis Right of Crankshaft	-18.6 mm	-0.7 in.
Center of Gravity Location, Z-axis Above Crankshaft	76.2 mm	3.0 in.
Max. Allowable Static Bending Moment At Rear Face of Flywheel Housing with 5-G Load	814 N·m	600 lb-ft
Thrust Bearing Load Limit Forward, Intermittent	13000 N	2923 lb
Thrust Bearing Load Limit Forward, Continuous	8600 N	1933 lb
Thrust Bearing Load Limit Rearward, Intermittent	6000 N	1349 lb
Thrust Bearing Load Limit Rearward, Continuous	4000 N	899 lb
Max. Continuous Damper Temp	82 °C	180 °F
Max. Torsional Vibration, Front of Crank		0.25 DDA

Electrical System

Recommended Battery Capacity, 12V @32 °F (0 °C)		1100 amps
Recommended Battery Capacity, 24V @32 °F (0 °C)		750 amps
Starter Rolling Current, 12V @32 °F (0 °C)		920 amps
Starter Rolling Current, 24V @32 °F (0 °C)		600 amps
Starter Rolling Current, 12V @-22 °F (-30 °C)		1300 amps
Starter Rolling Current, 24V @-22 °F (-30 °C)		700 amps
Min. Voltage at ECU during Cranking, 12V		6 volts
Min. Voltage at ECU during Cranking, 24V		10 volts
Max. Voltage Drop, Battery to Starter		0.8 volts
Max. Allowable Start Circuit Resistance, 12V		0.0012 Ohm
Max. Allowable Start Circuit Resistance, 24V		0.002 Ohm
Max. Voltage From Engine to Crankshaft, 12V		0.15 volts
Max. Voltage From Engine to Crankshaft, 24V		0.15 volts
Max. ECU Temperature	105 °C	221 °F
Max. VTG Actuator Surface Temp		NA
Max. Harness Temperature	125 °C	257 °F
Max. Alternator Temperature	120 °C	248 °F
Max. Starter Temperature	120 °C	248 °F
Max. Temperature, All Other Electronics	125 °C	257 °F

Performance Curve: 6090HFG86_A

Engine Installation Criteria

Charge Air Cooling System

Air-to-Air Heat Rejection	99.1	kW	5641	BTU/min
Intake Manifold Pressure	273.5	kPa	39.7	psi
Compressor Discharge Temperature @77°F(25°C) Ambient Air	253.2	°C	488	°F
Compressor Discharge Temperature @117°F(47°C) 80 kPa Barametric pressure			NA	
Max. Temperature Out of Charge Air Cooler @All Ambient Conditions	88	°C	190	°F
Intake Manifold Temperature at which Power De-rate Occurs	89.5	°C	193	°F
Intake Manifold Temperature at which Severe Power De-rate Occurs	91	°C	195.8	°F
Max. CAC System Volume			NA	
Max. Pressure Drop through CAC	16	kPa	64.0	in. H_2O
Max. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air	45	°C	113	°F
Min. Temperature Out of Charge Air Cooler @77°F (25°C) Ambient Air			NA	
Max. Bending Moment on Compressor Outlet	7	N·m	5	lb-ft
Max. Shear on Compressor Outlet	11	kg	24	lb

Cooling System

Engine Heat Rejection	114	kW	6489	BTU/min
Engine Radiated Heat	13.5	kW	768	BTU/min
Coolant Flow	294.6	L/min	78	gal/min
Thermostat Start to Open	82	°C	180	°F
Thermostat Fully Open	94	°C	201	°F
Engine Coolant Capacity	16	Liter	16.9	quart
Min. Coolant Fill Rate	12	L/min	3.2	gal/min
Min. Pump Inlet Pressure @194°F (90°C) Coolant			NA	
Min. Pump Inlet Pressure @203°F (95°C) Coolant	30	kPaa	4	psia
Min. External Coolant Restriction			NA	
Max. External Ccolant Restriction	40	kPa	6	psi
Max. Top Tank Temperature	110	°C	230	°F
Max. Top Tank Temperature 95% of Operating Hours	100	°C	212	°F
Min. Limiting Ambient Temperature	47	°C	117	°F

Exhaust System

Exhaust Flow	63.6	m³/min	2246	ft.³/min
Exhaust Temperature	497	°C	927	°F
Max. Allowable Exhaust Restriction	7.5	kPa	30	in. H_2O
Min. Allowable Exhaust Restriction			NA	
Max. Bending Moment on Turbo Outlet	7	N·m	5.2	lb-ft
Max. Shear on Turbine Outlet	11	kg	24	lb

Fuel System

ECU Description			L14 Controller	
Fuel Injection Pump			Denso HP4	
Governor Type			Electronic	
Governor Regulation			Selectable	
Total Fuel Flow	204	kg/hr	450	lb/hr
Fuel Consumption	71.2	kg/hr	157.0	lb/hr
Fuel Temperature Rise, Inlet to Return	30	Δ°C	54	Δ°F
Max. Fuel Inlet Restriction	30	kPa	120	in. H_2O
Min. Fuel Inlet Pressure	-30	kPa	-120	in. H_2O
Max. Fuel Inlet Pressure	20	kPa	80	in. H_2O
Max. Fuel Return Pressure	20	kPa	80	in. H_2O
Max. Fuel Inlet Temperature	80	°C	176	°F
Fuel Filter @98% Efficiency			2	mic

Lubrication System

Oil Pressure at Rated Speed	260	kPa	38	psi
Oil Pressure at Low Idle			NA	
In-Pan Oil Temperature	116	°C	241	°F
Max. Oil Carryover in Blow-By	1.0	g/hr	0.002	lb/hr
Max. Airflow in Blow-By	150	L/min	39.6	gal/min
Max. Crankcase Pressure	0.5	kPa	2	in. H_2O

Performance Curve: 6090HFG86_A

Engine Installation Criteria

Air Intake System

Engine Air Flow	26.5	m³/min	936	ft.³/min
Air Mass Flow	1700	kg/hr	3748	lb/hr
Maximum Allowable Temperature Rise, Ambient Air to Engine Inlet	8	Δ°C	15	Δ°F
Max. Air Intake Restriction, Clean Air Cleaner	3.75	kPa	15.0	in. H_2O
Max. Air Intake Restriction, Dirty Air Cleaner	6.25	kPa	25.0	in. H_2O
Air Cleaner Efficiency			99.9	%

Performance Data

Rated Power, Prime	NA		NA	
Rated Power, Standby	463	HP	345	kW
Rated Speed			1800	rpm
Low Idle Speed			NA	
Rated Torque, Prime			NA	
Rated Torque, Standby	1830	N·m	1350	lb-ft
BMEP, Prime			NA	
BMEP, Standby	2556	kPa	371	psi
Altitude Capability	762	m	2500	ft
Friction Power @Rated Speed	24	kW	32	HP
Air:Fuel Ratio			23.9 : 1	
Smoke @Rated Speed			0.22	Bosch No.
Noise @1 m		dB(A)		
Block Load Capability, ISO 8528 G2		%		

Fuel Consumption	Prime		Standby	
	lb/hr	kg/h	lb/hr	kg/h
25 % Power	0.0	0.0	49.2	22.3
50 % Power	0.0	0.0	92.8	42.1
75 % Power	0.0	0.0	126.3	57.3
100 % Power	0.0	0.0	157.0	71.2

Performance Curve: 6090HFG86_A

2.2 COOLING SYSTEM

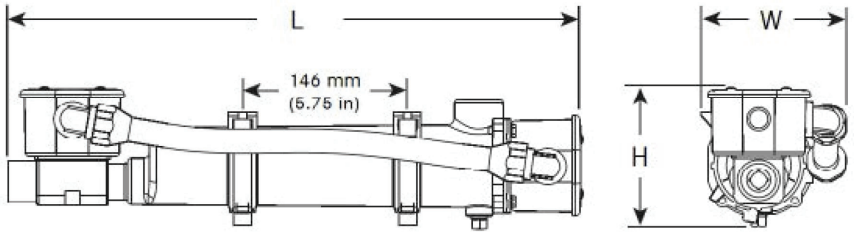
Water Heater Data Sheet

CB, CL, and WL Series

The CB, CL, and WL tank-style engine heaters are designed to preheat diesel and gas engines in generator set applications. With easy start-up regardless of ambient temperature, they feature a built-in thermostat and heat engines from 6L to 25L displacement. Thermosiphon circulation of the coolant delivers heat throughout the entire engine for optimum performance.



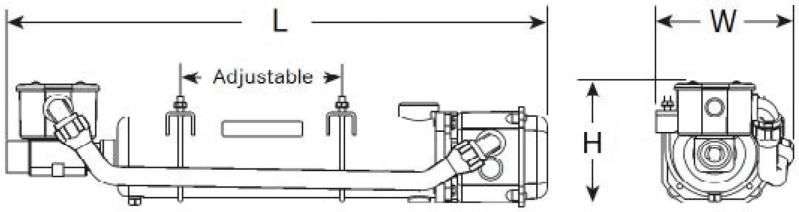
CB Model with Thermostat



CB Model



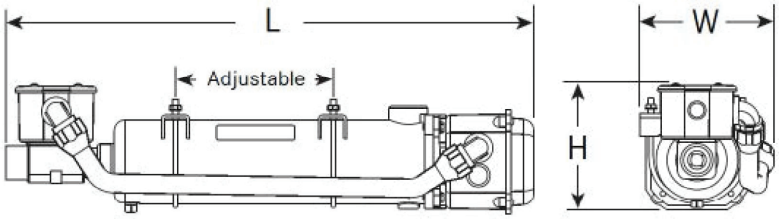
CL Model with Thermostat



CL Model



WL Model with Thermostat



WL Model

CERTIFICATIONS AND STANDARDS

- CB and CL Models: c-UL-us Listed, CSA Certified, and CE Compliant
- WL Model: CE Compliant

SPECIFICATIONS

	CB Model	CL Model	WL Model
Height:	132 mm (5.2 in)	147 mm (5.8 in)	147 mm (5.8 in)
Length:	510 mm (20.1 in)	597 mm (23.5 in)	597 mm (23.5 in)
Width:	129 mm (5.1 in)	158 mm (6.2 in)	158 mm (6.2 in)
Weight:	3 kg (6.9 lb)	4.5 kg (10 lb)	4.5 kg (10 lb)

A Rolls-Royce solution

SPECIFICATIONS, continued

- Heating Fluid: Engine coolant (50% glycol/50% water)
- Power: 1.5, 2, 2.5, 3, 4, and 5 kW
- Rated Voltage: 120V – 575V
- Phase: 1 and 3
- Enclosure: IP44
- Fluid Capacity:
  - CL and WL Models: 2 L (0.5 gal)
  - CB Models: 1.2 L (0.3 gal)
- Max Pressure: 8.61 bar (125 psi)
- Inlet / Outlet: 1" NPT Male / 1" NPT Female
- Thermostat Range:
  - On: 38 °C (100 °F)
  - Off: 49 °C (120 °F)

Model Number	*mtu* Part Number	Watts	Volts	Phase	Hz	Amps
CB115410-200	SUA98952	1,500	480	1	60	3.1
CB120210-200	SUA98996	2,000	240	1	60	8.3
CB120410-200	SUA98953	2,000	480	1	60	4.2
CB120810-200	SUA98404	2,000	208	1	60	9.6
CB125210-200	SUA96723	2,500	240	1	60	10.4
CB125410-200	SUA90334	2,500	480	1	60	5.2
CB125810-200	SUA96727	2,500	208	1	60	12
CL130410-200	SUA97791	3,000	480	1	60	6.3
CL140210-200	SUA99109	4,000	240	1	60	16.7
CL140410-200	SUA52741	4,000	480	1	60	8.3
CL140810-200	SUA99110	4,000	208	1	60	19.2
CL150210-200	SUA98913	5,000	240	1	60	20.8
CL150212-200	SUA82416	5000	240	1	60	20.8
CL150412-200	SUA83334	5000	480	1	60	10.4
CL150810-200	SUA96725	5,000	208	1	60	24
WL325410-200	SUA96568	2,500	480	3	60	3
WL325810-200	SUA97254	2,500	208	3	60	6.9
WL340410-200	SUA96787	4,000	480	3	60	4.8
WL340810-200	SUA99286	4,000	208	3	60	11.1
WL350410-200	SUA98951	5,000	480	3	60	6
WL350810-200	SUA92800	5,000	208	3	60	13.9

Subject to change. | WT00043030 | 2021-07

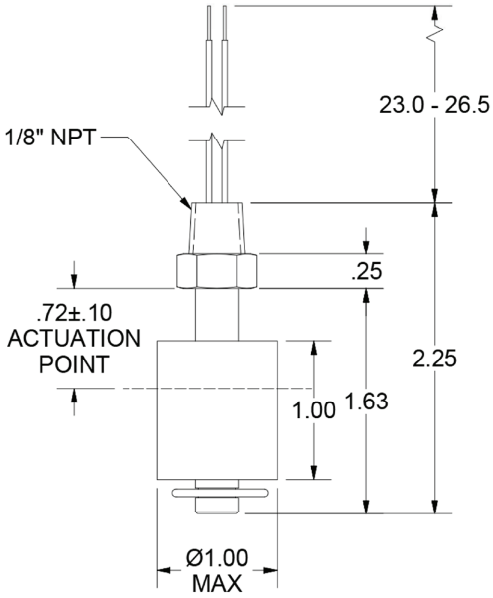
2.3 FUEL SYSTEM

Model # M4500 Technical Data Sheet

Miniature float switch, brass and Buna, 1/8" NPT

Madison Home » Point Level Float Switch Series » Miniature float switch, brass and Buna, 1/8" NPT





Applications:

- Detects high/low levels in a container
- Stem diameter of 0.313” and float diameter of 1.0”
- Materials typically used for hydrocarbon based liquids
- All NPT vertical switches can be extended with pipe to meet custom tank depths

Madison Company, Inc.
27 Business Park Drive
Branford, CT 06405

203-488-4477 or 800-466-5383
info@madisonco.com
www.madisonco.com

MADE IN THE USA

Sensing Solutions since 1959

Model # M4500 Technical Data Sheet

Miniature float switch, brass and Buna, 1/8" NPT

Specifications:

Approvals	CE, UL, CSA
Electrical Ratings	240 VAC, 0.14A; 120 VAC, 0.28A; 120 VDC, 0.07A; 24 VDC, 0.28A
Float Material	Buna-N
Float SG	0.45
Lead Wires	24", 22 AWG, Teflon Insulated
Max Pressure	150 PSI
Max Temperature	221˚F (105˚C)
Mounting	1/8" NPT
Note	Electrical Switch Ratings are shown for resistive loads as tested by UL at different voltages. See our Electrical Considerations for typical inductive or capacitive load considerations. The wire clips are made to be removed and replaced up to 10 times, while maintaining a holding force of 3 lb.
Stem Material	Brass
Switch Rating	30 Watt, SPST
Type	Miniature Switch

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ROCHESTER GAUGES, INC.

ISO 9001:2008 CERTIFIED

Magnetic Liquid-Level Gauges

8600 Series

Magnetic Liquid-Level Gauges

Application

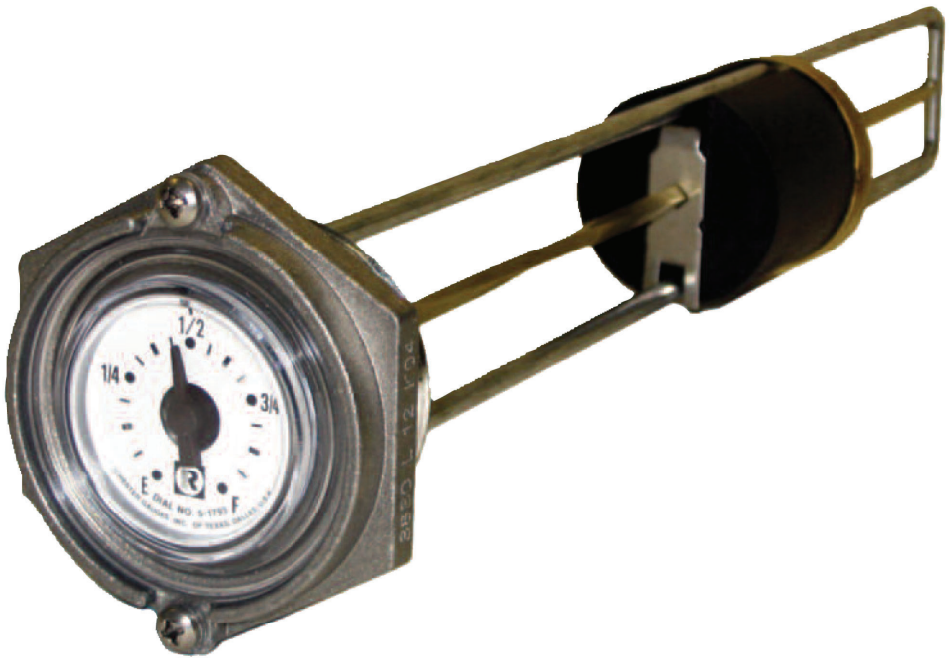
The 8600 Series Senior™ spiral gauges are designed for use in measuring liquid levels in hydraulic, lubricating or fuel-oil storage tanks, and gasoline and diesel fuel levels in stationary, standby and mobile generators. The 8600 Series is not recommended for off-road equipment.

General Information & Features

The 8640 spiral gauge incorporates a strong Alnico magnet capable of driving a TwinSite™ sender which provides a direct, fractional reading and also sends an electrical signal to a remote receiver.

The 8660 spiral gauge is supplied with an easy to read, side-view fractional dial. The model 8680 spiral gauge is equipped with a standard top reading fractional dial.

All 8600 Series spiral gauges have a 1 ½" MNPT tank connection and are suitable for tank pressures up to 25 psig maximum. They are designed for top mounting in tanks up to 36" deep and some models are UL listed for flammable liquids.



Model #	Sender or Dial Type
→ 8640	Senior TwinSite™ Sender in choice of 0-30, 0-90, or 240-30 Ohm ranges. Specify your preference when ordering.
8660	#5025S00570 Senior™ side-reading fractional dial.
→ 8680	#5844S01793 Senior™ direct-reading fractional dial.

08/26/10

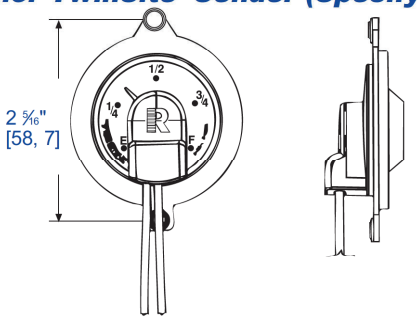
See reverse side for dimensional data, materials of construction, performance, and advice on how to order.

The Measure of Excellence

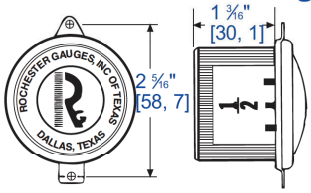
8600 Series Magnetic Liquid-Level Gauges

[METRIC]

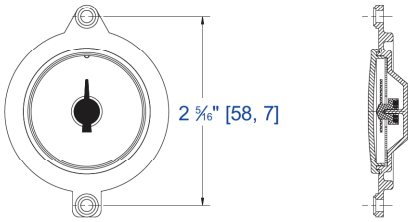
Senior TwinSite™ Sender (Specify ohm range)



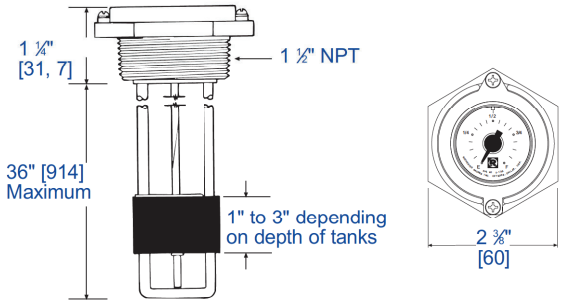
Senior Side-Reading Dial



Senior Dial



Standard Construction



General Specifications*

Mounting
Designed for top-mounting only.

Repeatability
Repeatability depends on proper gauge sizing & tank configuration. Normally, standard dials are ±7%; side-reading dials are ±8%; & TwinSite™ senders are ±12%. Vibration improves repeatability.

Temperature
Standard operating range is -40°F to 158°F, -40C to 70C.

Humidity
Exposed portion should be painted for marine applications, less dial.

Shock
Shorter sizes are suitable for some mobile, off-road application.

Vibration
Shorter sizes are suitable for some mobile, off-road application.

Power
0.5 watts maximum for TwinSite™ versions.

Tank Pressure
0 to 25 psig [0 - 1, 7 Bar] maximum.

Approval
Direct indicating gauge. Available UL listed for flammable liquids. Some models UL recognized for marine service.

Materials of Construction*

Head
Die-cast zinc.

Guide Rod
Zinc-plated steel.

Centershaft
Brass.

Tie Plate, Guide & Bearing Pin
Stainless steel.

Float
Nitrile rubber.

Drive Magnet
Alnico.

Standard Dial
Polycarbonate, hermetically sealed.

Side-View Dial
Aluminum with polycarbonate crystal, hermetically sealed.

TwinSite™ Sender
Polyamide.

* Materials and specifications are subject to change without notice.
Pressure ratings subject to change due to temperature and other environmental considerations.

When ordering, specify:

1. Gauge model number.
2. Tank height.
3. Ohm range on TwinSite™ versions.
4. Riser height, if any.
5. Any special requirements.

08/26/10

ROCHESTER GAUGES, INC.

The Measure of Excellence

11616 Harry Hines Blvd. • P.O. Box 29242 • Dallas, TX 75229 • (972) 241-2161 • *FAX* (972) 620-1403
Website http://www.rochestergauges.com • ***E-mail*** info@rochestergauges.com

Model 9095SA 2” Overfill Prevention Valve

SPECIFICATION SHEET

Application

The 9095SA series overfill prevention valve is designed to prevent the overfilling of liquid storage tanks by providing a positive shut-off during a pressurized fill.



9095SA (2”)

Features and Details

Direct Fill Installations

- Installs on tank top by threading onto a 2 inch male NPT riser
- Installs inside 2” Morrison Model 516 or 518 tank top spill container

Remote Fill Installations

- Valve has 2” female NPT inlet threads for installation piping to remote fill point

- Field adjustable shutoff range between 2” to 12”
- Full flow until shutoff point
- Designed for fuel not requiring a drop tube

Materials of Construction

- Direct fill adaptor... aluminum (Part A or Part F)
- Body and piston... passivated aluminum
- Upper float rod... stainless steel
- Lower float rod... passivated aluminum
- Float... polypropylene
- Float guard... polypropylene

Operational Criteria

- Minimum 5 PSI flow requirements
- Maximum operating pressure is 100 PSI
- Maximum viscosity of 300 centistokes
- A tight fill connection is required for the valve to operate
- The estimated flow rate is 110 GPM at 10PSI pressure drop. (See flow curve.)

Code Compliance

ULC-S661-10 listed, NFPA 30, 30A, UFC, IFC, PEI/RP 200, PEI/RP 600, and Florida DEP EQ-858

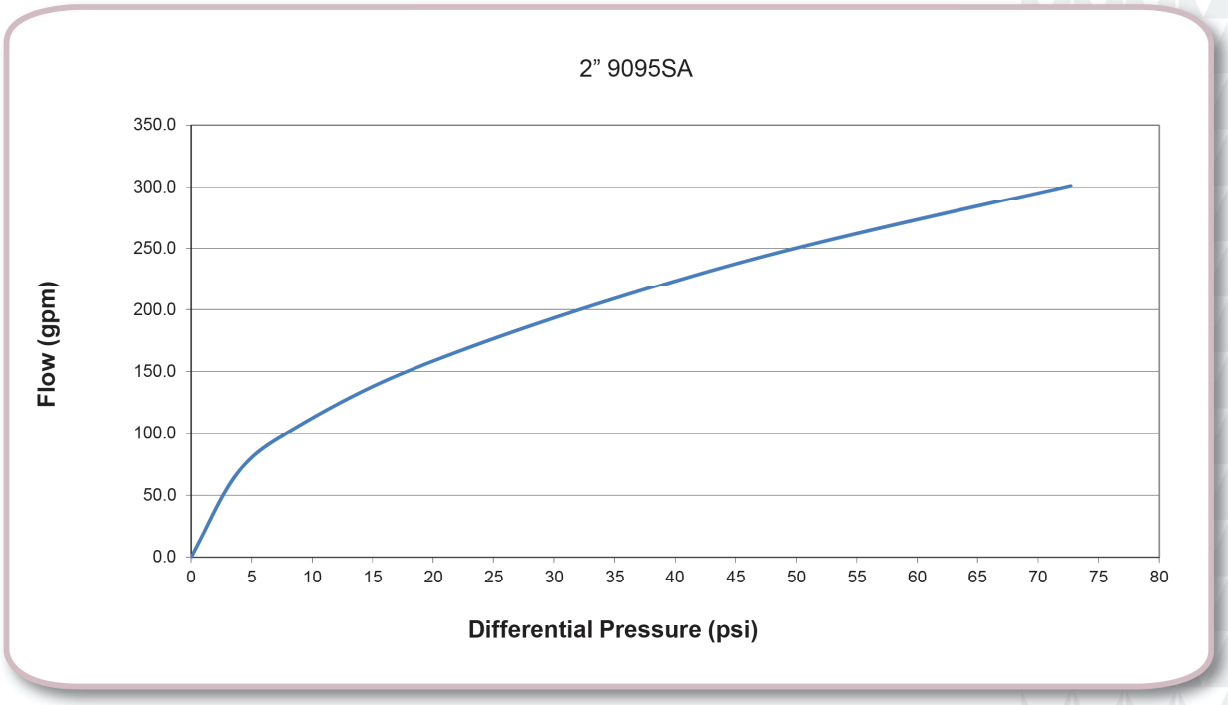
Fluid Compatibility

Diesel fuel, Biodiesel, and fuel oil. (Other fluids may also be compatible with further review)

Item Number	Size	Adaptor Number*	Description	Weight (lbs)
9095SA0200 AV	2”	800FSA1000 AA	Overfill prevention valve with part F male threaded, aluminum	6.10
9095SA0500 AV	2”	9095A-0224 MA	Overfill prevention valve with part A female threaded, aluminum	6.10
9095SA9200 AV	2”	N/A	Overfill prevention valve less top connection, aluminum	6.10

*Included with purchase of a 9095SA.

Flow chart on next page...



570 E. 7th Street, P.O. Box 238 | Dubuque, IA 52004-0238
t. 563.583.5701 | 800.553.4840 | f. 563.583.5028
www.morbros.com

Model 516 5-Gallon Spill Container

SPECIFICATION SHEET

Tank top spill containers are designed to contain small spills that occur at the fill point on aboveground storage tanks. The 516 has a hinged cover that is lockable with a padlock. EVR approved models available.



Certifications & Listings

- Florida DEP EQ 725
- California Air Resources Board Phase I AST EVR
- ULC listed

ID Number	B	C	D	E	F	G	H	I	J
516---0200 ACPW	F	2	No	Centered	12.03	17.2	13.2	17	Yes
516---0400 ACPW	F	4	No	Centered	13.41	17.2	13.2	21	Yes
516D--0200 ACPW	F	2	Yes	Centered	13.16	17.2	13.2	17	Yes
516D--0400 ACPW	F	4	Yes	Centered	13.41	17.2	13.2	21	Yes
516O--0200 ACPW	F	2	No	Offset	12.03	17.2	13.2	17	Yes
516O--0400 ACPW	F	4	No	Offset	13.41	17.2	13.2	21	Yes
EVR 516O--0400ACEVR	F	4	No	Offset	13.41	17.2	13.2	21	Yes
516OD-0200 ACPW	F	2	Yes	Offset	13.16	17.2	13.2	17	Yes
516OD-0400 ACPW	F	4	Yes	Offset	13.41	17.2	13.2	21	Yes
516M--0200 ACPW	M	2	No	Centered	12.28	17.2	13.2	16.5	Yes
516M--0400 ACPW	M	4	No	Centered	13.78	17.2	13.2	19	Yes
516MD-0200 ACPW	M	2	Yes	Centered	13.28	17.2	13.2	17.5	Yes
516MD-0400 ACPW	M	4	Yes	Centered	13.78	17.2	13.2	20.5	Yes
516MO-0200 ACPW	M	2	No	Offset	12.28	17.2	13.2	17	Yes
516MO-0400 ACPW	M	4	No	Offset	13.78	17.2	13.2	19	Yes
EVR 516MO-0400ACEVR	M	4	No	Offset	13.78	17.2	13.2	19	Yes
→ 516MOD0200 ACPW	M	2	Yes	Offset	13.28	17.2	13.2	17.5	Yes
516MOD0400 ACPW	M	4	Yes	Offset	13.78	17.2	13.2	20.5	Yes

SPECIFICATION OPTIONS:

B—Mounting connection:
Male (M)
Female (F)
C—Size: NPT threads
D—Drain: Yes/No
E—Mount
F—Height (inches)
G—Width (inches)
H—Body diameter
I—Shipping weight (lbs.)
J—ULC listing

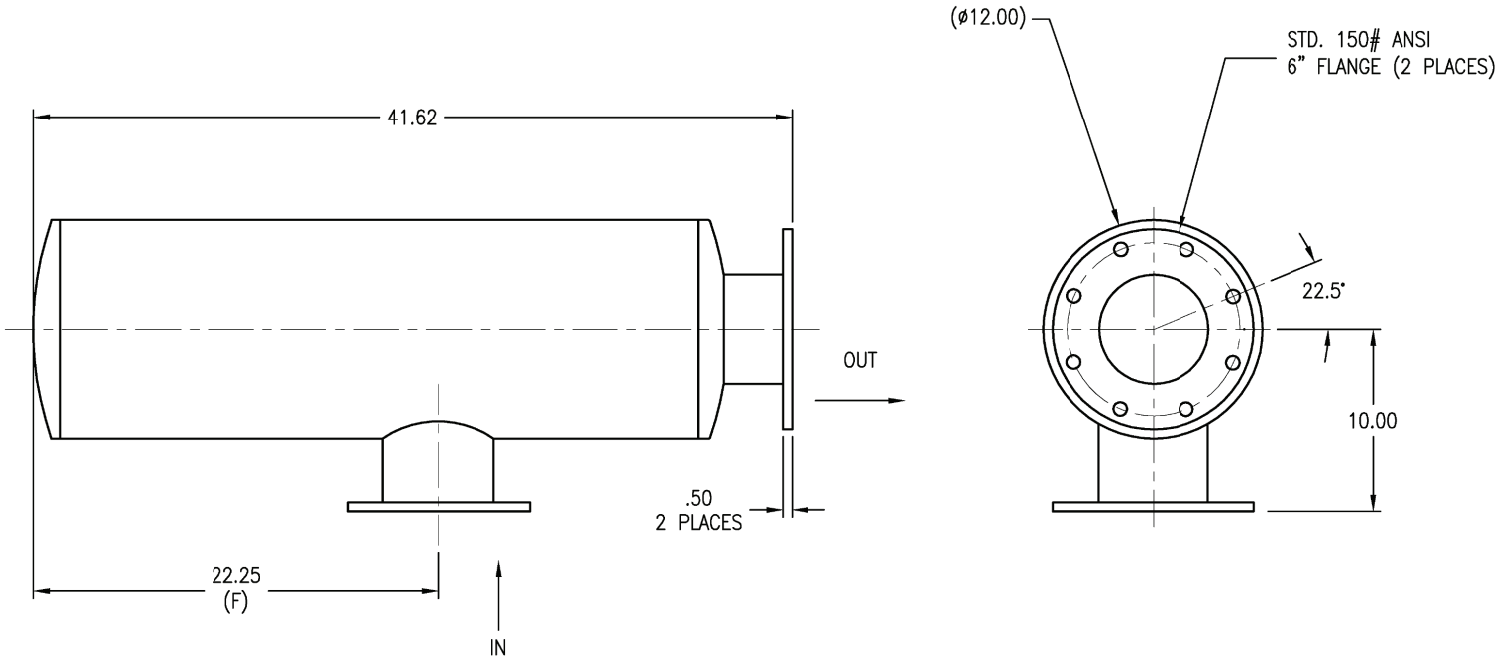
Body: Powdercoated white; black powdercoat optional
Lid: Powdercoated white; black powdercoat optional
Other hardware: Zinc plated steel

Optional with drain
Drain push rod: Brass
Drain nut: Brass
Spring: Bronze
O-Ring: Fluoroelastomer

MORRISON BROS. CO.
570 E. 7th Street, P.O. Box 238 | Dubuque, IA 52004-0238
t. 563.583.5701 | 800.553.4840 | f. 563.583.5028
www.morbros.com

2.4 EXHAUST SYSTEM

DWG. #: 61423



NOTES:

1 DIM. (F) = 22.25
2 AVERAGE ATTENUATION CURVE: 12–18 dBA
3 WELD SEAMS ALL AROUND
4 BODY ALUMINIZED STEEL 16 GA.
5 GAS TEMP 880°F MAX AT INLET.
6 GAS VOLUME 2860 CFM MAX
7 BACK PRESSURE NOT TO EXCEED 40 In H20

REV	ECO	REVISION DESCRIPTION	DATE	BY

THIS DRAWING IS PROPERTY OF MTU ONSITE ENERGY CORPORATION AND CANNOT BE USED EXCEPT IN CONNECTION WITH MTU ONSITE ENERGY CORPORATION POWER GENERATION PRODUCTS. ANY THIRD PARTY REPRODUCTION OF THIS DRAWING, MTU ONSITE ENERGY CORPORATION RESERVES ALL RIGHTS OF THIS DRAWING.

onsite energy

TOLERANCES
X = +/- .125
.XX = +/- .062
.XXX = +/- .031
FRACTIONAL = +/- 1/8
(UNLESS OTHERWISE SPECIFIED)
DRAWN TO SCALE
ALL DIMENSIONS ARE IN INCHES (B-1)

MATERIAL:	SEE NOTES
FINISH:	HIGH TEMP BLACK
DATE:	4–16–09
DRAWN BY:	A.E.F.
PART NO.:	61423
WEIGHT:	50#
SHEET:	1 OF 1

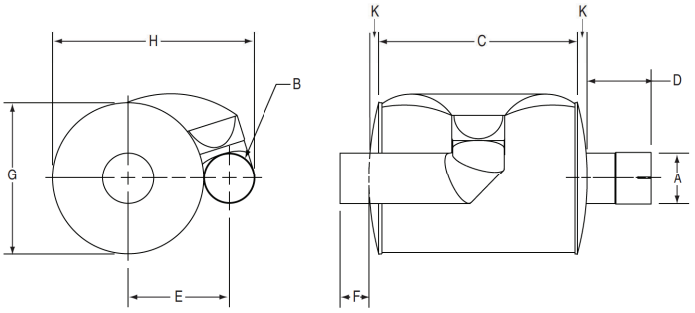
DESCRIPTION:
MUFFLER
6" SI (F) = 22.25
INDUSTRIAL GRADE

DWG. #: 61423

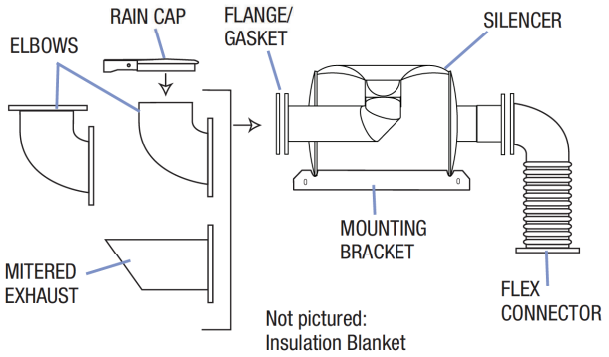
Engine Exhaust Silencers
TS RESIDENTIAL GRADE — "TL" MODEL

Standard Features

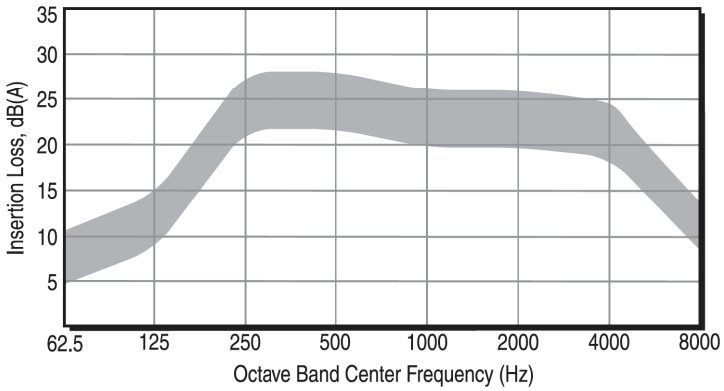
- Typical Insertion Loss = 22 — 28 dB(A)
  (Actual Insertion Loss May Vary Per Application)
- Compact Spiral Chamber Design
- Low Back Pressure
- Aluminized Steel Construction
- Low Weight
- Standard Slip-Fit Connections
- Standard High Temp Finish
- Complete Line of Accessories and Mounting Brackets
- Stainless Steel Construction & Factory Customization Available



Engine Exhaust Silencer Shown with Optional Accessories



Representative Cowl Insertion Loss - **TS Series** dB(A)



Dimensions in Inches/Millimeters, Weight in Pounds/Kilograms

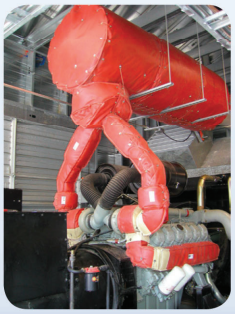
Part No.	A inch / mm	B inch / mm	C inch / mm	D inch / mm	E inch / mm	F inch / mm	G inch / mm	H inch / mm	K inch / mm	Weight pounds / kg
TS15TLS000	1.50 / 38	1.50 / 38	5.24 / 133	2.50 / 64	4.34 / 110	2.07 / 53	7.18/ 182	8.68 / 220	.50 / 13	11 / 5
TS20TLS000	2.00 / 51	2.00 / 51	7.24 / 184	3.50 / 89	4.59 / 117	2.07 / 53	7.18 / 182	9.18 / 223	.50 / 13	15 / 7
TS25TLS000	2.50 / 64	2.50 / 64	8.24 / 209	3.50 / 89	5.66 / 144	2.07 / 53	8.81 / 224	11.31 / 287	.50 / 13	20 / 9
TS30TLS000	3.00 / 76	3.00 / 76	9.24 / 235	5.25 / 133	7.41 / 188	2.07/ 53	11.81 / 300	14.81 / 376	.75 / 19	32 / 15
TS35TLS000	3.50 / 89	3.50 / 89	11.49 / 292	5.25 / 133	7.66 / 195	2.26 / 57	11.81 / 300	15.31 / 389	.75 / 19	38 / 18
TS40TLS000	4.00 / 102	4.00 / 102	15.49 / 393	5.25 / 133	7.91 / 201	2.35 / 60	11.81 / 300	15.81 / 402	.75 / 19	47 / 22
TS45TLS000	4.50 / 114	4.50 / 114	12.49 / 317	5.00 / 127	10.28 / 261	2.57 / 65	16.06 / 408	20.56 / 522	1.00 / 25	66 / 30
TS50TLS000	5.00 / 127	5.00 / 127	16.49 / 419	5.00 / 127	10.53 / 267	2.57 / 65	16.06 / 408	21.06 / 535	1.00 / 25	74 / 34
TS60TLS000	6.00 / 152	6.00 / 152	22.49 / 571	5.00 / 127	11.03 / 280	2.57 / 65	16.06 / 408	22.06 / 580	1.00 / 25	94 / 43
TS70TLS000	8.00 / 203	8.00 / 203	15.35/ 390	6.55 / 166	15.00 / 381	3.97 / 101	22.00 / 559	30.00 / 762	1.45 / 37	105 / 48
TS80TLS000	8.00 / 203	8.00 / 203	24.27 / 616	6.55 / 166	15.00 / 381	3.97 / 101	22.00 / 559	30.00 / 762	1.45 / 37	162 / 74
TS100TLS000	10.00 / 254	10.00 / 254	30.08 / 764	6.25 / 159	19.00 / 483	2.62 / 87	28.00 / 711	38.00 / 965	1.75 / 44	268 / 122
TS120TLS000	12.00 / 305	12.00 / 305	36.08 / 916	5.75 / 146	22.50 / 572	3.71 / 94	33.00 / 838	45.00 / 1143	2.25 / 57	380 / 173

Removable Insulation Blankets
Overview

Insulation Blanket Overview

Removable Insulation Blankets are used to insulate engine parts, exhaust piping and components, and industrial process piping and machinery. In particular, applications which use diesel engines, such as power generation, off highway & on-highway vehicles, and marine often require insulation blankets to manage the heat that these engines generate.





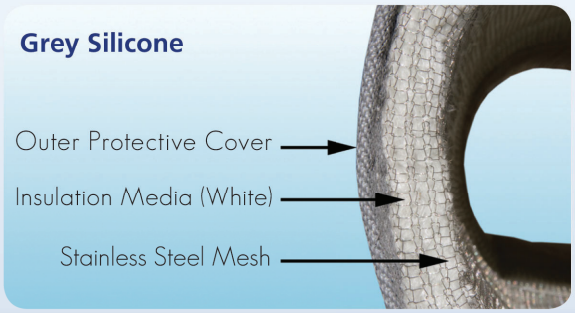
How Are They Constructed?

Removable insulation blankets are typically constructed in 3 layers.[1] The table and photos below illustrate the construction and materials used in a standard removable insulation blanket. Note that for more demanding and unique applications, Firwin offers a wide range of alternative materials and construction. Please contact us for details.

Layers	Material	Temperature Limit	Function
Outer	Silicone Impregnated Fiberglass	Grey: 500° F (260° C) Red: 600° F (316° C)	Protective Cover
	Aluminized Fiberglass	500° F (260° C) Coating 1000° F (538° C) Fabric [2]	
Middle	Fiberglass	Firwin 1200: 1200° F (649° C)	Insulation Media (1 Inch)[3]
	CMS Wool	Firwin 1800: 1800° F (982° C)	
Inner	Stainless Steel Mesh[4]	Firwin 304SS: 1200° F (649° C) Firwin 309SS: 1800° F (982° C)	Contains Insulation Media

[1] Certain applications may require alternative construction methods – i.e. an extra layer may be added, as in the case of sound or fluid barriers.
[2] Aluminum coating may separate from fiberglass fabric at 500°F+, but fabric maintains good strength until 1000°F.
[3] 1 inch insulation suffices for most applications; however, thickness can be varied based on particular application requirements.
[4] The stainless steel inner liner may be replaced by a fiber-containing material in cases where fiber containment is a requirement.

Grey Silicone



Red Silicone



Aluminized Fiberglass



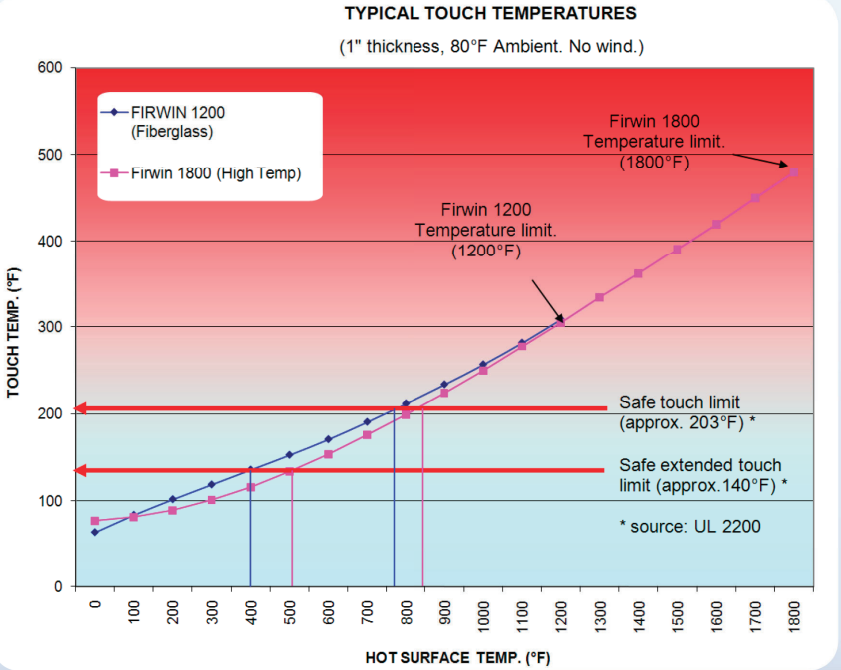
Firwin Corp.
1685 Flint Road, Toronto, ON M3J 2W8
Toll free: 1-877-FIRWIN7 (347 9467)
Canada: (416) 745-9389 - U.S.: (404) 255-4816
Fax: (416) 745-0782
Find Out More at: www.firwin.com - firwin@firwin.com

How Are They Installed?

Removable insulation blankets are wrapped around the part to be insulated (an exhaust pipe in this illustration). The blankets are then fastened in place using lacing wire. Other fastening options, while less versatile, do exist, including snaps, straps, springs, and Velcro.



Heat Performance of Insulation Media



The amount of heat reduction achieved by insulation blankets varies with the type of insulation media and its thickness. In the graph opposite, touch temperatures (i.e. the temperature of the outer protective cover) are given for 1" thick insulation blankets using Firwin 1200 and Firwin 1800 insulation media.



2.5 STARTING SYSTEM

Battery Charger Data Sheet

MicroGenius Battery Charger

BENEFITS AND FEATURES

Designed for mission-critical applications, the MicroGenius® battery charger packs advanced technology charging into a small, lightweight, and rainproof package. MicroGenius® is the only charger that delivers high-performance charging while prolonging useful life of batteries and significantly reducing risk of sudden battery failure. Rigorous worst-case analysis design processes and extensive abuse testing ensure reliable operation in adverse environments.



- Dynamic Boost™ Charge safely recharges batteries faster than competing products
- HELIX™ technology increases battery life and cuts risk of sudden battery failure
- Field-selectable 12/24 volt output
- Hardened switchmode powertrain delivers first-class abuse resistance and state-of-the-art energy efficiency
- Small, lightweight, water-resistant, and rugged
- Standard J-1939 and Modbus communications

SPECIFICATIONS

AC Input	MicroGenius 2	MicroGenius S2	MicroGenius S4
VAC, Hz	90-265 VAC, 47-63 Hz When set for 24-volt output, full 15A output of 450W available above 170 VAC input, 12A output current max between 100 VAC and 170 VAC input.	90-265 VAC, 47-63 Hz When set for 24-volt output, full 30A output available above 170 VAC input, 24A output current max between 100 VAC and 170 VAC input.	90-265 VAC, 47-63 Hz When set for 24-volt output, full output available above 170 VAC input, output power reduced by approximately 20% for operation between 100 VAC and 170 VAC input (e.g. 24A for charger rated 30A).
Protection	Supplementary overcurrent protection fuse, transient protected to EN61000-4-5 level 4		
Power factor and efficiency	PF > 0.95 typical; efficiency to 93%; meets CEC Title 20 Efficiency Regulations; standby AC draw < 3W		

A Rolls-Royce solution

SPECIFICATIONS, continued

DC Output	MicroGenius 2	MicroGenius S2	MicroGenius S4
Volts	12V / 24V nominal		
Amps	**MicroGenius 180:** 10A/6A **MicroGenius 300:** 12A/10A	20A	45A
Charging modes	Multi-stage, including float, boost, and commissioning charge modes		
Current limit	Factory set at 100% of rating. Field adjustable w/optional keypad or from PC.[1]		
Charging characteristic	Constant voltage, current limited; patented Dynamic Boost control		
Line and load regulation	±0.5%		
Output ripple	< 30 mVrms with or without battery. Delivers fast-responding, stable, well-filtered DC without battery.		
Battery temperature compensation	Standard. Optional remote battery temperature probe[2]		
Output protection	Current limit, supplementary overcurrent protection fuse, transient protected		
Dead battery charge	Starts into and recharges zero volt battery without user intervention		
Parallel operation	Two or more chargers operate with all modes synchronized for increased current or fault tolerance[3]		

Adjustment and Controls	MicroGenius 2	MicroGenius S2	MicroGenius S4
Charge mode control	Fully automatic patented Dynamic Boost system. Manual boost and battery commissioning available from keypad.		
Adjustments	12 or 24 volt; battery type program; fine voltage setting, alarm setpoints; alarm relay mapping		
Battery type programs	Flooded lead-acid, Ni-Cd, VRLA, ultracapacitor, lithium[4]		
Field voltage adjustment	Three methods: jumper pins, from front panel keypad (requires that digit 12 of the model number be F), or from PC[1]	Two methods: from front panel keypad or from PC[1]	

Status Display	MicroGenius 2	MicroGenius S2	MicroGenius S4
LEDs	Two multi-color front panel status LEDs		
Metering and status display	Voltmeter accurate to +2%; ammeter to +5%. 20-character display of status and alarm messages.		

Alarms	MicroGenius 2	MicroGenius S2	MicroGenius S4
Alarms	Factory set and field reconfigurable. Standard genset configuration includes summary, AC fail, charger fail, high DC volts, low DC volts, low cranking volts.		
Alarms: Form C contacts	**MicroGenius 180:** N/A **MicroGenius 300:** Two Form C contacts, each rated 30V, 2A resistive, assignable. Standard configuration includes summary, AC fail, charger fail, high DC volts, low DC volts and discharging battery.	Five Form C contacts, each rated 30V, 2A resistive, assignable. Standard configuration includes summary, AC fail, charger fail, high DC volts, low DC volts and discharging battery.	

SPECIFICATIONS, continued

Networking	MicroGenius 2	MicroGenius S2	MicroGenius S4
J-1939 communications	CAN 2.0 extended ID on RJ-45 port		
Modbus communications	Modbus RS-485 on RJ-45 port or Modbus TCP/IP on RJ-45 port.		Uses only Modbus TCP/IP. Do not use Modbus RS-485 for serial port communication.
SENSbus	Proprietary bus for connection of paralleled chargers and SENS accessories		
Environmental	**MicroGenius 2**	**MicroGenius S2**	**MicroGenius S4**
Operating temp[5] (convection cooled)	-40 °C to +70 °C (-40 °F to +158 °F)		
	MicroGenius 180: Meets full specification from -40 °C to +60 °C (-40 °F to +140 °F) **MicroGenius 300:** Meets full specification from -40 °C to +50 °C (-40 °F to +122 °F)	Meets full specification from -40 °C to +40 °C (-40 °F to +104 °F)	
Humidity	5% to 95%, non-condensing		
Ingress protection	IP 22; NEMA 3R; UL Listed "Rainproof"	IP 20; NEMA 1. Optional drip shield for IP 22/NEMA 3R rating.	
Vibration	Swept Sine (EN60068-2-6); 4G, 18-500 Hz, 3 axes. Random: 20-500 Hz, 0.01G2/Hz		
Shock	EN 60068-2-27 (15G)		
Electrical transient	ANSI/IEEE C62.41 and EN 61000-4-12 on power terminals		
Abuse Protection	**MicroGenius 2**	**MicroGenius S2**	**MicroGenius S4**
Reverse polarity	Charger self-protects without fuse clearing. Indication via LED and optional LCD.	Charger self-protects without fuse clearing. Indication via LED and LCD.	Charger self-protects without output protective device clearing. Indication via LED and LCD.
Wrong voltage battery	Charger-battery voltage mismatch shuts down charger. Indication via LED and LCD		
Overvoltage shutdown	Selective: Shutdown only operates if charger causes the overvoltage condition		
Overtemp protection	Gradual output power reduction if heatsink temperature becomes excessive		
Regulatory Compliance	**MicroGenius 2**	**MicroGenius S2**	**MicroGenius S4**
North America	C-UL Listed for US and Canada: UL 1236 categories BBGQ, BBHH, BBJY and QWIR[6], CSA 22.2, No. 107.2. Certified to UL 1236 supplements SB (marine), SC (fire pump) and SE (emergency generator)		
	NFPA-70, NFPA-110[7] **Note:** X00A42500005 meets NFPA-70 only.		
	FCC Part 15, Class B	FCC Part 15, Class A	
	Seismic: Rigid and non-structure wall mount; max SDS of 2.5G. IBC 2000-2015, Calif. BC 2007-2016		
	American Bureau of Shipping, type approved		
European Union (CE)	EMC: 2014/30/EU (EN 61000-6-2 and EN 61000-6-4)		
	LVD: 2014/35/EU (EN 60335-1 and EN 60335-2-29)		
	RoHS 2: 2011/65/EU (EN 50581)		

SPECIFICATIONS, continued

Construction	MicroGenius 2	MicroGenius S2	MicroGenius S4
Housing/Configuration	Die-cast aluminum heatsink base with stainless steel covers and fasteners	Aluminum with powder coated finish	
Connections	AC and DC terminal blocks: 20 to 10 AWG. J-1939 and Modbus-485: RJ-45. Form C alarms: 28 to 16 AWG	AC and DC terminal blocks: 20 to 2 AWG. J-1939 and Modbus: RJ-45. Form C alarms: 28 to 16 AWG	AC and DC terminal blocks: 14 AWG to 2/0. AC and DC breakers, <50A (optional): 14 to 2 AWG. AC and DC breakers, ≥50A (optional): 12 AWG to 2/0. J-1939 and Modbus: RJ-45. Form C alarms: 28 to 16 AWG

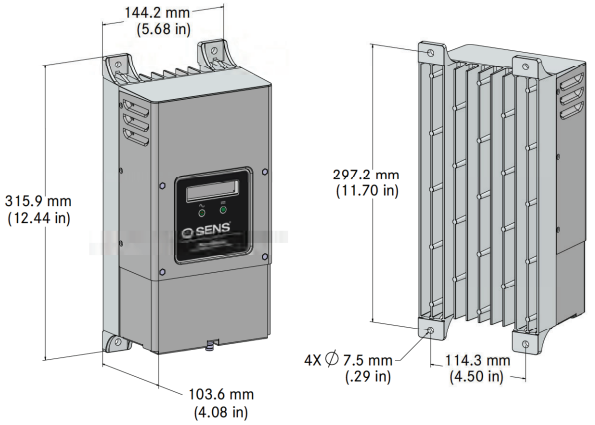
[1] Requires optional computer-to-charger adapter. To order, contact ***mtu*** Parts Department.
[2] Remote battery temp sensor is optional. To order, contact ***mtu*** Parts Department.
[3] Requires standard RJ-45 network cable to connect paralleling bus. To order, contact ***mtu*** Parts Department.
[4] Contact factory to determine compatibility with the battery management system (BMS) of your lithium battery.
[5] At 65 **°C (149 °F)** and above, the LCD display may be unreadable and display life will be reduced.
[6] Except 180 W unit in 24 V configuration, which is not listed to QWIR
[7] All chargers equipped with an alarm/display board meet NFPA-110 requirements. For chargers without an alarm/display board to meet NFPA-110, charger performance and alarm data available on the J-1939 port must be annunciated by the generator set control panel.

MICROGENIUS ORDERING INFORMATION

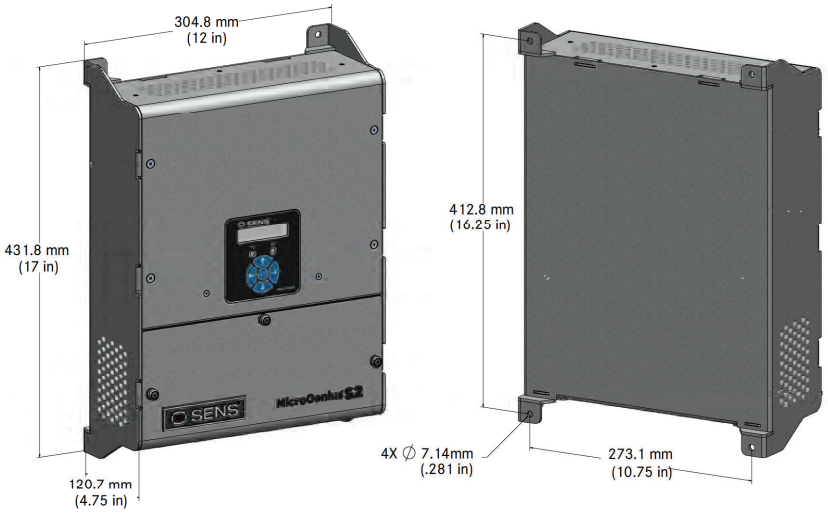
Battery Charger	*mtu* Part #	Output Volts	Output Amps
MicroGenius 2 180*	X00A42500005	12/24 Volts	10/6 Amps
MicroGenius 2 180**	XG3042500013	12 Volts	10 Amps
MicroGenius 2 300**	X54942500005	24 Volts	10 Amps
MicroGenius 2 450**	XG3042500014	24 Volts	15 Amps
MicroGenius S2	X54942500003	12/24 Volts	20 Amps
MicroGenius S4	X54942500002	12/24 Volts	45 Amps

*Meets NFPA-70 only.
Includes ***mtu*-specific programming

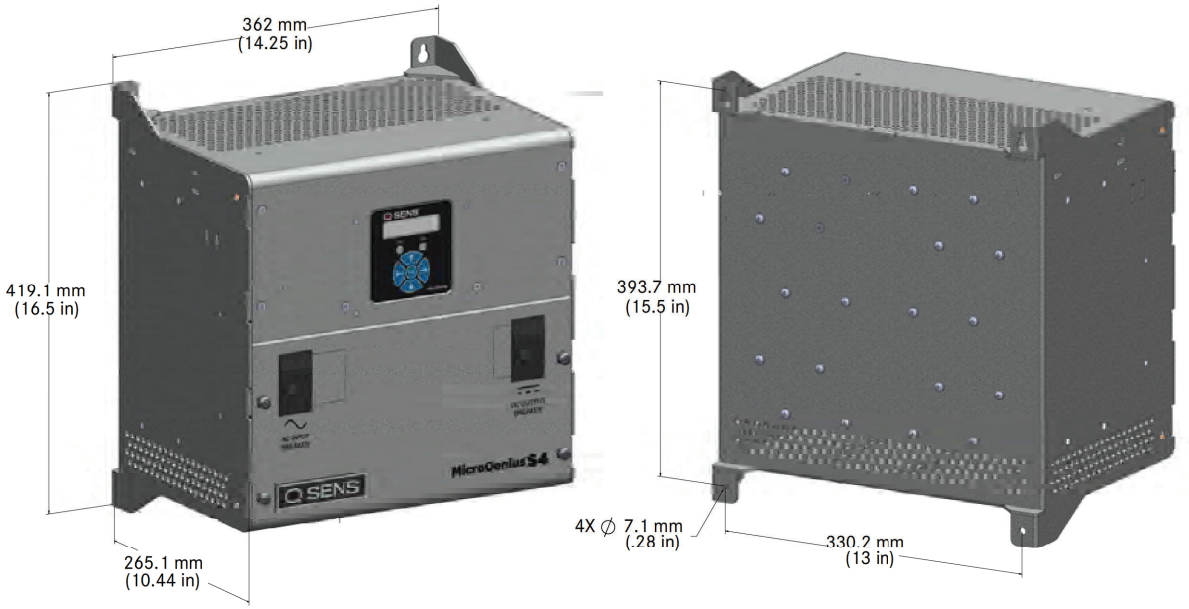
DIAGRAMS AND DIMENSIONS



MicroGenius 2 Dimensions



MicroGenius S2 Dimensions



MicroGenius S4 Dimensions

Subject to change. | WT00038096 | 2021-03

GENUINE DETROIT DIESEL MAINTENANCE FREE STARTING BATTERIES

Reliable starting power for any commercial service vehicle. Heavy-duty construction reduces damaging effect of vibration for long service life.



Genuine Detroit Diesel Maintenance-Free Starting Batteries assure quick, reliable starting power for any commercial service vehicle. Anchorlocked elements, radial grids and tight-pack, heavy-duty construction significantly reduce the damaging effects of vibration, resulting in maximum power-per-pound and long service life.

Genuine Detroit Diesel Starting Batteries are completely maintenance-free and never need watering, dramatically reducing maintenance costs. And the popular Group 31 size fits most types of commercial equipment for easy replacement. All our batteries pass more than 250 quality checks during manufacture, ensuring superior performance and long life. And Genuine Detroit Diesel Batteries are made in the U.S.A., your assurance of quality!

PERFORMANCE LEVEL								DIMENSIONS INCHES/(mm)		
BCI Group Size	Detroit Diesel Part Number	Footnotes	Cranking Amps @ 32°F	Cold Cranking Amps @ 0°F	Reserve Capacity Mins @ 80°F	Volts	Approx. Wt. Lbs. Wet	L	W	H
MAINTENANCE-FREE STARTING SERVICE										
31	EPM/DD931MF	JLMX	810	650	145	12	51	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD931PMF	JLMS	810	650	145	12	51	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1031MF	JLMX	910	760	170	12	54 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1031PMF	JLMS	910	760	170	12	54 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD31P925	JLMX	1110	925	170	12	56 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1131PMF	JLMS	1110	925	170	12	56 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1131XMF	JLMX	1190	1000	185	12	58	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1131XPMF	JLMS	1190	1000	185	12	58	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1231MF	JLMX~	1260	1125	195	12	61	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD1231PMF	JLMS~	1260	1125	195	12	61	13 (330)	6 3/4 (171)	9 1/2 (241)
FLOODED HEAVY-DUTY MAINTENANCE-FREE DUAL PURPOSE CYCLING/STARTING SERVICE										
31	EPM/DDDP31CS	JLMS§	875	700	180	12	57	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DDDP31PCS	JLMS§	875	700	180	12	57	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD7T31	JLMS§	940	730	190	12	62 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
31	EPM/DD7T31P	JLMS§	940	730	190	12	62 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)
ABSORBED GLASS MAT MAINTENANCE-FREE DUAL PURPOSE CYCLING/STARTING SERVICE										
31	EPM/DD8A31	HX1	**1000	**800	190	12	69	13 (330)	6 3/4 (171)	9 3/8 (238)
31	EPM/DD9A31	HX1	**1150	**925	190	12	68 1/2	13 (330)	6 3/4 (171)	9 1/2 (241)

H – Includes handles
J – Includes lifting ledges
L – Anchor lock elements
M – Flush manifold vented cover
N – Flush manifold vented cover when shipped wet, standard cover when shipped dry or FP
S – SAE "Automotive Type" post
X – 3/8" x 16 stainless steel stud posts

1 – "Non-Spillable" by DOT (Department of Transportation) definition
~ – Deduct 4% from CCA & CA rating to allow for special electrolyte additive
§ – Deduct 15% from CCA and CA rating shown to allow for double insulation (glass mat)
** – Pre-production estimate

California Proposition 65 Warning:
Batteries, battery posts, terminals and related accessories contain lead and lead compounds and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
Wash Hands after handling!

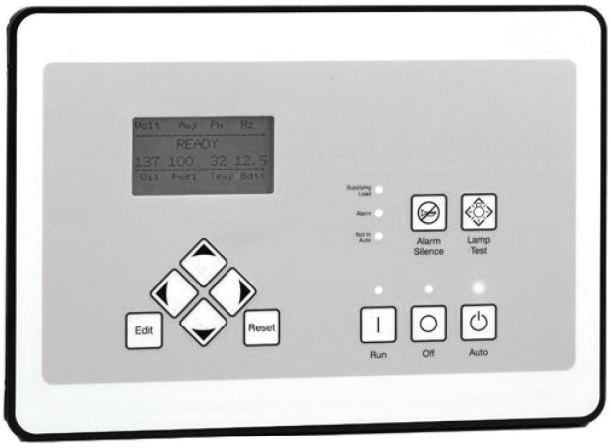
2.6 ELECTRONIC CONTROLS

Digital Generator Set Controller Data Sheet

MGC-2000 Series

The MGC-2000 Series controllers include the following models which are described throughout this document.*

- MGC-2010
- MGC-2020
- MGC-2050



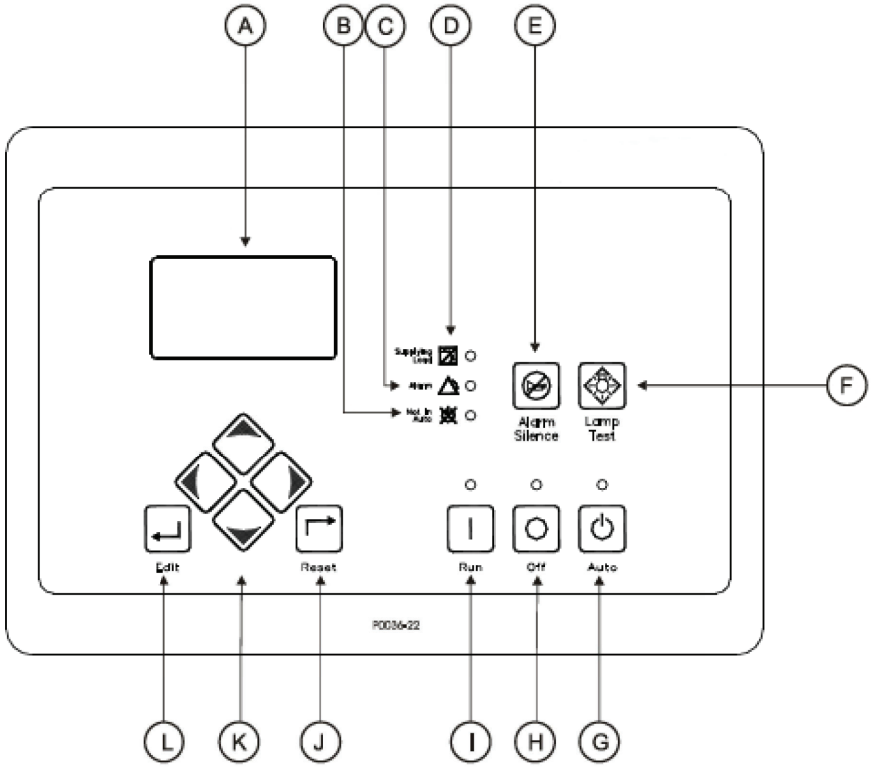
mtu Generator Set Controllers (MGC Series) are highly advanced integrated digital generator set control systems. The MGC-2000 Series is perfectly focused, combining rugged construction and microprocessor technology to offer a product that will hold up to almost any environment and is flexible enough to meet your application's needs. The MGC-2000 Series provides generator set control, transfer switch control, metering, protection, and programmable logic in a simple, easy-to-use, reliable, rugged, and cost effective package.

PRODUCT HIGHLIGHTS

- Three-phase generator metering
- Engine metering
- Generator set control
- Engine and generator protection
- Var sharing over Ethernet
- BESTCOMS*Plus*®
  - Windows®-based software for optional remote operation (Software can be downloaded at www.mtu-solutions.com)
  - Programming and setup software
  - Intuitive and powerful
  - Remote control and monitoring
  - Programmable logic
  - USB communications
- Automatic transfer switch compatible
- Exercise timer
- Suitable for use on rental generator sets with high/low line sensing, single or three phase sensing override, and wye/delta/grounded delta
- SAE J1939 Engine Control Unit (ECU) communications
- Automatic generator configuration detection
- Selection of integrating reset of instantaneous reset characteristics for overcurrent protection
- Multilingual capability
- Remote annunciation to RDP-110
- Extremely rugged, fully potted design
- 16 programmable contact inputs, 12 programmable contact outputs
- ModBus™ communications with RS-485 (Refer to *Configuration Options*.)
- UL recognized, CSA certified, CE approved
- Highly Accelerated Life Tests (HALT) tested
- IP 54 front panel rating with integrated gasket
- NFPA-110 compatible
- Microprocessor based
- Complete system metering
- Expandable to meet customer needs

*Please refer to the last page of this data sheet for available MGC-2000 Series configuration options. The MGC Series Controller Comparison Data Sheet is available as a reference for all MGC Series configuration options.

DIAGRAM



Front Panel Descriptions

A. Liquid Crystal Display
B. Not in Auto Indicator
C. Alarm Indicator
D. Supplying Load Indicator
E. Alarm Silence Pushbutton
F. Lamp Test Pushbutton
G. Auto Pushbutton and Mode Indicator
H. Off Pushbutton and Mode Indicator
I. Run Pushbutton and Mode Indicator
J. Reset Pushbutton
K. Arrow Pushbuttons
L. Edit Pushbutton

FUNCTIONS

Generator set protection

Generator ANSI codes

- Overvoltage (59)
- Overfrequency (81o)
- Reverse power (32)
- Undervoltage (27)
- Underfrequency (81u)
- Loss of excitation (40q)
- Phase imbalance (47)
- Overcurrent (51) (optional)
- Vector shift (78) (optional)
- Rate of change of frequency (ROCOF) (81R) (Refer to *Configuration Options*.)

All generator set protection features are programmable as alarms, pre-alarms, status, or not used.

Alarms (Shutdowns)

- Low oil pressure
- High coolant temperature
- Low coolant level
- Overspeed
- Overcrank
- Coolant temp sender fail (non-ECU engines)
- Oil pressure sender fail (non-ecu engines)
- Emergency stop
- Critical low fuel level (Refer to *Configuration Options*.)

FUNCTIONS, continued:

Generator Set Protection, continued:

Pre-alarms (Warnings)
- Low oil pressure
- High coolant temperature
- Low coolant temperature
- Battery overvoltage
- Weak battery voltage
- Aem comms failure
- Breaker open failure
- Cem comms failure
- Generator reverse rotation
- Engine kw overload (three levels)
- Loss of sensing
- Checksum failure
- Ecu comms fail
- Low fuel level
- High fuel level
- Active diagnostic trouble codes (DTC)
- Breaker close failure
- Low battery voltage

All alarms and pre-alarms can be enabled or disabled via the BESTCOMS*Plus*® PC software or the front panel. Additional custom alarms and pre-alarms are available upon request.

Generator set metering
- Generator parameters include voltage, current, real power (watts), apparent power (VA), and power factor (PF).
- Engine parameters include oil pressure, coolant temperature, battery voltage, speed, fuel level, engine load, coolant level (from ECU), ECU specific parameters, and run-time statistics.

Engine control
- Cranking control: cycle or continuous (quantity and duration fully programmable)
- Engine cooldown: smart cooldown function saves fuel and engine life
- Successful start counter: counts and records successful engine starts
- Timers:
  - Engine cooldown timer
  - Engine maintenance timer
  - Pre-alarm time delays for weak/low battery voltage
  - Alarm time delay for overspeed
  - Alarm time delay for sender failure
  - Arming time delays after crank disconnect:
    - Low oil pressure
    - High coolant temperature
  - Pre-crank delay
  - Continuous or cycle cranking time delay
  - Programmable logic timers

Event recording
The MGC-2000 Series has an event recorder that provides a record of alarms, pre-alarms, engine starts, engine runtime loaded, engine runtime unloaded, last run date, and many other events that are all date and time stamped to help the user determine the cause and effect of issues related to the generator set. Contains 30 event records each retaining up to 99 occurrences in memory. Time, date, and engine hour detail is available for the most current 30 occurrences within each event record.

Transfer switch control (Mains failure)
The MGC-2000 Series has the ability to detect a mains failure via a single- or three-phase bus input. A mains failure is established when any one of the following conditions are met:

- Any phase of bus voltage falls below the dead bus threshold
- Any phase of bus voltage is unstable due to overvoltage or undervoltage
- Any phase of bus voltage is unstable due to overfrequency or underfrequency

When conditions are met, the MGC-2000 Series will start the generator set and, when ready, will send generator and mains breaker commands to apply power to the load from the generator set. The MGC-2000 Series implements open or closed breaker transitions to and from the mains. When the mains returns and is considered stable, the MGC-2000 Series will transfer the load back to the mains and stop the engine.

ModBus™ RTU
When utilized, the user can send and receive information from the MGC-2000 Series via the RS-485 communications port and ModBus™ RTU protocol. This feature allows the MGC-2000 Series controlled generator set to be fully integrated into the building management system. Please see the *MGC-2000 Series Controller Manual* for the ModBus™ register list.

Programmable logic
The MGC-2000 Series offers a very powerful, yet easy-to-use, programmable logic scheme, BESTlogic™*Plus*, for custom programming of the various inputs, outputs, alarms, and pre-alarms. It allows these elements to be integrated into a complete logic scheme so that the user can meet even the most complex specification. The programmable logic control includes the selection of logic gates and timers, with drag-and-drop technology to make it fast and simple.

FUNCTIONS, continued:

Remote display panel annunciation
The MGC-2000 Series can communicate to a remote display panel, Model RDP-110. This requires only two wires to annunciate all of the alarms and pre-alarms required by NFPA-110 Level I and II. External power is required.

External modem interface
The MGC-2020 and MGC-2050 controllers include an external modem interface permitting an external modem to be connected to the MGC controller via RS-232. A dial-out modem enables remote control, monitoring, and setting of the MGC-2000 Series. When an alarm or pre-alarm condition occurs, the MGC-2000 Series can dial up to four telephone numbers in sequence until an answer is received and the condition is annunciated.

Note: Only an external modem interface is provided. The external modem must be provided by a third party. The external modem is only available on the MGC-2020 and MGC-2050 controller configurations of the MGC-2000 Series.

SAE J1939 communications
SAE J1939 CANBus communications allows the MGC-2000 Series to communicate with the ECU to gather critical engine information like oil pressure, engine coolant temperature, RPM, battery voltage, and much more. By utilizing the ECU, the addition of analog engine senders is no longer required. This can save substantial money for the installer. It also eliminates any errors or discrepancies between the ECU data and the data displayed on the MGC-2000 Series that may be present due to analog sender inaccuracies or incompatibility. An additional benefit is access to the ECU's diagnostic troubleshooting codes (DTCs). The DTCs provide information about the engine's operating conditions and communicates these, via SAE J1939, to the MGC-2000 Series, eliminating the need for hand-held service tools to diagnose simple engine issues.

SPECIFICATIONS

Operating power
- Nominal: 12 or 24 VDC
- Range: 6 to 32 VDC
- Power consumption:
  - Sleep Mode: 5W with all relays non-energized
  - Normal operational mode: 7.9W - run mode, LCD heater off, six relays energized
- Battery ride-through: withstands cranking ride-through down to 0 V for 50 ms, starting at 10 VDC.

Current sensing (5 A CT inputs)
- Continuous rating: 0.1 to 5.0 Aac
- One second rating: 10 Aac
- Burden: 1 VA

Voltage sensing
- Range: 12 to 576 V rms, line-to-line
- Frequency range: 10 to 72 Hz
- Burden: 1 VA
- One second rating: 720 V rms

Input contacts
Contact sensing inputs include one emergency stop input and 16 programmable inputs. The emergency stop input accepts normally closed, dry contacts. The remote emergency stop is limited to 75 ft. standard. Extended runs are available with optional relay. All programmable inputs accept normally open, dry contacts. The factory utilizes up to three of these inputs.

Engine System Inputs
- Fuel Level Sensing Resistance Range: 0 to 250 Ω nominal
- Coolant Temperature Sensing Resistance Range: 10 to 2,750 Ω nominal
- Oil Pressure Sensing Resistance Range: 0 to 250 Ω nominal
- Engine Speed Sensing:
  - Magnetic Pickup or CANBus
    - Magnetic Pickup Voltage Range: 3 to 35 V peak (6 to 70 V peak to peak)
    - Magnetic Pickup Frequency Range: 32 to 10,000 Hz
  - Generator Frequency (alternate or redundant)
    - Voltage Range: 12 to 576 V rms

Output contacts
- (15) total programmable outputs: (3) 30 A @ 28 VDC and (12) 2 A @ 30 VDC
- The factory utilizes the following on each generator set which can be reprogrammed as needed:
  - (3) 30 A @ 28 VDC for pre-start, start, and run
  - (12) 2 A @ 30 VDC for general purpose

SPECIFICATIONS, continued:

Metering

Generator and bus voltage (rms)
- Metering range: 0 to 576 VAC (direct measurement); up to 9,999 VAC (with appropriate voltage transformer)
- Accuracy: ±1% of programmed rated voltage of ±2 VAC (subject to accuracy of voltage transformer when used)

Generator current (rms)
- Generator current is measured at the secondary windings of 5 A CTs.
- Metering range: 0 to 5,000 Aac
- CT primary range: 1 to 5,000 Aac, in primary increments of 1 Aac
- Accuracy: ±1% of programmed rated current or ±2 Aac (subject to accuracy of CTs)

Generator and bus frequency
- Metering range: 10 to 72 Hz
- Accuracy: ±0.25% or 0.05 Hz

Apparent power
- Indicates total kVA and individual line kVA (four-wire, line-to-neutral or three-wire, line-to-line).
- Accuracy: ±3% or the full-scale indication or ±2 kVA

Power factor
- metering range: 0.2 leading to 0.2 lagging
- Accuracy: ±0.02

Real power
- Indicates total kW and individual line kW (four-wire, line-to-neutral or three-wire, line-to-line)
- Accuracy: ±3% of the full-scale indication or ±2 kW

Oil pressure
- Metering range: 0 to 150 psi or 0 to 1,034 kPa
- Accuracy: ±3% of actual indication or ±2 psi or ±12 kPa (subject to accuracy of sender)

Coolant temperature
- Metering range: 0 °C to 204 °C (32 °F to 410 °F)
- Accuracy: ±3% of actual indication or ±2° (subject to accuracy of sender)

Fuel level
- Metering range: 0 to 100%
- Accuracy: ±2% (subject to accuracy of sender)

Battery voltage
- Metering range: 6 to 32 VDC
- Accuracy: ±3% of actual indication or ±0.2 VDC

Engine RPM
- Metering range: 0 to 4,500 rpm
- Accuracy: ±2% of actual indication or ±2 rpm

Engine run time
- Engine run time is retained in non-volatile memory.
- Metering range: 0 to 99,999 h; update interval: 6 min
- Accuracy: ±1% of actual indication or ±12 min

Maintenance timer
- Maintenance timer indicates the time remaining until generator set service is due. Value is retained in non-volatile memory.
- Metering range: 0 to 5,000 h; update interval: 6 min
- Accuracy: ±1% of actual indication or ±12 min

Generator protection functions

Overvoltage (59) and undervoltage (27)
- Pickup range: 70 to 576 VAC
- Activation delay range: 0 to 30 s

Overfrequency (81O) and underfrequency (81U)
- Pickup range: 45 to 66 Hz
- Pickup increment: 0.1 Hz
- Activation delay range: 0 to 30 s

Reverse power (32)
- Pickup range: -50 to 5%
- Pickup increment: 0.1%
- Hysteresis range: 1 to 10%
- Hysteresis increment: 0.1%
- Activation delay range: 0 to 30 s
- Activation delay increment: 0.1 S

Loss of excitation (40Q)
- Pickup range: -150 to 0%
- Pickup increment: 0.1%
- Hysteresis range: 1 to 10%
- Hysteresis increment: 0.1%
- Activation delay range: 0 to 30 s
- Activation delay increment: 0.1 S

SPECIFICATIONS, continued:

Generator protection functions, continued:

Phase imbalance (47)
- Pickup range: 5 to 100 VAC
- Pickup increment: 1 VAC
- Activation Delay Range: 0 To 30 S
- Activation Delay Increment: 0.1 S

ROCOF (81R) (optional)
- Pickup range: 0.2 to 10 Hz/s
- Pickup increment: 0.1 Hz/s
- Activation delay range: 0 to 10,000 ms
- Activation delay increment: 1 ms
- Accuracy: 0.2 Hz/s
-

Overcurrent (51)
- Pickup range: 0.18 to 1.18 Aac (1 A current sensing)
- Time dial range: 0

Vector shift (78) (optional)
- Pickup range: 2 to 90°
- Pickup increment: 1°
- Accuracy: ±1°

Environmental
- Temperature
  - Operating: -40 °C to 70 °C (-40 °F to 158 °F)
  - Storage: -40 °C to 85 °C (-40 °F to 185 °F)
- Humidity: IEC 68-2-38
- Salt fog: ASTM B 117-73, IEC 68-2-11 (tested while operational)
- Ingress protection: IEC IP54 for front panel
- Shock: 15 G in three perpendicular planes
- Vibration: 5 to 29 to 5 Hz at 1.5 G peak for 5 min.
  29 to 52 to 29 Hz at 0.036" DECS-A for 2.5 min.
  52 to 500 to 52 Hz at 5 G peak for 7.5 min.
  - Swept over the above ranges for 12 sweeps in each of three mutually perpendicular planes with each 15 minute sweep

Agency approvals
- UL/CSA approvals: "cURus" approved to UL 6200 and CSA C22.2 No.14
- NFPA compliance: complies with NFPA Standard 110, standard for emergency and standby power
- CE marked: complies with applicable EC directives

ADDITIONAL SPECIFICATIONS

Battery backup for real time clock
The MGC-2000 Series provides a real-time clock with an internal backup battery. The battery will maintain timekeeping for approximately 10 years (depending on conditions) after power is removed from the controller. The clock is used by the event recorder and sequence of events functions to time-stamp events, and the exercise timer is used to start and stop the generator set when the exercise feature is utilized.

Breaker management
The MGC-2000 Series is capable of controlling the generator breaker and the mains breaker. The status of the breakers is determined by using BESTlogic™*Plus* programmable logic to set up the GENBRK and MAINSBRK logic blocks. These logic blocks have outputs that can be configured to energize an output contact and control a breaker, as well as inputs for breaker control and status. The MGC-2000 Series will attempt to close a breaker only after verifying that it can be closed. If the breaker cannot be closed, the close request will be ignored. Only one breaker can be closed at a time. Synchronization is required before closing the breaker to a live bus. Closure to a dead bus can be performed after meeting dead bus threshold and timing requirements set by the user.

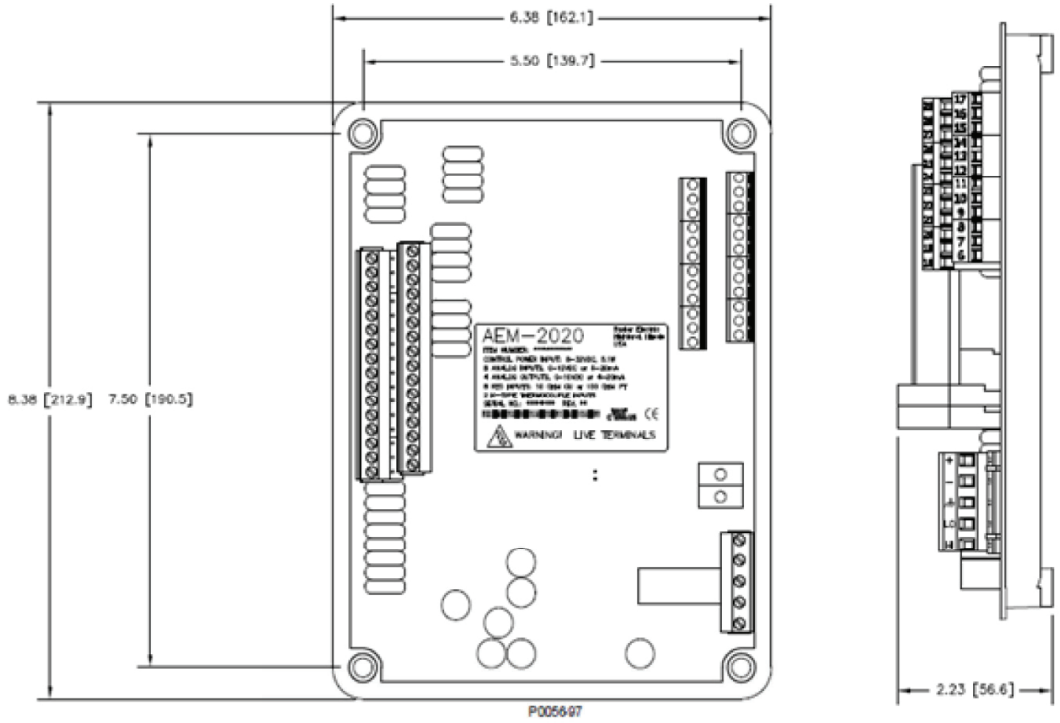
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OPTIONAL ACCESSORIES

Analog Extension Module 2020 (AEM–2020)

The optional AEM-2020 is a remote auxiliary device that provides additional MGC-2000 Series analog inputs and outputs. Its features include:

- **Eight analog inputs:** The AEM-2020 provides eight analog inputs that are user-selectable for 4 to 20 mA or 0 to 10 VDC. Each analog input has under/over thresholds that can be configured as status only, alarm, or pre-alarm. When enabled, an out of range alarm alerts the user of an open or damaged analog input wire. The label text of each analog input is customizable
- **Eight Resistance Temperature Detector (RTD) inputs:** The AEM-2020 provides eight user-configurable RTD inputs for monitoring generator set temperature. Each RTD input can be configured as status only, alarm, or pre-alarm to protect against high or low temperature conditions. When enabled, an out-of-range alarm alerts the user of an open or damaged RTD input wire. The label text of each RTD input is customizable.
- **Two thermocouple inputs:** The AEM-2020 provides two thermocouple inputs for monitoring generator set temperature. Each thermocouple input can be configured as status only, alarm, or pre-alarm to protect against high or low temperature conditions. When enabled, an out-of-range alarm alerts the user of an open or damaged thermocouple input wire. The label text of each thermocouple input is customizable.
- **Four analog outputs:** The AEM-2020 provides four analog outputs that are user-selectable for 4 to 20 mA or 0 to 10 VDC. A wide selection of parameters including oil pressure, fuel level, generator voltage, and bus voltage can be configured as analog outputs. Refer to *Section 4, BESTCOMSPlus® Software* of the *MGC-2000 Series Controller Manual,* for a full list of parameter selections.
- **Communications via CANBus:** A Control Area Network (CAN) is a standard interface that enables communication between the AEM-2020 and the MGC-2000 Series.



Input and Output Terminals

OPTIONAL ACCESSORIES, CEM-2020, continued

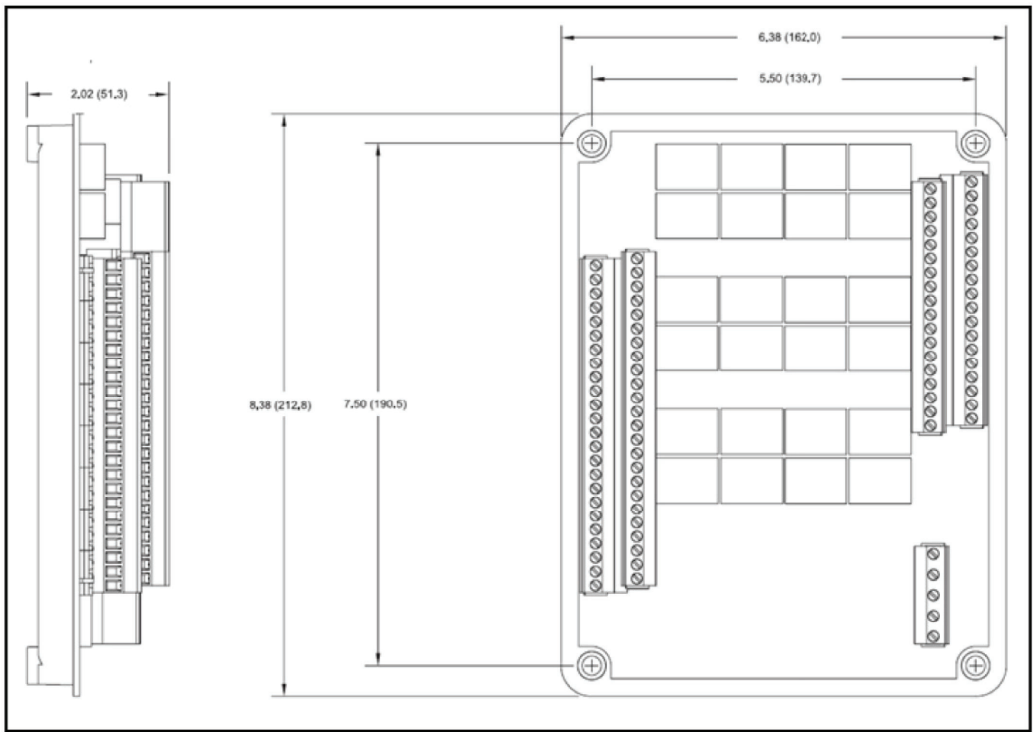
Contact Expansion Module 2020 (CEM-2020)

The CEM-2020 is a remote device that provides additional MGC-2000 Series contact inputs and outputs, giving the user flexibility to use the same model MGC-2000 Series generator set controller for simple or complicated applications that require contact functionality or duplication of contacts for remote annunciation. Its features include:

- **10 Contact Inputs:** The CEM-2020 provides 10 programmable contact inputs with the same functionality as the contact inputs on the MGC-2000 Series.
- **24 Output Contacts:** The CEM-2020 provides 24 Form C programmable output contacts with the same functionality as the output contacts on the MGC-2000 Series. The output ratings of the Form C contacts are:

Output No.	Rating (Cont.)	Additional Information
13–24	1 A @ 30 VDC	This is a gold flash contact for low current circuits.
25–36	4 A @ 30 VDC	

- **Communications via CANBus:** The CEM-2020 communicates to the MGC-2000 Series via SAE J1939 CANBus communications and allows the user to program the functionality of these inputs and outputs in the BESTCOMS*Plus*® software.
- The user can add labels for the inputs and outputs that appear in BESTCOMS*Plus*®, show up on the front panel, and in programmable logic. All the functionality can be assigned to these inputs and outputs as if they were an integrated part of the MGC-2000 Series. The CEM-2020 module has all of the environmental ratings of the MGC-2000 Series, including a model for UL Class1 Div2 applications. The CEM-2020 terminals accept a maximum wire size of 12 AWG, while the chassis ground requires 12 AWG wire. Flexibility is one of the benefits of the MGC-2000 Series, and this add-on module enhances that benefit even further.



CEM-2020 Overall Dimensions

CONFIGURATION OPTIONS

Generator protection	MGC-2010	MGC-2020	MGC-2050
Standard			
Phase Imbalance (47)		✓	✓
Overcurrent (50)			
Overvoltage (59)	✓	✓	✓
Undervoltage (27)	✓	✓	✓
Underfrequency (81U)	✓	✓	✓
Overfrequency (81O)	✓	✓	✓
Reverse Power (32)	✓	✓	✓
Loss of Excitation (40Q)	✓	✓	✓
Enhanced			
Overcurrent (51)		✓	✓
Vector Shift (78)		✓	✓
Rate of Change of Frequency (81R)		✓	✓
Ground Fault			

Inputs	MGC-2010	MGC-2020	MGC-2050
Controller			
Digital	16	16	16
Analog (Dedicated)	3	3	3
Analog	-	-	-
CEM			
Digital	10	10	10
AEM			
Analog	8	8	8
TC	2	2	2
RTD	8	8	8

Outputs	MGC-2010	MGC-2020	MGC-2050
Controller			
Digital Form A, 30 Amp	3	3	3
Digital Form A, 5 Amp	-	-	-
Digital Form A, 2 Amp	12	12	12
Analog	-	-	-
CEM			
Digital Form C, 4 Amp	12	12	12
Digital Form C, 1 Amp	12	12	12
AEM			
Analog	4	4	4
External to Controllers / (CEM)			
Digital Form C, 10 Amp (Interposing Relay)	10	10	10

Communication	MGC-2010	MGC-2020	MGC-2050
ModBus RTU (RS-485)	✓	✓	✓
ModBus TCP-IP			
RDP-110	✓	✓	✓
CANBus	✓	✓	✓
Modem Interface (RS-232)		✓	✓
Ethernet			

Metering	MGC-2010	MGC-2020	MGC-2050
Bus 1 Voltage			
Single Phase	✓	✓	✓
Three Phase	✓	✓	✓
Bus 2 Voltage			
Single Phase			
Three Phase			
Current Transformers			
Generator	3	3	3
Auxiliary	-	-	-

Subject to change. | WT00032340 | 2021-03

SECTION 3

GENERATOR
&
CIRCUIT BREAKER
DATASHET

MAGNAPLUS®

TYPICAL SUBMITTAL DATA

BASE MODEL: 432PSL6246 **Winding:** 1916 **Date:** 12/02/21

Kilowatt ratings at	1800 RPM	60 Hertz		4 Leads	
kW (kVA)	3 Phase	0.8 Power Factor		Dripproof or Open Enclosure	
	CONTINUOUS [1, 2]			STANDBY [1, 2]	
Voltage*	NEMA B / 80 °C	NEMA F / 105 °C	NEMA H / 125 °C	NEMA F / 130 °C	NEMA H / 150 °C
600/346	230 (288)	275 (344)	300 (375)	305 (381)	310 (388)

① Rise by resistance method, Mil Std 705, Method 680.1b. ② Machine rated for Max Ambient of 40 °C, Max Altitude 3300 ft

Submittal Data: 600 Volts*, 305 kW, 381 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase **High Wye CONNECTION**

Mil-Std-705B Method	Description	Value	Units	Mil-Std-705C Method	Description	Value	Units
301.1b	Insulation Resistance	>1.5 Meg	Ohms	505.3b	Overspeed	2250	RPM
302.1a	High Potential Test			507.1c	Phase Sequence CCW-ODE	ABC	
	Main Stator	2200	Volts	508.1c	Voltage Balance, L-L or L-N	0.2%	
	Main Rotor	1500	Volts	601.4a	L-L Harmonic Max - Total (Distortion Factor)	5.0%	
	Exciter Stator	1500	Volts				
	Exciter Rotor	1500	Volts	601.4a	L-L Harmonic Max - Single	3.0%	
				601.1c	Deviation Factor	5.0%	
401.1a	Stator Resistance, Line to Line High Wye Connection	0.02300	Ohms	---	TIF (1960 Weightings)	<50	
				---	THF (IEC, BS & NEMA Weightings)	<2%	
	Rotor Resistance	0.866	Ohms	---	Winding Pitch	2/3	
	Exciter Stator	18.5	Ohms				
	Exciter Rotor	0.116	Ohms				
410.1a	No Load Exciter Field Amps at 600 Volts Line to Line	0.54	A DC	**Additional Prototype Mil-Std Methods are Available on Request.**			
420.1a	Short Circuit Ratio	0.389					
421.1a	Xd Synchronous Reactance	2.883	PU	--	Generator Frame	432	
		2.722	Ohms	--	Type	MagnaPlus	
422.1a	X2 Negative Sequence React.	0.208	PU	--	Insulation	Class H	
		0.196	Ohms	--	Coupling - Single Bearing	Flexible	
423.1a	X0 Zero Sequence Reactance	0.038	PU	--	Amortisseur Windings	Full	
		0.036	Ohms	--	Excitation	Ext. Voltage Regulated, Brushless	
425.1a	X'd Transient Reactance	0.160	PU	--	Voltage Regulator	SE350	
		0.151	Ohms	--	Voltage Regulation	1.00%	
426.1a	X''d Subtransient Reactance	0.139	PU				
		0.131	Ohms				
--	Xq Quadrature Synchronous Reactance	1.458	PU	--	Cooling Air Volume	1020	CFM
		1.377	Ohms	--	Heat rejection rate	1344	Btu's/min
427.1a	T'd Transient Short Circuit Time Constant	0.062	Sec	--	Full load current	366.9	Amps
				--	Minimum Input hp required	440.5	HP
428.1a	T''d Subtransient Short Circuit Time Constant	0.013	Sec	--	Full load torque	1285	Lb-ft
				--	Efficiency at rated load :	92.8%	
430.1a	T'do Transient Open Circuit Time Constant	1.84	Sec				
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.015	Sec	--	Weight	1760	lbs

** Voltages refer to wye (star) connection, unless otherwise specified.*

www.regalrexnord.com/brands/Marathon-Generators

RegalRexnord
Not indicative of legal entity.

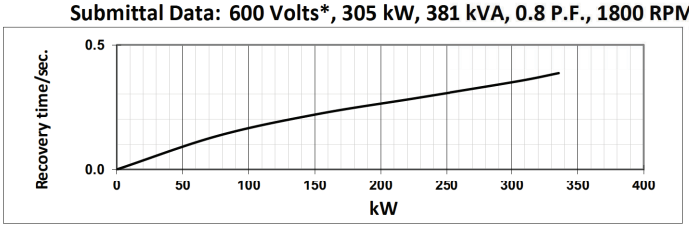
marathon® Generators

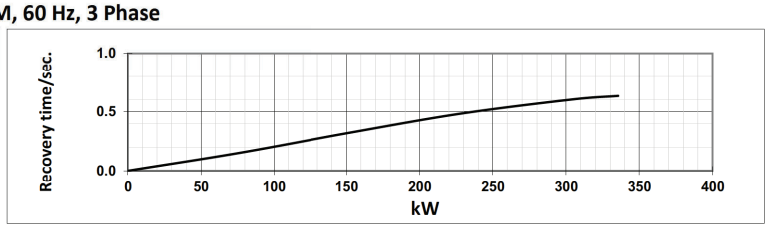
MAGNAPLUS®

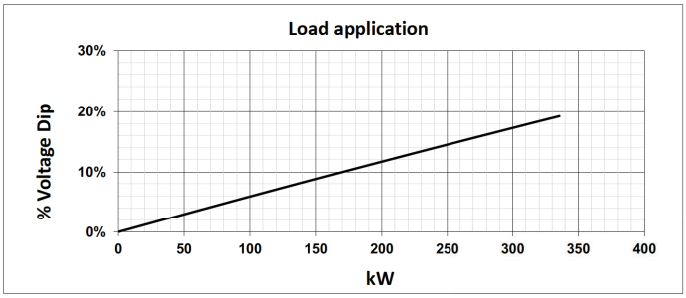
TYPICAL DYNAMIC CHARACTERISTICS

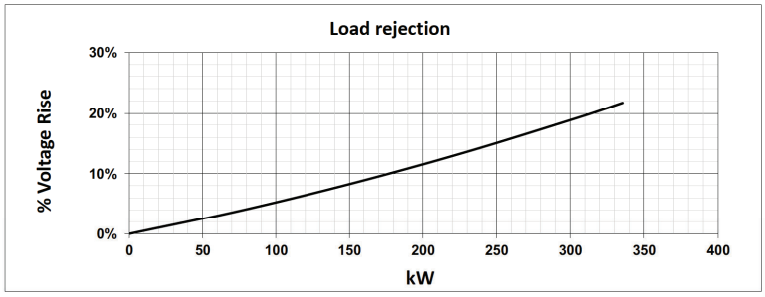
BASE MODEL: 432PSL6246 **Date: 12/02/21**

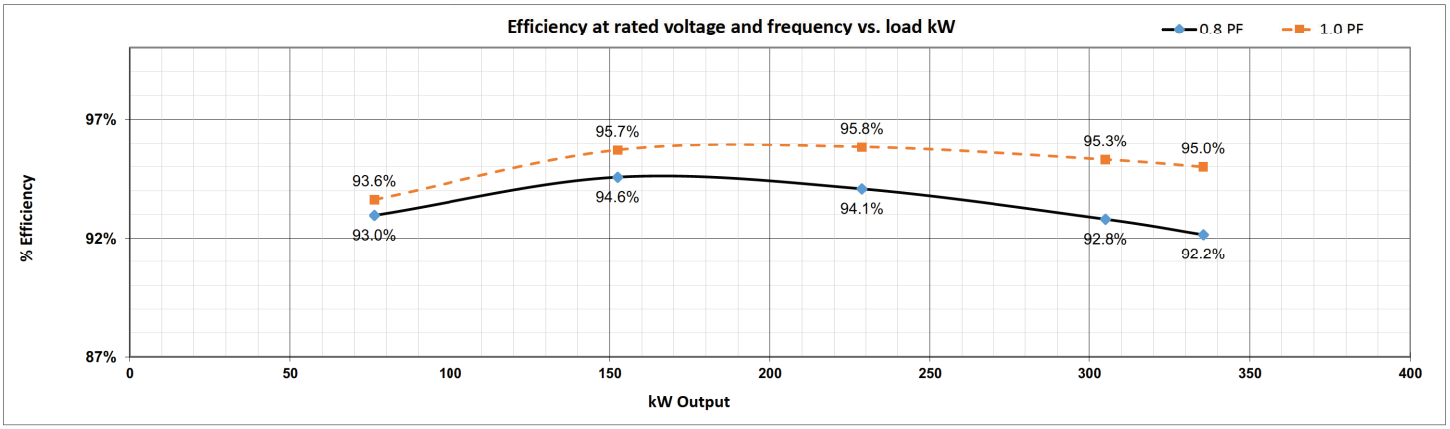
Submittal Data: 600 Volts*, 305 kW, 381 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase

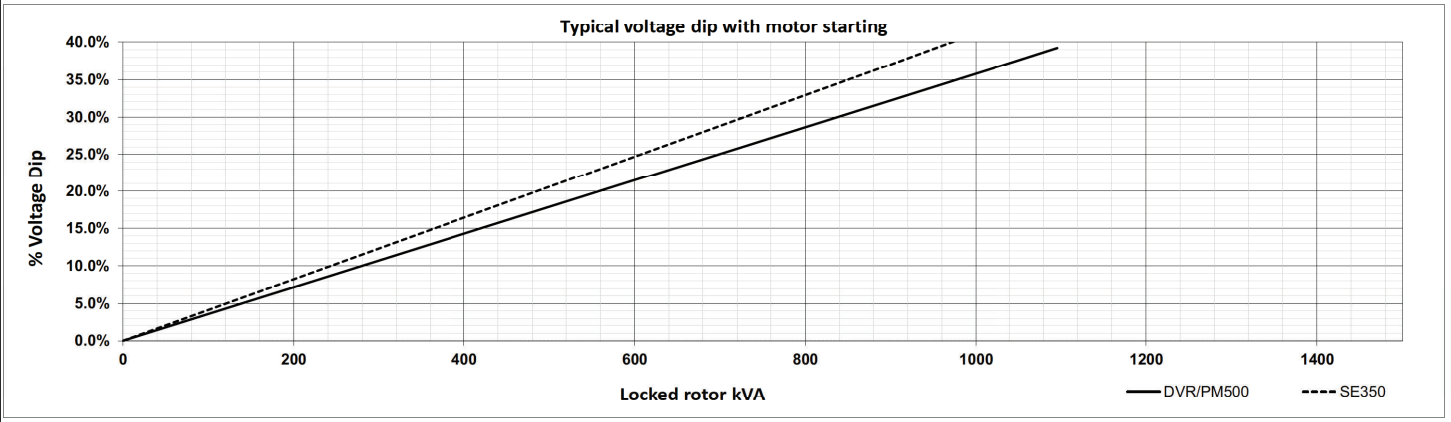












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DECREMENT CURVE

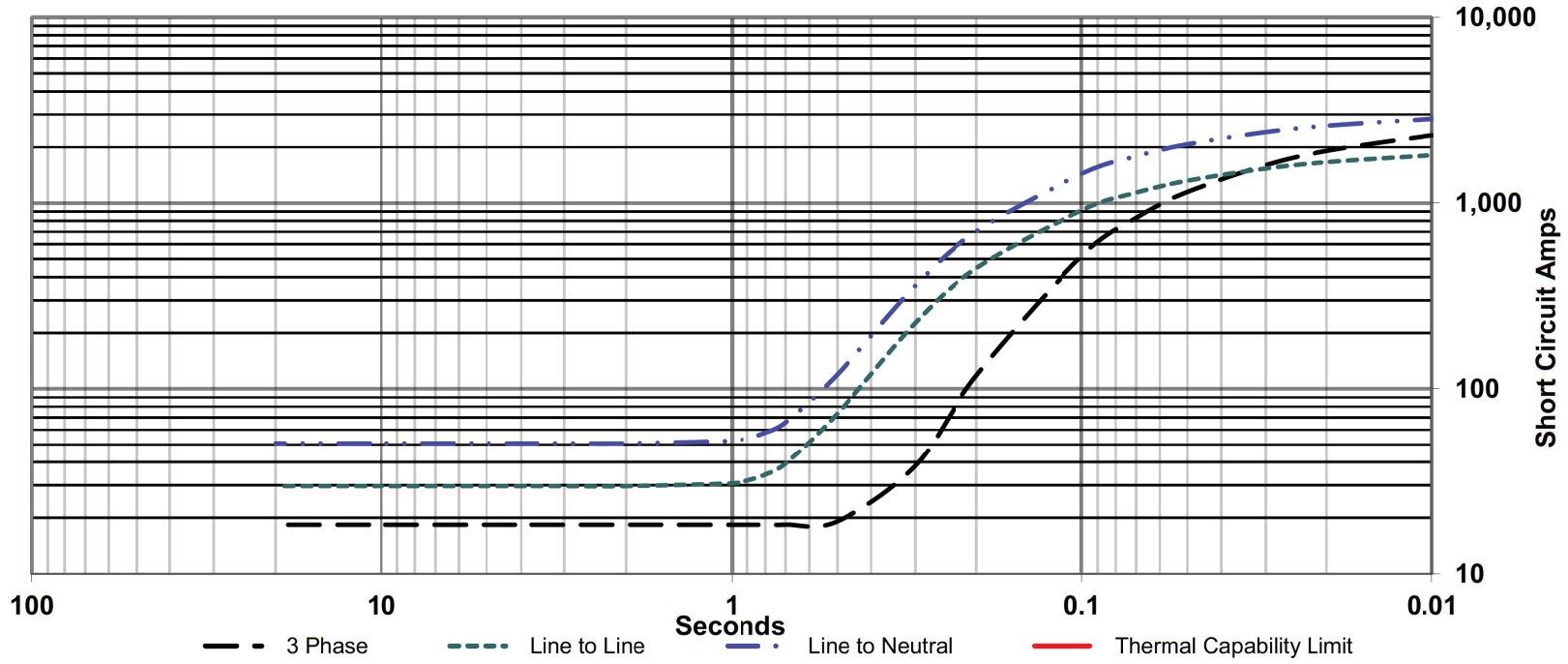
BASE MODEL: 432PSL6246

Submittal Data: 600 Volts*, 305 kW, 381 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase **Date : 12/02/21**

Full Load Current : 366.9 amps
Steady State S.C. Current : 18.35 amps

Max. 3 ph. Symm. S.C. Current : 2640 amps

Symmetrical Component values, Maximum Asymmetrical Values Are 1.732 Times Symmetrical Values



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DECREMENT CURVE

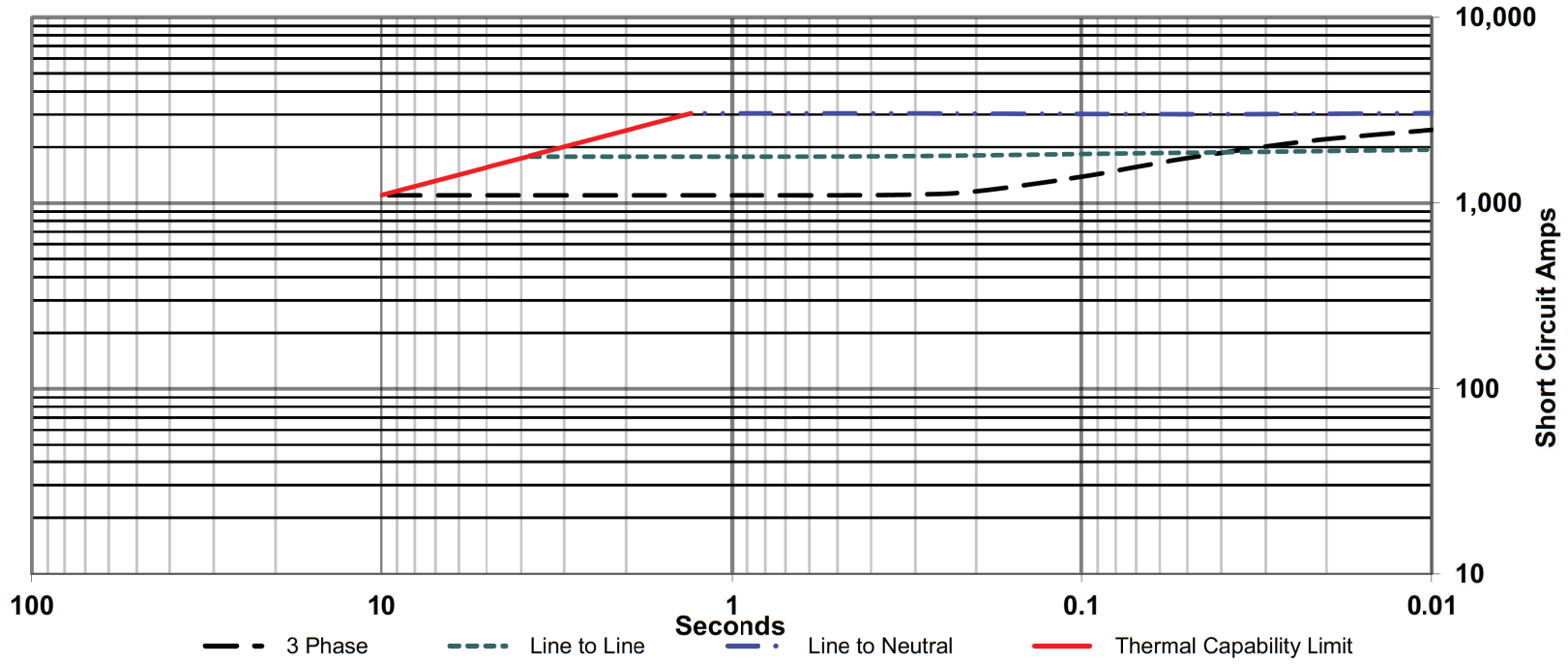
BASE MODEL: 432PSL6246

Submittal Data: 600 Volts*, 305 kW, 381 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase **Date : 12/02/21**

Full Load Current : 366.9 amps
Steady State S.C. Current : 1100.7 amps

Max. 3 ph. Symm. S.C. Current : 2640 amps
INCLUDES EXCITATION SUPPORT (PMG)

Symmetrical Component values, Maximum Asymmetrical Values Are 1.732 Times Symmetrical Values



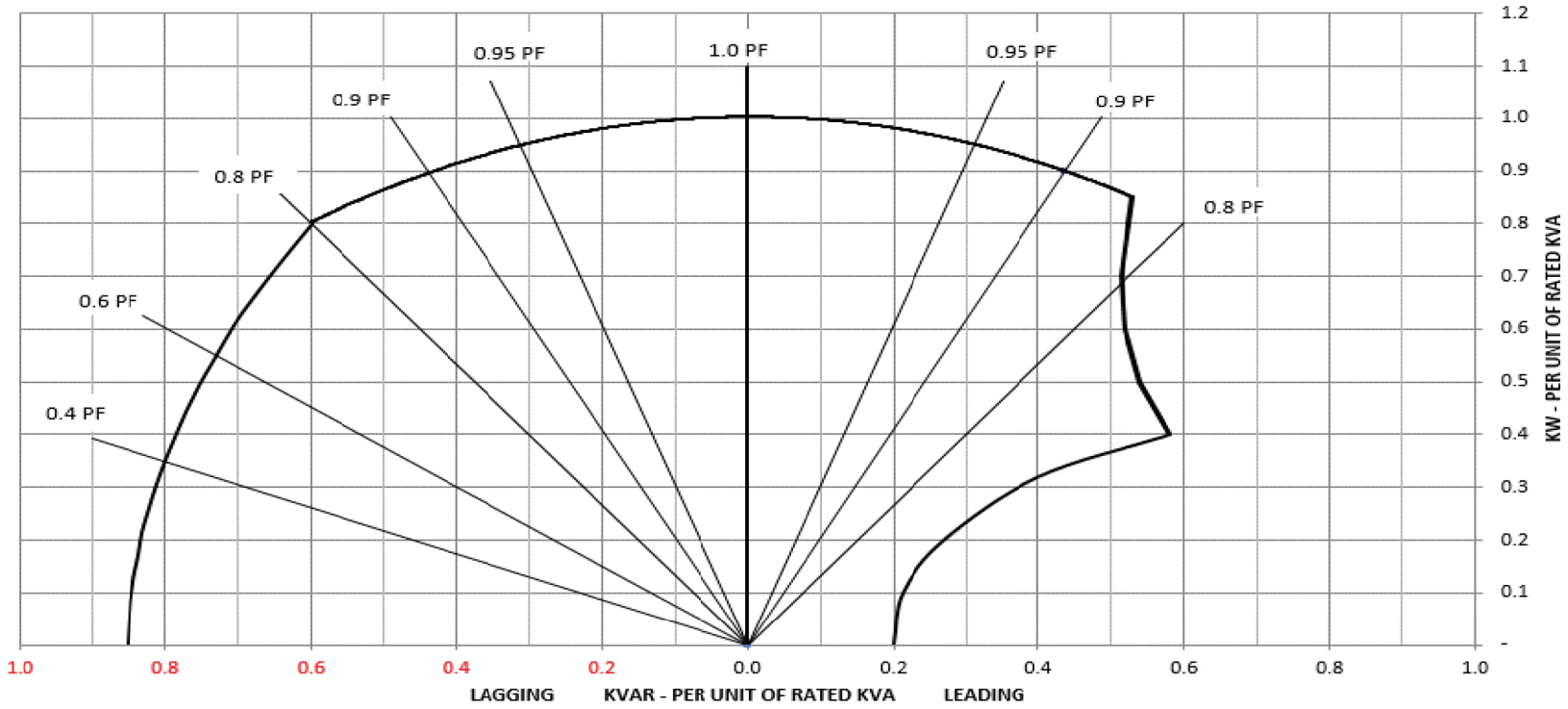
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Typical Reactive Capability Curve

Date : 12/02/21



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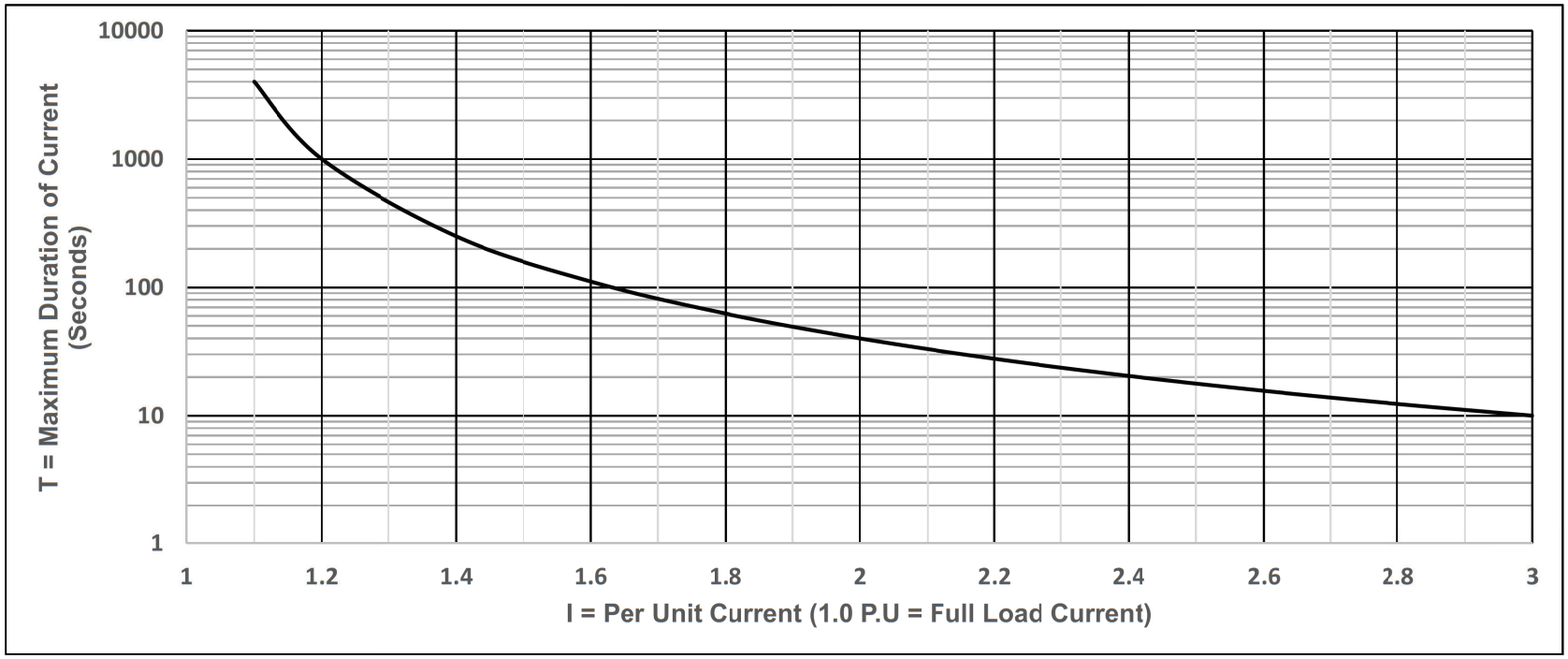
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THERMAL DAMAGE CURVE

Date : 12/02/21

Base is 3.0 P.U. current for 10 seconds from T = 40/(I-1)^2
Windings at operating temperature



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Voltage Regulator Data Sheet

PM300E

The PM300E voltage regulator is an encapsulated electronic voltage regulator which controls the output of a brushless AC generator by regulating the current into the exciter field. Its unique design allows for PMG connectivity for short circuit operation and increased voltage regulation efficiency. The PM300E is a low-cost PMG option on 280, 360, and 430 frame generators.



STANDARD FEATURES

Adjustments for voltage, stability, and V/Hz roll-off

SPECIFICATIONS

mtu part number
SUA106154

Sensing input
Voltage: 190-240 V, 50/60 Hz

Power input
Voltage: 190-240 V, 250/300 Hz

Output power continuous
63 VDC maximum at 3.0 ADC (190 W)

Exciter field DC resistance
15 to 100 ohm

Voltage regulation
< ± 1% (with 4% engine governing)

Voltage buildup
Residual voltage at AVR terminal > 10 VAC

External volts adjustment
± 5% with 1,000 ohm rheostat
± 10% with 2,000 ohm rheostat

Burden
500 VA

EMI suppression
Internal electromagnetic interference filtering

Under frequency protection
60 Hz Operation: 54-61 Hz
50 Hz Operation: 45-51 Hz

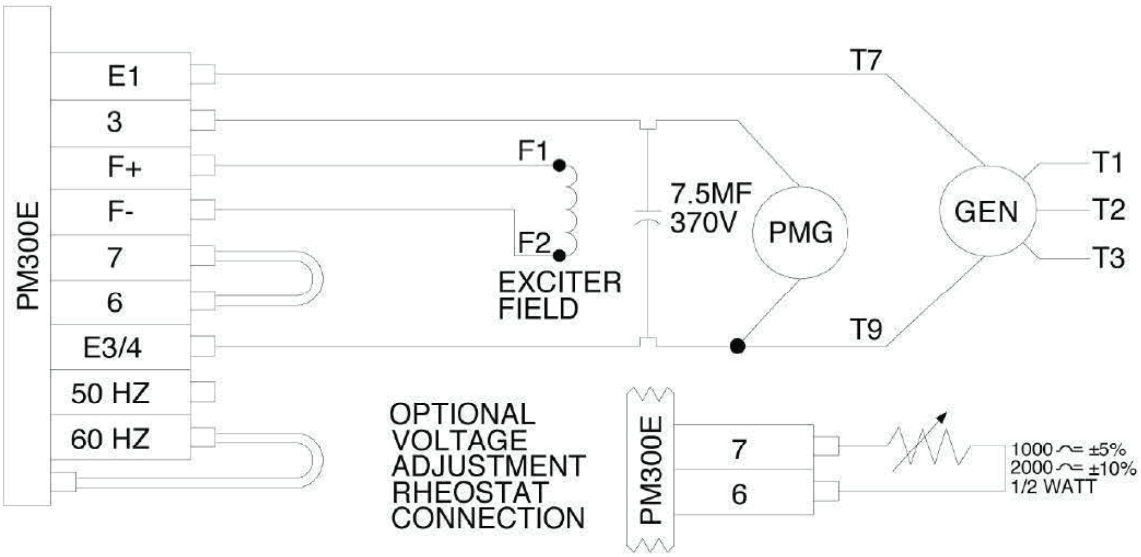
Unit power dissipation
Maximum 8 W

Surrounding air temperature
-40 °C (-40 °F) to 60 °C (140 °F)

Storage temperature
-65 °C (-85 °F) to 85 °C (185 °F)

Weight and dimensions
Weight: ±2% 200 g (7 oz)

Dimensions:	Width:	99.5 mm (3.92 in)
	Height:	67 mm (2.64 in)
	Depth:	47.5 mm (1.87 in)

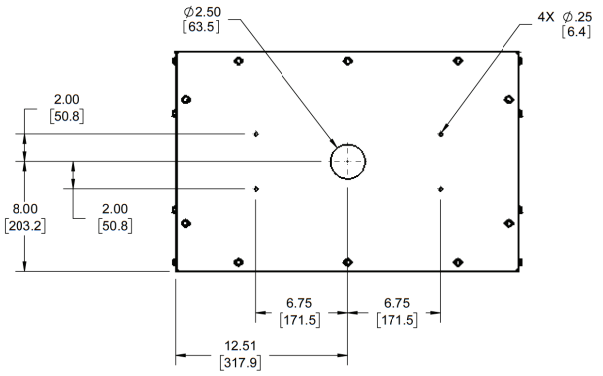


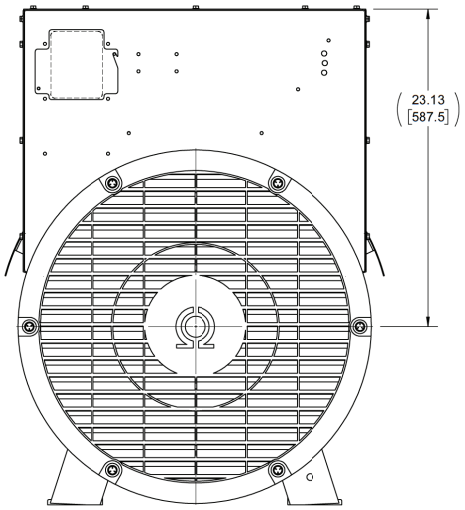
Interconnection Diagram for 416-480 or 208-240 V
WYE Connected Generator

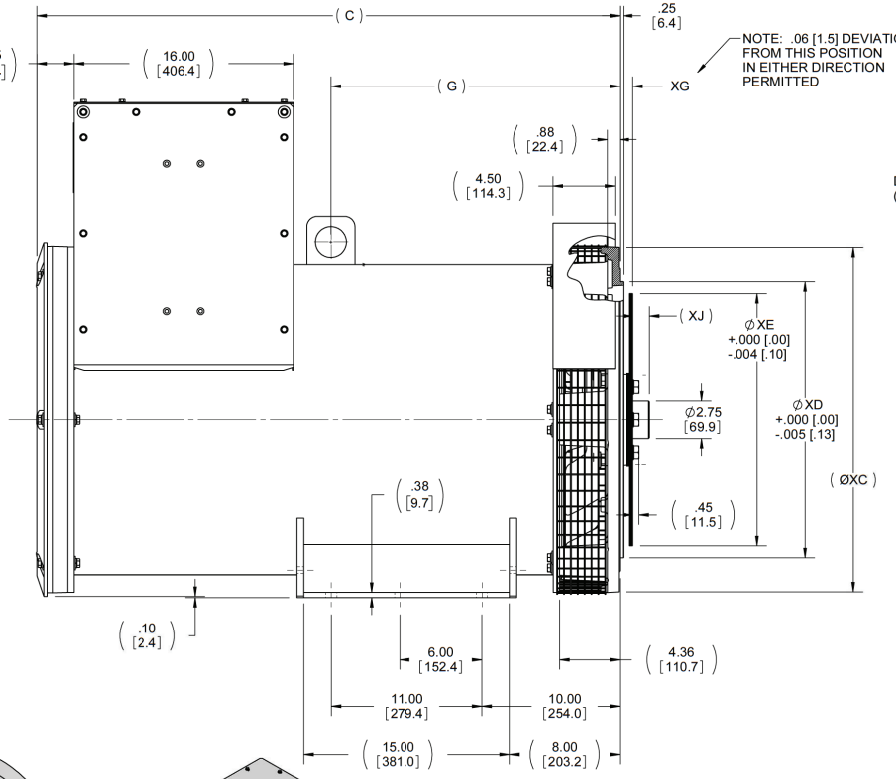
Subject to change. | WT00042125 | 2021-04

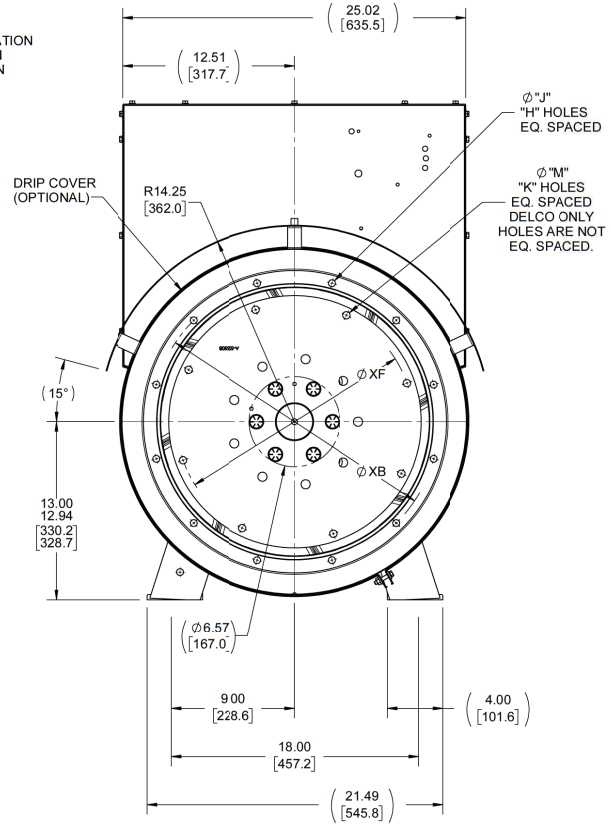
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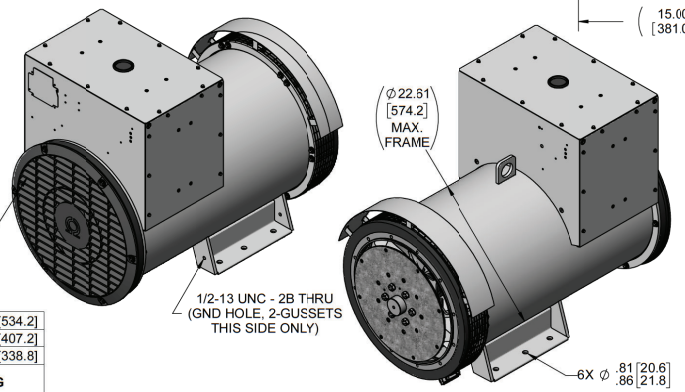
CODE	MOUNTING ARGMT	ADAPTER						DRIVE DISC						
		SAE	H	J	XB	XC	XD	SAE	K	M	XE	XF	XG	XJ
D	10	#3	12	.44 [11.2]	16.88 [428.8]	25.19 [639.8]	16.125 [409.58]	#10	8	41 [10.4]	12.374 [314.23]	11.62 [295.1]	2.12 [53.8]	.06 [1.5]
A	11	#3	12	.44 [11.2]	16.88 [428.8]	25.19 [639.8]	16.125 [409.58]	#11 1/2	8	41 [10.4]	13.874 [352.40]	13.12 [333.2]	1.56 [39.6]	.62 [15.7]
K	20	#2	12	.44 [11.2]	18.38 [466.8]	25.19 [639.8]	17.625 [447.68]	#10	8	41 [10.4]	12.374 [314.23]	11.62 [295.1]	2.12 [53.8]	.06 [1.5]
B	21	#2	12	.44 [11.2]	18.38 [466.8]	25.19 [639.8]	17.625 [447.68]	#11 1/2	8	41 [10.4]	13.874 [352.40]	13.12 [333.2]	1.56 [39.6]	.62 [15.7]
N	23	#2	12	.44 [11.2]	18.38 [466.8]	25.19 [639.8]	17.625 [447.68]	DELCO 15.50	8	66 [16.8]	15.499 [393.68]	13.88 [252.6]	.72 [18.3]	1.46 [37.1]
E	31	#1	12	.50 [12.7]	20.88 [530.4]	25.19 [639.8]	20.125 [511.18]	#11 1/2	8	41 [10.4]	13.874 [352.40]	13.12 [333.2]	1.56 [39.6]	.62 [15.7]
F	32	#1	12	.50 [12.7]	20.88 [530.4]	25.19 [639.8]	20.125 [511.18]	#14	8	53 [13.4]	18.374 [466.70]	17.25 [438.2]	1.00 [25.4]	1.18 [30.0]
H	35	#1	12	.50 [12.7]	20.88 [530.4]	25.19 [639.8]	20.125 [511.18]	DELCO 17.75	8	66 [16.8]	17.754 [450.95]	15.50 [393.7]	.72 [18.3]	1.46 [37.1]
J	42	#1/2	12	.50 [12.7]	24.38 [619.2]	28.00 [711.2]	23.000 [584.20]	#14	8	53 [13.4]	18.374 [466.70]	17.25 [438.2]	1.00 [25.4]	1.18 [30.0]
L	45	#1/2	12	.56 [14.2]	24.38 [619.2]	28.00 [711.2]	23.000 [584.20]	DELCO 17.75	8	66 [16.8]	17.754 [450.95]	15.50 [393.7]	.72 [18.3]	1.46 [37.1]
M	52	#0	16	.56 [14.2]	26.75 [679.4]	28.00 [711.2]	25.500 [647.70]	#14	8	53 [13.4]	18.374 [466.70]	17.25 [438.2]	1.00 [25.4]	1.18 [30.0]
P	54	#0	16	.56 [14.2]	26.75 [679.4]	28.00 [711.2]	25.500 [647.70]	#18	6	66 [16.8]	22.499 [571.48]	21.38 [543.0]	.62 [15.7]	1.56 [39.6]
S	55	#0	16	.56 [14.2]	26.75 [679.4]	28.00 [711.2]	25.500 [647.70]	DELCO 17.75	8	66 [16.8]	17.754 [450.95]	15.50 [393.7]	.72 [18.3]	1.46 [37.1]











358	433	42.39 [1076.7]	21.03 [534.2]
308	432	37.39 [949.7]	16.03 [407.2]
273	431	33.89 [860.8]	13.34 [338.8]
DASH	FRAME	C	G

DRAWING REVISION	REVISION BY	REV DATE/© DATE
F	TM	10-28-2022
REQUEST NUMBER	APPROVED BY	DATE
CR-0012100	CDR	10-28-2022

REQUEST NUMBER DESCRIPTION
MODEL & DIMENSION SCHEME UPDATED

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TOLERANCES (EXCEPT AS NOTED):

DEC.	INCH	mm	ANGLE
X	±0.1	[±.3]	±7' 30"
.XX	±0.03	[±0.8]	
.XXX	±0.005	[±0.13]	
.XXXX	±0.0005	[±0.013]	

REMOVE BURRS & BREAK SHARP EDGES: .003/.015 [.08/.38] X 45°
CORNER FILLETS: R.02 [.5]
MACHINED SURFACES: 200/ 5.1/ INCH / mm
mm DIMENSIONS IN [BRACKETS] ARE FOR REFERENCE ONLY

DRAWN BY	DRS
DATE	12-15-1997
APPROVED BY	LS
DATE	03-13-1998
REFERENCE	SS526022
THIRD ANGLE PROJECTION	

Regal Rexnord — Regal Beloit America, Inc.

DESCRIPTION
OUTLINE
431-433 RDSN -(SMALL BX)

MATERIAL | PROCESS/FINISH

SIZE C | DRAWING NUMBER SS527264 | SHEET 1 OF1

PRODUCT-DETAILS

XT5N 400 Ekip Dip LS/I 400 3p FF UL/CSA

XT5N 400 Ekip Dip LS/I 400 3p FF UL/CSA



General Information

Extended Product Type	XT5N 400 Ekip Dip LS/I 400 3p FF UL/CSA
Product ID	1SDA102449R1
EAN	8056221021807
Catalog Description	XT5N 400 Ekip Dip LS/I 400 3p FF UL/CSA
Long Description	C.BREAKER TMAX XT5N 400 UL/CSA FIXED THREE-POLE WITH FRONT TERMINALS AND SOLID-STATE RELEASE IN AC EKIP DIP LS/I R 400

Ordering

Order Code US and Canada	XT5NU340AEFF000XXX
EAN	8056221021807
Minimum Order Quantity	1 piece
Customs Tariff Number	85362090

Dimensions

Product Net Width	140 mm
Product Net Height	205 mm
Product Net Depth / Length	103.5 mm
Product Net Weight	5.1 kg

Container Information

Package Level 1 Units	box 1 piece
Package Level 1 Width	248 mm
Package Level 1 Height	240 mm
Package Level 1 Depth / Length	285 mm
Package Level 1 Gross Weight	5.1 kg
Package Level 1 EAN	8056221021807

Environmental

RoHS Status	Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019
Conflict Minerals Reporting Template (CMRT)	9AKK108467A5658
Environmental Information	9AKK107991A8215 9AKK108467A6707
REACH Declaration	9AKK108466A1425
RoHS Information	9AKK108466A1424
Toxic Substances Control Act - TSCA	9AKK108467A8326

Technical UL/CSA

Interrupting Rating acc. to UL489	(240 V AC) 65 kA (480 V AC) 35 kA (600 V AC) 18 kA

Additional Information

Circuit Breaker Type to be Associated	Power Distribution
Current Type	AC
Mechanical Durability	240 cycles per hour 20000 cycle
Number of Poles	3
Order Multiple	1 piece
Power Loss	at Rated Operating Conditions per Pole 19.3 W
Product Main Type	SACE Tmax XT
Product Name	Moulded Case Circuit Breaker
Product Type	CB
Rated Current (I_n)	400 A
Rated Operational Voltage	600 V AC 600 V DC
Rated Uninterrupted Current (I_u)	400 A
Release	Ekip Dip LS/I
Release Type	EL
Short-Circuit Performance Level	N
Standards	UL
Sub-type	XT5
Suitable for Product Class	SACE Tmax XT
Terminal Connection Type	Fixed Circuit-Breakers
Version	F
CAD Dimensional Drawing	1SDH002065A1115 1SDH002065A1131

Certificates and Declarations (Document Number)

Data Sheet, Technical Information	1SDC210200D0206 1SDC210199D0206
Declaration of Conformity	9AKK107680A2824

- CE	
Environmental Information	9AKK107991A8215 9AKK108467A6707
Instructions and Manuals	1SDH002011A1002
REACH Declaration	9AKK108466A1425
RoHS Information	9AKK108466A1424
Mechanical Drawings	1SDH002011A1101
Wiring Diagram	1SDM000005A1001

Classifications

ETIM 6	EC000228 - Power circuit-breaker for trafo/generator/installation prot.
ETIM 7	EC000228 - Power circuit-breaker for trafo/generator/installation protection
ETIM 8	EC000228 - Power circuit-breaker for trafo/generator/installation protection
UNSPSC	39121616
WEEE Category	5. Small Equipment (No External Dimension More Than 50 cm)
eClass	V11.1 : 27370409
IDEA Granular Category Code (IGCC)	4932 >> 3 Pole Non-Interchangeable Trip Electronic Circuit Breakers

Categories

Low Voltage Products and Systems → Circuit Breakers → Moulded Case Circuit Breakers → Tmax XT







Product data sheet

Specifications



Circuit breaker, PowerPacT H, 150A, 3 pole, 600VAC, 14kA, lugs, Micrologic 3.2S, 100%

HDL36150CU33X

15 HP FIRE PUMP

Main

Range	PowerPact
Product name	PowerPact H
Product or Component Type	Circuit breaker
Device Application	Distribution

Complementary

Line Rated Current	150 A
Number of Poles	3P
Protected poles description	3t
Control Type	Toggle
Breaking capacity code	D
Breaking capacity	25 kA 240 V AC 50/60 Hz UL 489 18 kA 480 V AC 50/60 Hz 14 kA 600 V AC 50/60 Hz 20 kA 250 V DC
[Ue] rated operational voltage	690 V AC 50/60 Hz IEC 60947-3
Network Frequency	50/60 Hz
[Ics] rated service breaking capacity	25 kA 220/240 V AC 50/60 Hz IEC 60947-2 18 kA 380/440/415 V AC 50/60 Hz IEC 60947-2 14 kA 500/525 V AC 50/60 Hz IEC 60947-2 20 kA 250 V DC IEC 60947-2 20 kA 500 V DC IEC 60947-2
[Uimp] rated impulse withstand voltage	8 kV IEC 60947-2
Trip unit technology	Electronic, standard, Micrologic 3.2 S, LSI
Continuous current rating	100 %
[Ui] rated insulation voltage	750 V IEC 60947-2
Trip unit name	Micrologic 3.2 S
Suitability for isolation	Yes IEC 60947-2
Utilisation category	Category A
AWG gauge	AWG 14...AWG 3/0 aluminium/copper terminal
Local signalling	Ready 1 LED green) Alarm 1 LED 90 % Ir orange) Alarm LED 105 % Ir red)

* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

	Switched off (OFF) 1 trip indicator green)
Mounting mode	Unit mount lug)
Mounting Support	Lug
Electrical connection	Lugs line Lugs load
Terminal identifier	AL150HD
Long time pick-up adjustment range	0.25...1 x In
Tightening torque	44.25 lbf.in (5 N.m) 0.00…0.01 in² (2.5…6 mm²) (AWG 14...AWG 10) 123.91 lbf.in (14 N.m) 0.02…0.15 in² (10…95 mm²) (AWG 8...AWG 3/0)
Number of slots	2 auxiliary switch OF plug-in) 1 alarm switch SD plug-in) 1 overcurrent trip switch SDE plug-in) 1 voltage release MN or MX plug-in)
Power wire stripping length	0.63 in (16 mm)
Color	Black
Height	6.42 in (163 mm)
Width	4.09 in (104 mm)
Depth	3.39 in (86 mm)
Product Weight	4.85 lb(US) (2.2 kg)
Quantity per Set	1
Communication interface	Modbus Ethernet
Circuit breaker application	HACR rated

Environment

Quality labels	CE
Standards	UL CSA NEMA NOM-003-SCFI-2000 IEC 60947-2
Product certifications	UL CSA NOM
IP degree of protection	Front cover IP40 IEC 60529
Pollution degree	3 IEC 60947-1
Ambient air temperature for operation	28…158 °F (-2…70 °C)
Ambient Air Temperature for Storage	-58…185 °F (-50…85 °C)
Operating altitude	< 6561.68 ft (2000 m) without derating 5000 m with derating

Ordering and shipping details

Category	01107-H/J ELEC TRIP UNIT MOUNT BREAKER/SW
Discount Schedule	DE2
GTIN	785901950295
Returnability	No
Country of origin	US

Packing Units

Unit Type of Package 1	PCE

Number of Units in Package 1	1
Package 1 Height	5.13 in (13.018 cm)
Package 1 Width	7.25 in (18.415 cm)
Package 1 Length	8.44 in (21.433 cm)
Package 1 Weight	5.00 lb(US) (2.268 kg)

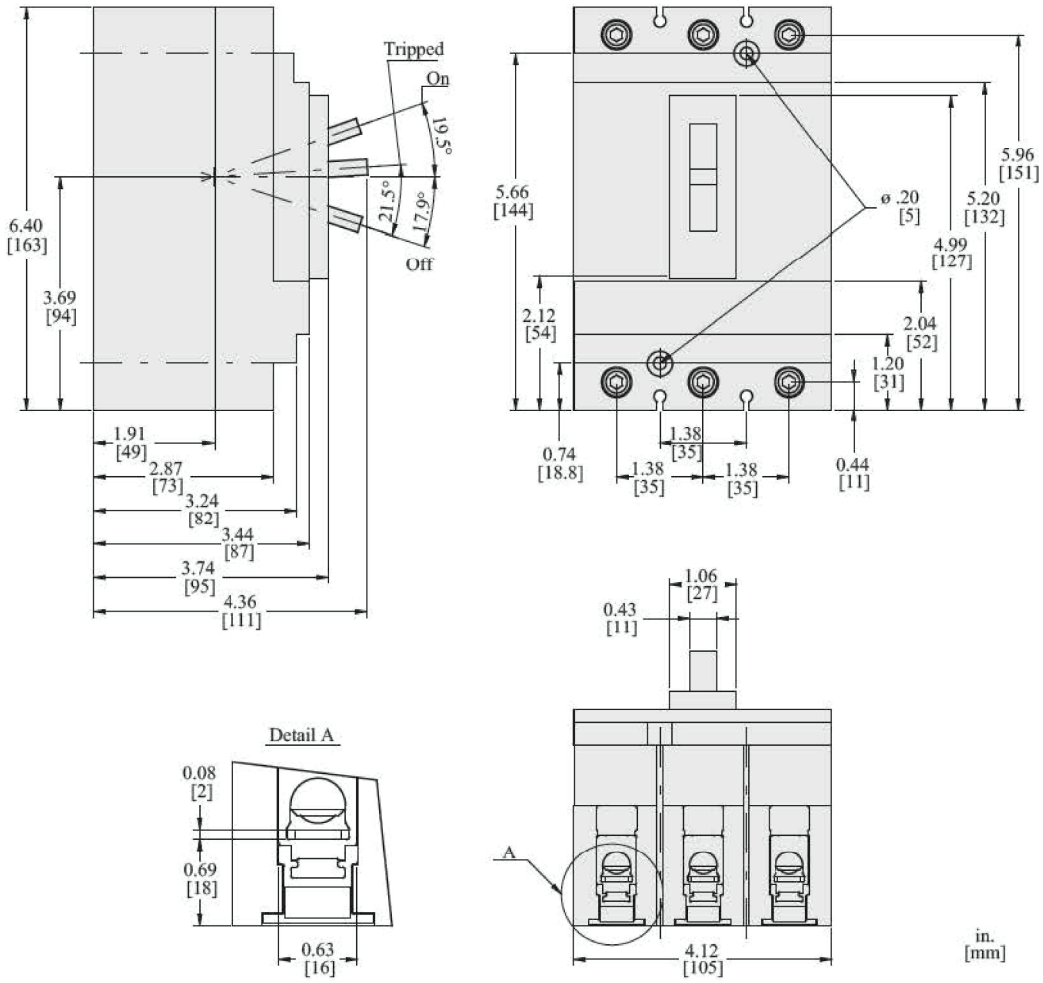
Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: DINP, which is known to the State of California to cause cancer, and DIDP, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACh Regulation	REACh Declaration
EU RoHS Directive	Compliant EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
PVC free	Yes

Contractual warranty

Warranty	18 months

Dimensions



All dimensions are approximate. Also refer to technical drawings and documentation.

Recommended replacement(s)

SECTION 4
TRANSFER SWITCH

Cutler-Hammer

ATC-300
Automatic Transfer Switch Controller

Technical Data

New Information



Introduction

The Cutler-Hammer® ATC-300 Automatic Transfer Switch Controller from Eaton's Electrical business is a comprehensive, multi-function, microprocessor-based automatic transfer switch controller. It is a compact, self-contained, panel-mounted controller that is designed to accurately monitor power sources and provide the necessary intelligence to reliably operate a transfer switch through a series of programmed sensing and timing functions. The ATC-300 provides an unmatched degree of programming flexibility to address the needs of any system.

Primary Functions

As standard, the ATC-300 Automatic Transfer Controller will:

- Monitor normal and emergency source voltages and frequencies.
- Provide transfer and re-transfer control signals.
- Provide engine/generator starting and shutdown signals.
- Permit customer programming of operational set points.
- Display real-time and historical information.
- Permit system testing.
- Store customer and factory established parameters in nonvolatile memory.
- Provide faceplate source status indication.
- Provides an LCD-based display for programming and status readouts.

Operational Simplicity

From installation to programming to usage, the ATC-300 Controller was designed with operational simplicity in mind. Only one style needs to be considered regardless of input/output requirements or system voltages and frequencies. The intuitive front panel interface simplifies routine operation, programming, and data presentation and set point adjustment. An LCD-based display is backlit for enhanced visibility. The front panel membrane pushbuttons with positive-feedback move the ATC-300 Controller display from function-to-function or step-to-step within a function. The ATC-300 Controller provides the functionality of multiple devices combined in one package and mounts in less than 5.75 inches (146.1 mm) x 7.75 inches (196.8 mm) of panel space.

Industrial Design Highlights

- True rms voltage sensing of normal and emergency sources.
- Frequency sensing of normal and emergency sources.
- Voltage unbalance and phase rotation sensing.
- Programmable set points stored in nonvolatile memory.
- PowerNet™ communications capable.
- System monitoring with historical data storage and display.
- Gold-plated engine start contact.
- Digital set points for accurate and consistent performance.
- Automatic plant exerciser.
- UV-resistant faceplate with Mimic Diagram and LED status indicators.
- LCD-based, backlit, two-line display.
- Suitable for application over a wide range of environmental conditions.
- Self-diagnostic and system diagnostic functions with LED indication.
- Help function for detailed description of displayed message.
- System Test pushbutton.
- Positive feedback membrane pushbuttons for application in harsh environments.
- Password protected access to programming mode.
- Pretransfer contacts.
- Bypass Time Delay pushbutton.
- Control input for remote testing or peak shaving applications.
- Five different control input functions for maximum operational flexibility.
- In-phase and Time Delay Neutral transfer modes for systems with inductive loads.

Standards

The Cutler-Hammer ATC-300 Automatic Transfer Switch Controller meets or exceeds all industry standards for endurance, reliability and performance. It is designed to meet the needs of markets worldwide.

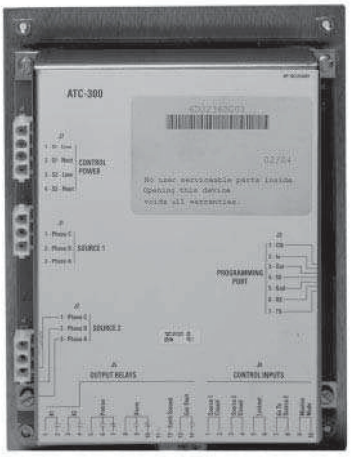
The ATC-300 Automatic Transfer Switch Controller is designed and built as standard in accordance with the following standards where applicable.

Table 1. Standards

UL® 1008	UL Standard for Safety for Transfer Switch Equipment
UL 991	Tests for Safety-Related Controls Employing Solid-State Devices
CSA® 22.2 No.178	Canadian Standards Association
IEC 61000-4-2, 61000-4-3, 61000-4-4 61000-4-5 61000-4-6 61000-4-11	International Electrotechnical Commission EMC Standards
FCC Part 15, Class A	Federal Communication Commission RF Emissions
CISPR 11	International Electrotechnical Commission Standard for RF Emissions
UBC®, BOCA® Seismic Zone 4	California Building Code
CE	European Standards Conformance

ATC-300 Automatic Transfer Switch Controller Product Overview





ATC-300 Automatic Transfer Switch Controller

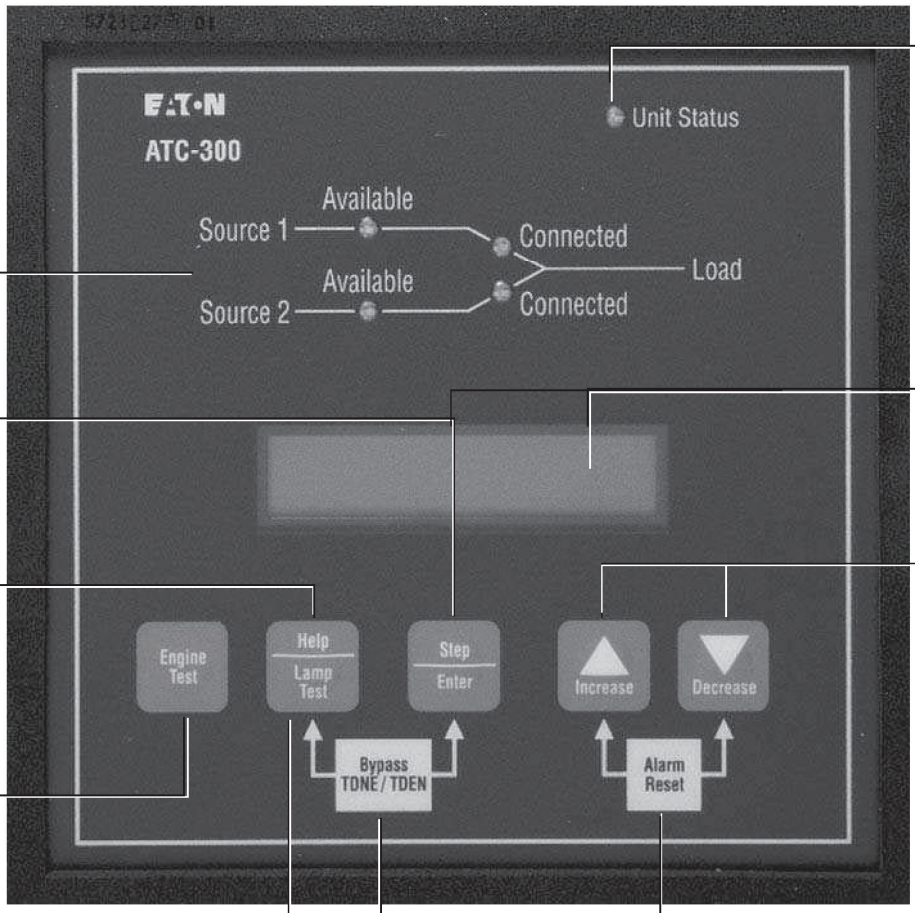
Table 2. Product Overview

Specifications	Value
Voltage	
Voltage Measurements of: Voltage Measurement Range Voltage Measurement Accuracy	Source 1 and 2: VAB, VBC and VCA 0 – 790 Vac rms ±1% of Full Scale
Frequency	
Frequency Measurements of: Frequency Measurement Range Frequency Measurement Accuracy	Source 1 and 2 40 – 70 Hz ±0.3 Hz
Control Power	
Input Range	65 Vac – 145 Vac rms, 50/60 Hz
System Inputs	
Source 1 Closed Source 2 Closed Lockout	Yes Yes Yes
Go to Source 2 Monitor Mode	Yes Yes
Output Contacts	
Form "A" for Generator Start Form "A" for Control	(1) 5 A, 250 Vac/30 Vdc (2) 10 A, 250 Vac/30 Vdc
Form "C" for Alarm Form "C" for Pre-Transfer	(1) 10 A, 250 Vac/30 Vdc (1) 10 A, 250 Vac/30 Vdc
Front Panel	
LED Indication	Unit Status. Source 1 and 2: Available and Connected (5 Total)
Main Display	LCD-Based Display
Parameters Displayed	Voltage, Frequency, Status, History, Time, Date, Set Points, Help Information
Stored Historical Data Includes:	Engine Run Time, Source 1 Available Time, Source 2 Available Time, Source 1 Connect Time, Source 2 Connect Time, Load Energized Time, Number of Transfers; Date, Time and Reason for Last 16 Transfers; Monitor Mode Event, Fail-Safe Event, Aborted Test

Table 2. Product Overview (Continued)

Specifications	Value
Front Panel	
Display Language Enclosure Compatibility	English, French NEMA® 1, 12 and 3R, UV-Resistant Faceplate
Operating Environmental Range	Operation -20°C – +70°C, Storage -30°C – +85°C, Humidity 0% – 95% Relative (Non-condensing)
Applicable Standards	UL 1008, UL 991, FCC Part 15, CISPR 11, IEC 1000-2,3,4,5, CSA, UBC and BOCA for Seismic Zone 4
Programming Access	Password
Front Panel Input Pushbuttons	Engine Test, Step, Help, Lamp Test, Increase, Decrease, Alarm Reset, Bypass Time Delays, Enter
Programming Selections	
Time Delay Normal to Emergency Time Delay Emergency to Normal Time Delay Engine Cooldown	0 – 1800 Seconds 0 – 1800 Seconds 0 – 1800 Seconds
Time Delay Engine Start Time Delay Neutral Time Delay Emergency Fail	0 – 120 Seconds 0 – 120 Seconds 0 – 6 Seconds
In-Phase In-Phase Frequency Difference Synchronization Time Allowance	Enabled or Disabled 0 – 3 Hz 1 – 60 Minutes
Pre-Transfer Signal Plant Exerciser	1 – 120 Seconds (Form "C" Contact) Selectable: Disabled, Daily or 7, 14, 28-Day Intervals, 0 – 600 Minutes, Load or No Load
System Sensing Voltage Unbalance Phase Reversal	3-Phase or Single-Phase 5% – 20% ABC – CBA
Test Pushbutton Mode	Disabled, Load, No Load
Undervoltage Dropout Range Undervoltage Pickup Range Overvoltage Dropout Range Overvoltage Pickup Range	50% – 97% of Nominal Dropout +2% – 99% of Nominal 105% – 120% of Nominal 103% of Nominal to Dropout -2%
Underfrequency Dropout Range Underfrequency Pickup Range	90% – 97% of Nominal Dropout +1 Hz – 99% of Nominal
Overfrequency Dropout Range Overfrequency Pickup Range	103% – 110% of Nominal 101% of Nominal to Dropout -1 Hz

ATC-300 Automatic Transfer Switch Controller Front Panel Display and Operator Functions



Unit Status
The Unit Status LED is a blinking indicator for self and system diagnostics.

Mimic Diagram
Source 1 and Source 2 color-coded LEDs provide Available and Connected status indication.

LCD-Based Display
The LCD-based display is a backlit, 2-line, 16-character display. Displayed information includes:

- Source voltages and frequency
- Time/date stamp
- Historical data
- Programming and set point information
- Password entry

Step/Enter
Pressing the Step/Enter pushbutton advances the information through the programming or display cycle.

Help
Pressing the Help pushbutton in any function mode will bring up display messages, explanations and prompts to assist the operator.

Increase and Decrease
Pressing the Increase or Decrease pushbuttons effect the value of the function presently active on the LCD-based display.

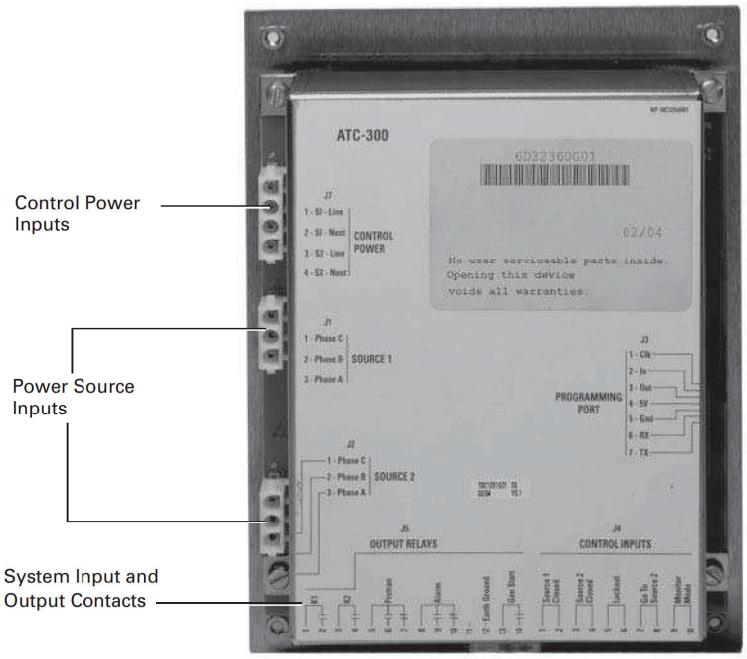
Engine Test
Pressing the Engine Test pushbutton twice initiates engine test cycle.

Alarm Reset
Pressing the Increase and Decrease pushbuttons simultaneously restores automatic operation in the event of an alarm condition).

Lamp Test
Pressing the Lamp Test pushbutton lights all LEDs and then displays ATC-300 controller information.

Bypass TDNE/TDEN
Pressing Step and Help/Lamp Test pushbuttons simultaneously reduces programmed time delays to zero to simplify test procedures.

ATC-300 Automatic Transfer Switch Controller



Rear View of ATC-300 Automatic Transfer Switch Controller

Output Contacts: The output contacts are dry relay contacts. The GEN START contact is rated 5 amperes at 250 Vac/ 30 Vdc. All other contacts are rated 10 amperes at 250 Vac/30 Vdc.

- K1, K2: These Form "A" output contacts are utilized to control single power switching mechanisms. They operate in conjunction with the SOURCE 1 and 2 CLOSED inputs.
- ALARM: Form "C" contact. This relay is energized during any of the following alarm conditions: failure of the power switching device to open or close, motor operator failure, unsuccessful in-phase transition, lockout condition, failed engine test, failed plant exerciser operation.
- PRE-TRAN: This relay operates on a timed basis (adjustable 0 – 120 seconds) prior to any transfer operation. Timing begins after TDNE or TDEN times out.
- GEN START: This is a latching relay utilized to initiate startup and shutdown cycles of the engine/ generator set.

Control Power Inputs (Source 1 and Source 2): The Control Power Input range is 65 Vac – 145 Vac, 50/60 Hz.

System Inputs: System Inputs are "wetted" contacts. Some system inputs are optional and must be enabled via factory control.

- SOURCE 1 CLOSED: This input is connected to the Source 1 power switching device position indication contact.
- SOURCE 2 CLOSED: This input is connected to the Source 2 power switching device position indication contact.
- LOCKOUT: This input is connected to an alarm contact. During an alarm condition, automatic operation is inhibited.
- GO TO SOURCE 2: This input provides the means to remotely initiate a startup and transfer cycle or retransfer and shutdown cycle.
- MONITOR MODE: This input allows the controller to be placed in a "non-automatic mode" while continuing to monitor source voltages and frequencies.
- EARTH GROUND: Provides a connection point for the common system ground.

Power Source Inputs (SOURCE 1 and SOURCE 2): The Power Source Inputs are the connection points for the power sources that are to be monitored. Three-phase systems are connected to Phase A, B and C. Single-phase systems are connected to points Phase A and Phase B.

Standard and Optional Features

All ATC-300 standard and optional features are listed in **Table 3**. All standard features are included and provided on all ATC-300 units.

Optional features must be specified with order entry and factory programmed. Only features that are originally ordered and factory programmed will appear on the LCD-based display. The ATC-300 Upgrade Module may be ordered to add optional features in the field.

Table 3. ATC-300 Automatic Transfer Controller — Standard and Optional Features

ATC-300 Features	Cutler-Hammer Feature Number	Field Programmable Set Point Range
Standard		
Time Delay Source 1 to Source 2 (TDNE) Time Delay Engine Start (TDES) Time Delay Source 2 to Source 1(TDEN) Time Delay Engine Cooldown (TDEC)	1 2 3 4	0 – 1800 Seconds 0 – 120 Seconds 0 – 1800 Seconds 0 – 1800 Seconds
Source 2 Single-Phase Undervoltage and Underfrequency Sensing	5B	UV Dropout: 50% – 97% of Nominal UV Pickup: (Dropout +2%) – 99% of Nominal UF Dropout: 90% – 97% of Nominal UF Pickup: (Dropout +1 Hz) – 99% of Nominal
Source 2 (Emergency) 3-Phase Undervoltage and Underfrequency Sensing	5J	UV Dropout: 50% – 97% of Nominal UV Pickup: (Dropout +2%) – 99% of Nominal UF Dropout: 90% – 97% of Nominal UF Pickup: (Dropout +1 Hz) – 99% of Nominal
Test Pushbutton Time Delay Emergency Fail (TDEF) Bypass TDEN Time Delay Bypass TDNE Time Delay	6B 7 8C 8D	No Load, Load or Disabled 0 – 6 Seconds Pushbutton Pushbutton
Source 1 Connected LED Indication Source 2 Connected LED Indication	12C 12D	N/A N/A
Source 1 Available LED Indication Source 2 Available LED Indication	12G 12H	N/A N/A
Plant Exerciser (Fail-Safe) with Selectable: (Daily, 7, 14 or 28-Day Cycle), (Load or No Load), (Day, Hour, Minute for Test Event) (0 – 600 Minutes Test Length)	23K	(Daily, 7, 14 or 28-Day Cycle), (No Load or Load) (Day, Hour, Minute) (0 – 600 Minutes Test Length)
Source 1 (All Phase) Undervoltage Sensing	26A	UV Dropout: 50% – 97% of Nominal UV Pickup: (Dropout +2%) – 99% of Nominal
Automatic Operation	29A	N/A
Seismic Zone 4 Qualification	42	N/A
Nominal Frequency Nominal Voltage	N/A N/A	50 or 60 Hz 120 – 600 Vac
System Phases Engine Test Run Duration for Engine Test Pushbutton and Plant Exerciser Duration	N/A N/A	1 or 3 0 – 600 Minutes
Optional		
Source 2 Single-Phase Overvoltage and Overfrequency Sensing	5C	OV Dropout: 105% – 120% of Nominal OV Pickup: 103% of Nominal to (Dropout -2%) OF Dropout: 103% – 110% of Nominal OF Pickup: 101% of Nominal to (Dropout -1 Hz)
Source 2 Single-Phase Undervoltage	5D	UV Dropout: 50% – 97% of Nominal UV Pickup: (Dropout +2%) – 99% of Nominal
Source 2 Single-Phase Overvoltage	5E	OV Dropout: 105% – 120% of Nominal OV Pickup: 103% of Nominal to (Dropout -2%)
Source 2 3-Phase Undervoltage	5F	UV Dropout: 50% – 97% of Nominal UV Pickup: (Dropout +2% – 99% of Nominal)
Source 2 3-Phase Overvoltage	5G	OV Dropout: 105% – 120% of Nominal OV Pickup: 103% of Nominal to (Dropout -2%)
Source 2 Phase Reversal	5H	0 = Disabled, 1 = ABC, 2 = CBA
Source 2 3-Phase Overvoltage and Overfrequency Sensing	5K	OV Dropout: 105% – 120% of Nominal OV Pickup: 103% of Nominal to (Dropout -2%) OF Dropout: 103% – 110% of Nominal OF Pickup: 101% of Nominal to (Dropout -1 Hz)
Source 2 3-Phase Voltage Unbalance	5L	(0 = Disabled, 1 = Active), (Dropout = 5% – 20%) (Pickup = 3% – (Dropout -2%)
Source 1 Overvoltage Sensing	26C	OV Dropout: 105% – 120% of Nominal OV Pickup: 103% of Nominal to (Dropout -2%)
Go to Source 2	26D	N/A
Source 1 Underfrequency Sensing	26E	UF Dropout: 90% – 97% of Nominal UF Pickup: (Dropout +1 Hz) – 99% of Nominal
Source 1 Overfrequency Sensing	26F	OF Dropout: 103% – 110% of Nominal OF Pickup: 101% of Nominal to (Dropout -1 Hz)
Source 1 Phase Reversal	26H	0 = Disabled, 1 = ABC, 2 = CBA
Source 1 3-Phase Voltage Unbalance	26L	(0 = Disabled, 1 = Active), (Dropout = 5% – 20%) (Pickup = 3% – (Dropout -2%)
Time Delay Neutral (TDN)	32A	0 – 120 Seconds
In-Phase Transition with Selectable (Enable or Disable), (Frequency Difference 0 – 3 Hz), (Synchronization Time 1 – 60 Minutes) and Default to Time Delay Neutral	32E	(Enable or Disable) (Frequency Difference 0 – 3 Hz) (Synchronization Time 1 – 60 Minutes)
Pretransfer Contacts (1NO/1NC)	35A	N/A

ATC-300 Upgrade Module

If an optional feature needs to be added after a transfer switch is in the field, contact the factory for availability of field upgrades with the ATC-300 Upgrade Module. This module can download new programs into the Automatic Transfer Controller (ATC-300) via connection to the communication module connector on the rear of the Automatic Transfer Controller device.

Dimensions in Inches (mm)

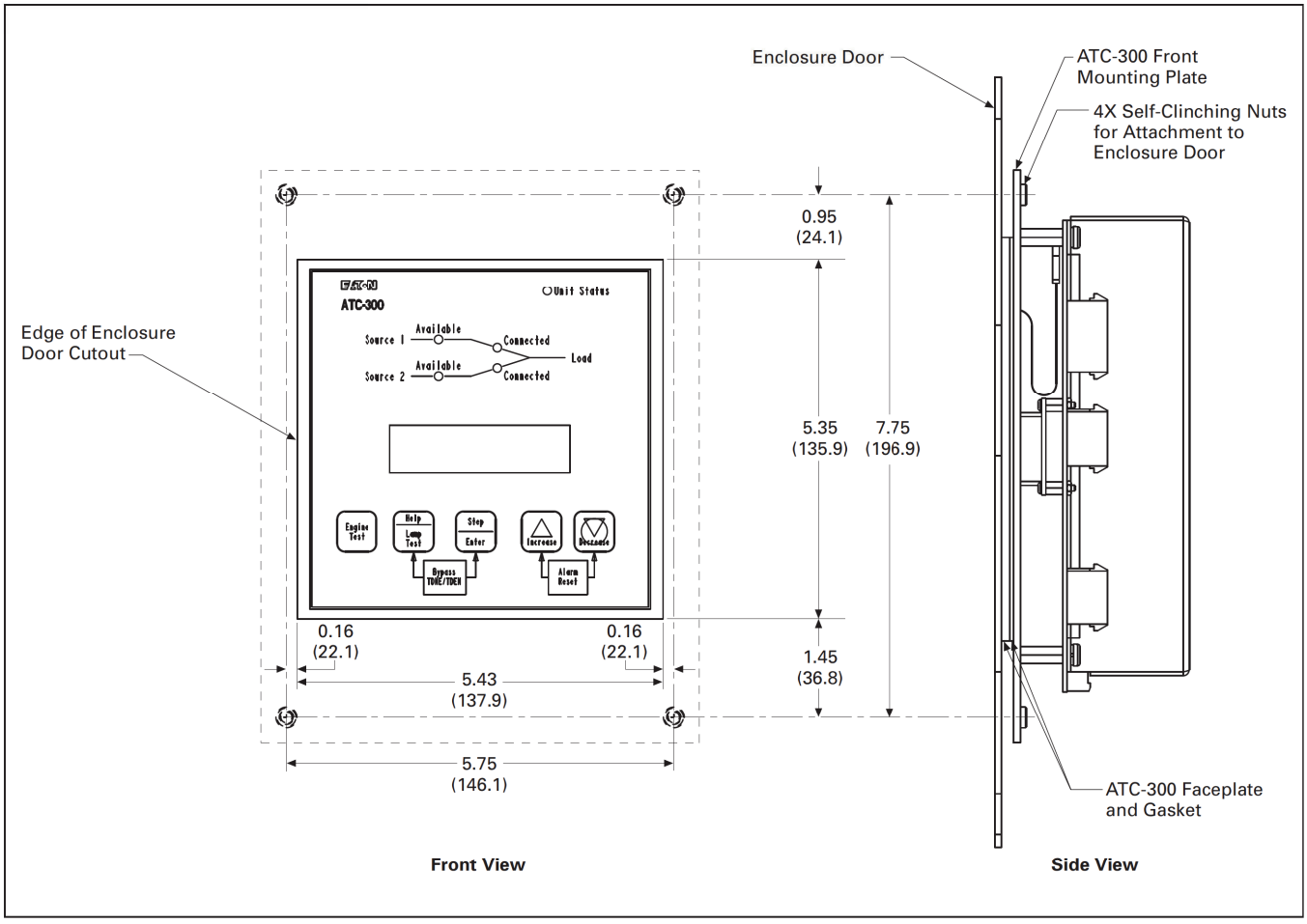


Figure 1. Automatic Transfer Controller (ATC-300)

UL is a federally registered trademark of Underwriters Laboratories Inc. CSA is a registered trademark of the Canadian Standards Association. UBC is a trademark of the International Conference of Building Officials (ICBO). BOCA is a registered trademark of Building Officials and Code Administrators International, Inc. Cutler-Hammer is a federally registered trademark of Eaton Corporation. NEMA is the registered trademark and service mark of the National Electrical Manufacturers Association.

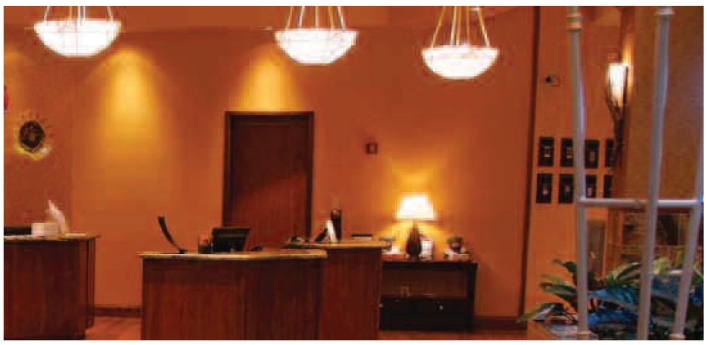
Dimensions are approximate and should not be used for construction purposes (1 inch = 25.4 mm).

Commutateurs de transfert à disjoncteur

Type de commutateur - Fonctionnement automatique, manuel et électrique
30 A à 1000 A



Commutateur de transfert automatique ATHM



Description du produit

Une gamme économique de commutateurs de transfert avec automate informatisé offrant des caractéristiques de base pour les utilisations d'alimentation de base de systèmes de 30 à 1000 A jusqu'à 600 V, à 2, 3 ou 4 pôles.

Caractéristiques électriques

- 40, 100, 150, 200, 225, 260, 400, 600, 800 et 1000 ampères
- 2, 3 ou 4 pôles
- Jusqu'à 600 V c.a., 50/60 Hz.
- NEMA® 1, 3R, ouvert, 12, 4, 4x
- Approuvé UL 1008
- Homologué CSA® C22.2 n° 178

Caractéristiques standard (ATC300)

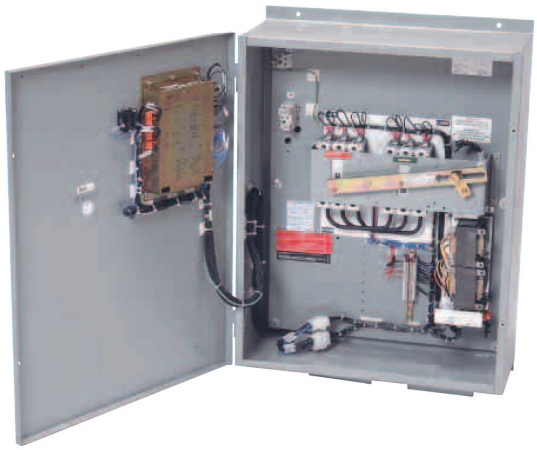
- Positions des contacts de commutateur
  - Source 1 Position 1NO et 1NF
  - Source 2 Position 1NO et 1NF
- Commande programmable à microprocesseur
- Surveillance du système d'alimentation normale et d'urgence
- Simulation des sources d'énergie à sécurité intégrée (programmable)
- Valeurs de tenue, de pouvoir de coupure et de fermeture élevées
- Transfert manuel sous charge
- Contacts de démarrage du moteur
- Délai temporisé entre le mode normal et le mode d'urgence
- Délai temporisé de démarrage du moteur
- Délai temporisé urgence à normal
- Délai temporisé de refroidissement du moteur
- Indicateurs DEL – position du commutateur
- Indicateurs DEL – source disponible
- Détection de sous-tension/sous-fréquence de la source d'urgence
- Détection de sous-tension de la source normale
- Délai temporisé de charge neutre
- Passer au contact d'urgence (protection de zone)
- Contacts de signal de prétransfert
- Délais temporisés de dérivation à bouton-poussoir

Caractéristiques en option

- Suppresseur de surtension disponible pour commande/alimentation, circuit de démarrage de moteur, connexions de téléphone et de câble
- Chaufferette avec thermostat
- Ampèremètre - du côté de la charge
- Surveillance de la qualité du courant
- Couvercle de commande en acier inoxydable

Caractéristiques en option (ATC 600)

- Communication à distance
- Délestage de la charge d'urgence
- Fonctionnement automatique ou non automatique sélectionnable





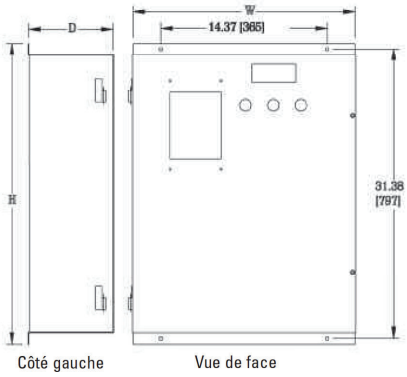


Figure A

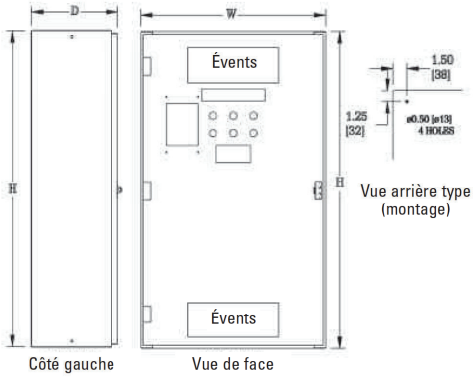


Figure B

DIMENSIONS DU BOÎTIER DE COMMUTATEUR DE TRANSFERT

Dimension du châssis	Nominale	Figure	Hauteur	Largeur	Profondeur
F	30A - 150A, 600V 30A - 200A, 240V	A	32,63 po (829)	24 po (610)	9 po (229)
→ K, L, M	225A - 600A	B	55 po (1397)	32 po (813)	15 po (381)
N	800A - 1200A	B	65 po (1651)	38 po (965)	16 po (406)

AT H 3 LD A 3 0400 E S C

Type
- **AT** = Automatique
- **MT** = Non automatique Manuel
- **NT** = Non automatique - Électrique

Automate programmable
- **3** = ATC-300
- **I** = ATC-600
- **X** = Sans logique

Montage
- **A** = Source1 (MCS), Source 2 (MCS)
- **B** = Source1 (MCCB), Source 2 (MCCB)
- **C** = Source1 (MCCB), Source 2 (MCS)
- **D** = Source1 (MCS), Source 2 (MCCB)

Nombre de pôles
- **2** = 2 pôles
- **3** = 3 pôles
- **4** = 4 pôles

Ampères
- **0030** = 30 A
- **0070** = 70 A
- **0100** = 100 A
- **0150** = 150 A
- **0200** = 200 A
- **0300** = 300 A
- → **0400** = 400 A
- **0600** = 600 A
- **0800** = 800 A
- **1000** = 1000 A

Tension
- **A** = 120 V, 60 Hz
- **B** = 208 V, 60 Hz
- → **E** = 600 V, 60 Hz
- **G** = 220 V, 50 Hz
- **H** = 380 V, 50 Hz
- **K** = 600 V, 50 Hz
- **M** = 230 V, 50 Hz
- **N** = 401 V, 50 Hz
- **O** = 415 V, 50 Hz
- **W** = 240 V, 60 Hz
- **X** = 480 V, 60 Hz
- **Z** = 365 V, 50 Hz

Boîtier
- **S** = NEMA 1
- **R** = NEMA 3R
- **J** = NEMA 12
- **L** = NEMA 4
- **D** = NEMA 4X
- **K** = Ouvert
- **P** = À l'épreuve des gicleurs

Orientation
- → **H** = Horizontal

Homologations
- **U** = Classifié UL
- → **C** = Certifié CSA

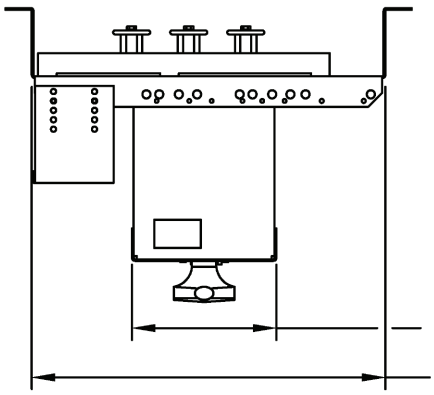
Bâti du commutateur

Type	240 V c.a.	480 V c.a.	600 V c.a.
FD = Bâti F	30-225A*	30-150A	30-150A
KD = Bâti K	400A	200-300A	200-300A
→ **LD** = Bâti L	600A	400A	400A
MD = Bâti M	800A	600A**	600A**
NB = Bâti N	800-1000A	800-1000A	800-1000A

Remarques : * Applications monophasées 225 A seulement
** 4 pôles, 600 V c.a., 600 A et bâti N

Système de numérotation du catalogue de commutateurs de transfert automatique à disjoncteur

REVISION
01



TOP VIEW

DIMENSIONS FOR OPEN–TYPE APPLICATION

7.8
[197]

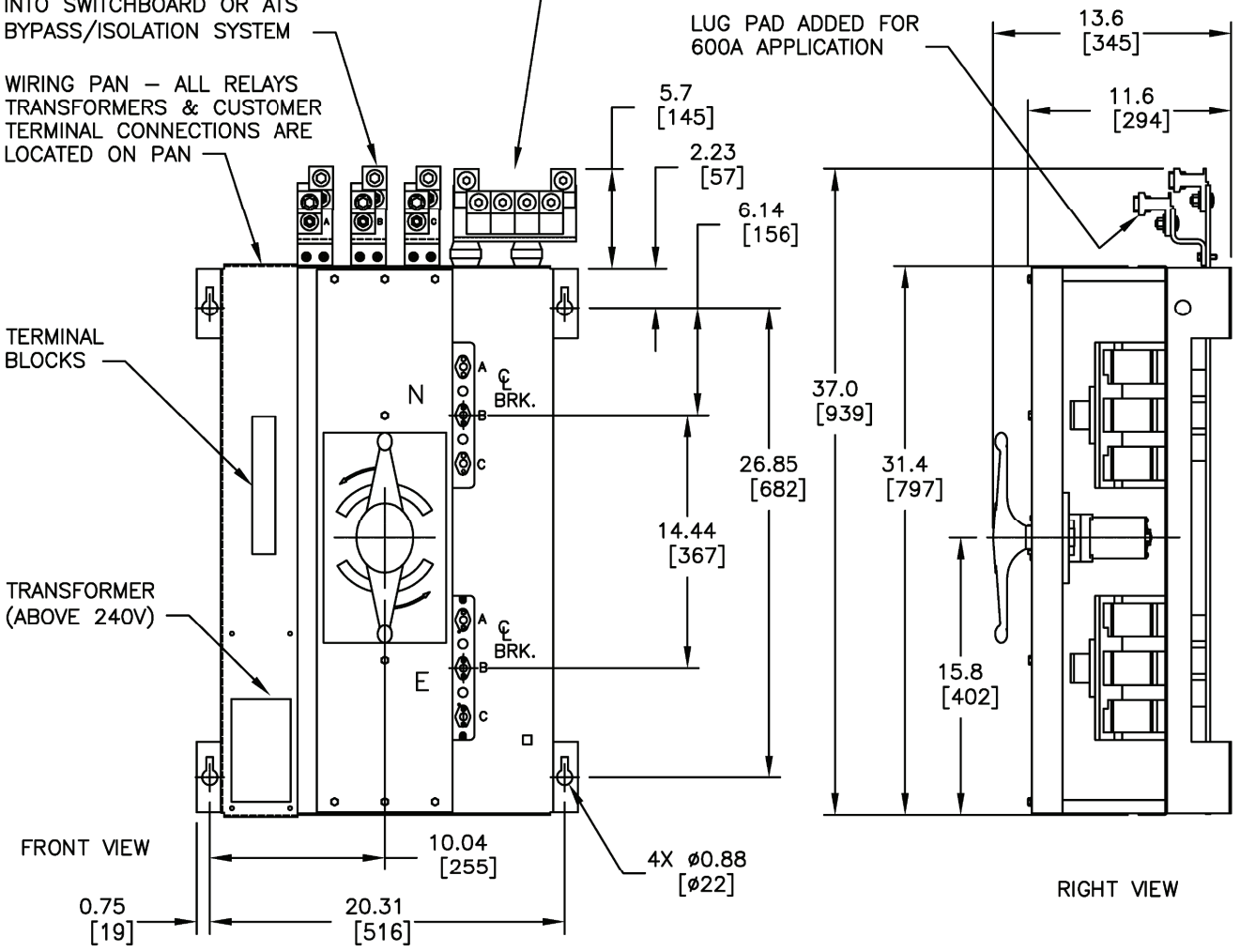
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[483]

LOAD LUGS CAN BE REMOVED AND/OR
BUS SHEARED AT EDGE OF PAN
FOR HORIZONTAL INSTALLATION
INTO SWITCHBOARD OR ATS
BYPASS/ISOLATION SYSTEM

NEUTRAL
(REMOVED FOR 3 WIRE AND OPEN TYPE)

LUG PAD ADDED FOR
600A APPLICATION

WIRING PAN – ALL RELAYS
TRANSFORMERS & CUSTOMER
TERMINAL CONNECTIONS ARE
LOCATED ON PAN



WIRE SIZE FOR STANDARD TERMINALS PER PHASE				
AMP. RATING	SWITCHING DEVICE	LINE	LOAD	NEUTRAL
400	L	(2) 250–500 MCM AL/CU	(1) 3/0–750 MCM AL/CU OR (2) 3/0–250MCM	(3) 3/0–750 MCM AL/CU OR (6) 3/0–250MCM
600 (TYPE B) 600 (240V MAX)	L	(2) 250–500 MCM AL/CU	(2) 3/0–750 MCM AL/CU OR (4) 3/0–250MCM	(6) 3/0–750 MCM AL/CU OR (12) 3/0–250MCM

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DFTR	DATE
RGC	16 MARCH 2006
APPD	DATE
RSA	20 APRIL 2006
S.O.	

EATON | Cutler-Hammer MILTON, ON

TITLE: WALL MOUNT AUTOMATIC TRANSFER SWITCH
L–FRAME (400A – 600A)

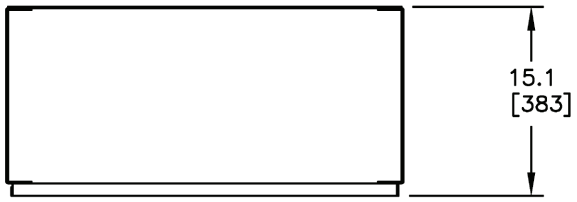
TYPE: ATH_L, NTHXL, MTHXL

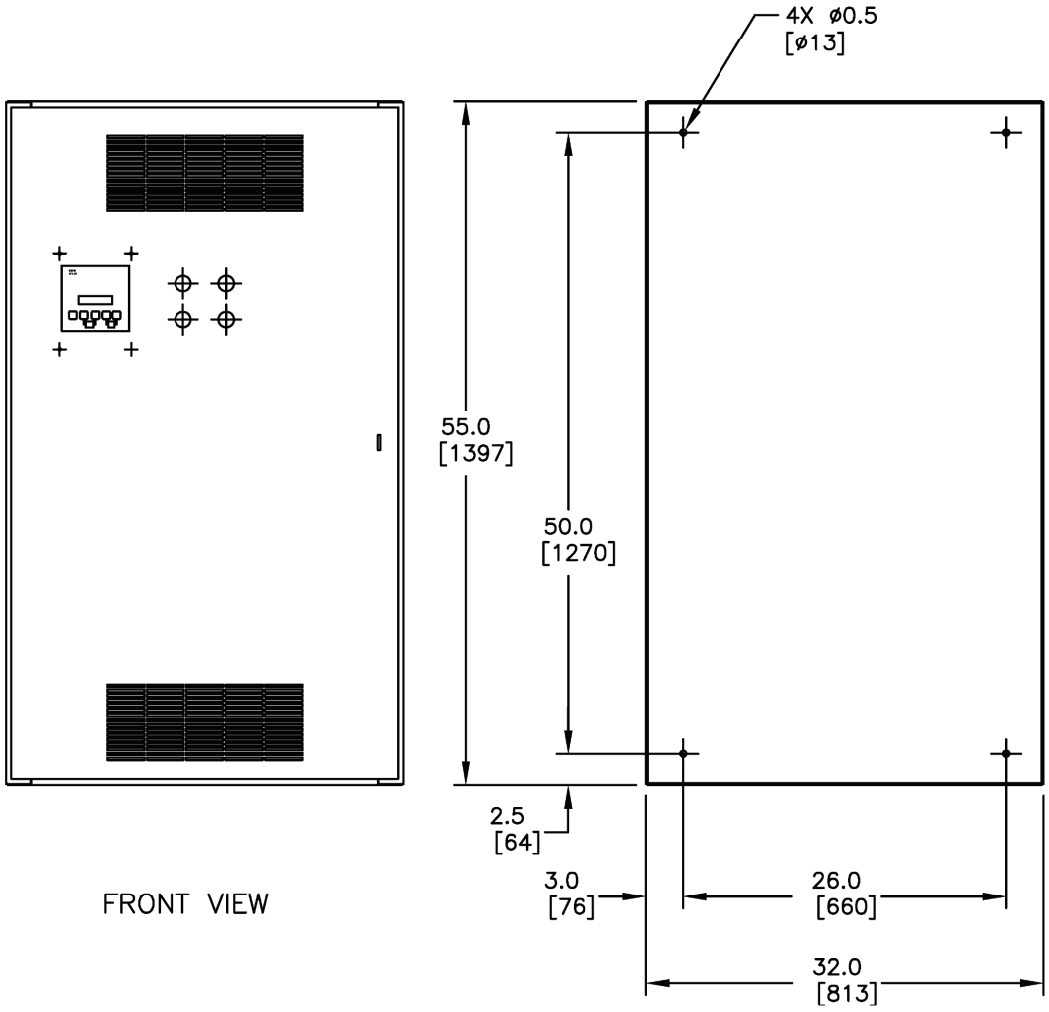
CE23116_SH1.DWG

FEDERAL ID NO.	PRODUCT CODE	REVISION	DWG SIZE	G.O.	DWG	SHEET
80429	PG 230	1	A		CE23116	1 OF 2

REVISION
01

ENCLOSURE DIMENSIONS





FRONT VIEW

REAR MOUNTING HOLES

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DFTR	DATE
RGC	16 MARCH 2006
APPD	DATE
RSA	20 APRIL 2006
S.O.	

EATON | Cutler-Hammer MILTON, ON

TITLE: WALL MOUNT AUTOMATIC TRANSFER SWITCH L-FRAME ENCLOSURE

TYPE: ATH_L, NTHXL, MTHXL

CE23116_SH2.DWG

FEDERAL ID NO.	PRODUCT CODE	REVISION	DWG SIZE	G.O.	DWG	SHEET
80429	PG 230	1	A		CE23116	2 OF 2

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	APPROVED BY	DATE	JOB NAME **ATH3FDA30150ESC**		
			DESIGNATION		
	VERSION **7.5**		TYPE	DRAWING TYPE **Customer Appr.**	
NEG-ALT NUMBER **SO750421C104-0000**	REVISION	DWG SIZE **A**	G.O.	ITEM	SHEET **3 OF 3**

VALEURS DE TENUE/DE FERMETURE DU COMMUTATEUR DE TRANSFERT À DISJONCTEUR

Lorsqu'il est protégé en amont par un disjoncteur Cutler-Hammer[MD] ou de toute autre marque, le commutateur de transfert peut être utilisé dans un circuit capable de fournir pas plus que l'intensité en RMS d'ampères symétriques indiquée ci dessous, à la tension indiquée ci dessous.

Tension	Intensité nominale du commutateur de transfert	Nombre de pôles commutés	Niveau de court-circuit maximal dans le dispositif en amont (kA symétrique) Disjoncteur Cutler-Hammer ou de toute autre marque en amont						
			25kA	35kA	42kA	50kA	65kA	100kA	200kA
120/240 et 240, 208Y/120	30 - 200	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	FDC,JDC,KDC
	225	2	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	FDC,JDC,KDC
	300	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	KDC
	400	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	KDC
	600	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	LDC
	800 - 1000	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	---
480Y/277 et 480	30 - 150	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	(FDB/FD)+LFD FDC,JDC,KDC	150kA FCL***,LCL***
	200 - 300	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	KDC,NB-TP**	LCL***
	400	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	---	---
	600	2,3	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	NB-TP	---
	800	2,3	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	---	NB-TP	---
	600 - 1000	4	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	---	---	---
	1000	2,3	N'importe quel*	N'importe quel*	N'importe quel*	N'importe quel*	---	---	---
600Y/347 et 600	30 - 150	2,3,4	N'importe quel*	N'importe quel*	(FD/FDB)+LFD KDC	(FD/FDB)+LFD KDC	(FD/FDB)+LFD KDC	(FD/FDB)+LFD LCL	---
	200 - 300	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	KDC	KDC	LCL	---
→	400	2,3,4	N'importe quel*	N'importe quel*	N'importe quel*	KDC	KDC	---	---
	600	2,3	N'importe quel*	N'importe quel*	N'importe quel*	LDC	---	---	---
	600	4	N'importe quel*	---	---	---	---	---	---
	800 - 1000	2,3,4	N'importe quel*	---	---	---	---	---	---

* Disjoncteur de toute marque ** Avec limiteur P12 *** Maximum 150 kA

VALEURS DE TENUE/DE FERMETURE DU COMMUTATEUR DE TRANSFERT À DISJONCTEUR

Lorsqu'il est protégé en amont par l'un des fusibles illustrés, le commutateur de transfert peut être utilisé dans un circuit capable de fournir pas plus que l'intensité en RMS d'ampères symétriques indiquée ci-dessous, à la tension indiquée ci-dessous.

Tension	Intensité nominale du commutateur de transfert	Nombre de pôles commutés	Niveau de court-circuit maximal dans le dispositif en amont (kA symétrique)		
			Fusible en amont		Intensité max. du fusible
			100kA	200kA	
120/240 et 240, 208Y/120	30 - 225	2,3,4	--- J,T	J, T ---	200A 400A
	300	2,3,4	R J,T	J,T ---	400A 600A
	400	2,3,4	J,T L	R ---	600A 1200A
	600	2,3,4	L ---	--- L	800A 1600A
	800 - 1000	2,3,4	---	L	1600A
480Y/277, 480, 600Y/347 et 600	30 - 150	2,3,4	--- J,T	J,T ---	200A 400A
	200 - 300	2,3,4	R J,T	J,T ---	400A 600A
→	400	2,3,4	J,T L	R ---	600A 1200A
	600	2,3	L ---	--- L	800A 1600A
	600	4	---	L	1600A
	800 - 1000	2,3,4	---	L	1600A



Metering

- Voltage V1, V2, V3, VLnavg, V12, V23, V31, VLlavg
- Current I1, I2, I3, In, Iavg
- Power P1, P2, P3, Psum
- Reactive power Q1, Q2, Q3, Qsum
- Apparent power S1, S2, S3, Ssum
- Frequency F
- Power factor PF1, PF2, PF3, PF
- Energy Ep_imp, Ep_exp, Ep_total, Ep_net, Epa_imp, Epa_exp, Epb_imp_Epb_exp, Epc_imp, Epc_exp
- Reactive energy Eq_imp, Eq_exp, Eq_total, Eq_net, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp
- Apparent energy Es, Esa, Esb, Esc
- Demand Dmd_P, Dmd_Q, Dmd_S, Dmd_I1, Dmd_I2, Dmd_I3
- Load features
- Four quadrant power

Features

Monitoring

- Power quality
- Voltage harmonics 2nd to 63rd and THD
- Current harmonics 2nd to 63rd and THD
- 400 Hz type, only support 2nd to 15th
- Voltage crest factor
- Telephone Interference Factor (TIF)
- Current K factor
- Voltage unbalance factor U_unbl
- Current unbalance factor I_unbl
- Max./min. statistics with time stamps

Alarms

Limits can be set for up to 16 indicated parameters and can be set with a specified time interval. If any input of the indicated parameters is over or under its setting limit and persists over the specified time interval, the event will be recorded with time stamps and trigger the alarm DO output. The 16 indicated parameters can be selected from any of the 80 parameters available.

I/O option module

A maximum of three modules can be used for one meter. Digital input, digital output, pulse output, relay output, analog input and analog output are provided by I/O option module.

Anti-tampering seal

Users can physically seal the meter similar to a utility meter in order to provide anti-tampering protection. All metrological programming and user-defined parameters are protected with a physical seal.

High frequency metering

Designed for use with 400 Hz aircraft systems, PXM 1000 series power meters effectively monitor aircraft ground power units.

Data logging

PXM 1100/1200/1300 offers three assignable historical logs where the majority of the metering parameters can be recorded. The onboard memory is up to 16 MB and each log size is adjustable. A real-time clock allows for any logged events to be accurately time stamped.

With the addition of the PXM1K-ETHMULTI communication module, the memory size expands to an industry-leading 8 GB memory with 1-second interval datalogging.

Time of use

Users can assign up to four different tariffs (sharp, peak, valley, and normal) to different time periods within a day according to the billing requirements. The PXM 1200 meter will calculate and accumulate energy to different tariffs according to the meter's internal clock timing and TOU settings.

Waveform capture

PXM 1300 can record 100 groups of voltage and current waveforms. It provides the waveform record of 10 cycles before and after the triggering point. It also supports a settable triggering condition. COMTRADE waveform file format is available for waveform capture with optional communication module (PXM1K-ETHMULTI)

Power quality event logging

When a power quality event happens, such as voltage sag and swell, etc., PXM 1300 will record the timestamp and the triggering condition of the event. It can save up to 50,000 power quality events.

Automatic frequency adaptation

Rated frequency is adjusted automatically to local frequency such as 50 Hz or 60 Hz. The same meter can be used in countries with different electrical frequencies.

Flexible current input

Compatible with different current transformers such as 5 A, 1 A, 333 mV and Rogowski coils all available from Eaton.

Communications

Standard

- RS-485

Communication protocols supported

- Modbus RTU
- DNP 3.0
- Modbus TCP option
- BACnet/IP option
- HTTP/HTTPS option
- Ethernet/IP option
- WiFi option
- IPv6 option
- SMTP (Simple Mail Transfer Protocol) option
- SNMP (Simple Network Management Protocol), V2, V3 option
- Ability to connect to Eaton's Power Xpert Gateway 900/950

Display

- Clear and large character LCD screen display with white backlight
- Wide environmental temperature endurance
- Display load percentage, four quadrant power, and load nature outline
- Small size 96 × 96 DIN or 4-inch ANSI round

Features

Category		Item	Parameters	PXM 1000	PXM 1100	PXM 1200	PXM 1300
Metering	Real-time metering	Phase voltage	V1, V2, V3, VLnavg	■	■	■	■
		Line voltage	V12, V23, V31, VIlavg	■	■	■	■
		Current	I1, I2, I3, In, Iavg	■	■	■	■
		Power	P1, P2, P3, Psum	■	■	■	■
		Reactive power	Q1, Q2, Q3, Qsum	■	■	■	■
		Apparent power	S1, S2, S3, Ssum	■	■	■	■
		Power factor	PF1, PF2, PF3, PF	■	■	■	■
		Frequency	F	■	■	■	■
	Energy and demand	Energy	Ep_imp, Ep_exp, Ep_total, Ep_net, Epa_imp, Epa_exp, Epb_imp, Epb_exp, Epc_imp, Epc_exp	■	■	■	■
		Reactive energy	Eq_imp, Eq_exp, Eq_total, Eq_net, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp	■	■	■	■
		Apparent energy	Es, Esa, Esb, Esc	■	■	■	■
		Demand	Dmd_P, Dmd_Q, Dmd_S, Dmd_I1, Dmd_I2, Dmd_I3	■	■	■	■
TOU	Time of use	Energy/max. demand	TOU, 4 tariffs, 12 seasons, 14 schedules	—	—	■	—
	Daylight saving time	Two adjustable formats	Month/day/hour/minute Month/week/first few weeks/hour/minute	—	—	■	—
Monitoring	Waveform capture	Voltage and current waveform*	Trigger, manual, DI change, sag/dips, swell, overcurrent	—	—	—	■
	Power quality	Voltage unbalance factor	U_unbl	■	■	■	■
		Current unbalance factor	I_unbl	■	■	■	■
		Voltage THD	THD_V1,THD_V2,THD_V3, THD_Vavg	■	■	■	■
		Current THD	THD_I1, THD_I2, THD_I, THD_Iavg	■	■	■	■
		Individual harmonics	Harmonics 2nd to 63rd (50 Hz or 60 Hz) Harmonics 2nd to 15th (400 Hz)	■	■	■	■
		Voltage crest factor	Crest factor	■	■	■	■
		TIF	Telephone Interference Factor	■	■	■	■
		Current K factor	K factor	■	■	■	■
	Statistics	MAX with time stamp MIN with time stamp	Each phase of V & I; Total of P, Q, S, PF & F; demand of I1, I2, I3, P, Q&S; each phase THD of V & I; unbalance factor of V & I	■	■	■	■
Others	Alarm	Over/under limit alarm	V, I, P, Q, S, PF, V_THD and I_THD each phase and total or average; unbalance factor of V and I; load type; analog input of each channel; demand of I1, I2, I3, P, Q&S; reverse phase sequence; DI1~DI28	■	■	■	■
	Power quality event logging	Sag/dips, swell	Voltage	—	—	—	■
	Data logging	Data logging 1 Data logging 2 Data logging 3	F, V1/2/3/avg, V12/23/13/avg, I1/2/3/n/avg, P1/2/3/sum, Q1/2/3/sum, S1/2/3/sum, PF1/2/3, PF, U_unbl, I_unbl, Load Type, Ep_imp, Ep_exp, Ep_total, Ep_net, Eq_imp, Eq_exp, Eq_total, Eq_net, Es, Epa_imp, Epa_exp, Epb_imp,Epb_exp, Epc_imp, Epc_exp, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp, Esa, Esb, Esc, THD_V1/2/3/avg, THD_I1/2/3/avg, harmonics 2nd to 63rd, crest factor, THFF, K factor, sequence and phase angles, DI counter, AI, AO, Dmd P/Q/S, Dmd I1/2/3	—	■	■	■
	Onboard memory size	Memory	Bytes	—	8 MB	8 MB	16 MB
		Optional Communication modules	PXM1K-MTCPP & PXM1K-BIPP 4GB	■	■	■	■
		Optional Communication modules	PXM1K-ETHMULTI 8GB	■	■	■	■
	Communication	RS-485 port, half duplex, optical isolated	Modbus®-RTU protocol/DNP3.0	■	■	■	■
	Time	Real-time clock	Year, month, date, hour, minute, second	■	■	■	■

* The PXM1300 takes 512 samples per cycle. For the waveform capture function on the PXM1300 the sample rate is 64 samples.

Accessories

Digital/analog I/O

Integrate data to/from other devices with field expandable plug-in I/O modules.

PXM1K-1XX



- 6x digital inputs
- 24 Vdc power for digital inputs
- 2x relay outputs

PXM1K-2XX



- 4x digital inputs
- 2x digital outputs
- 2x analog outputs

PXM1K-3XX



- 4x digital inputs
- 2x relay outputs
- 2x analog inputs

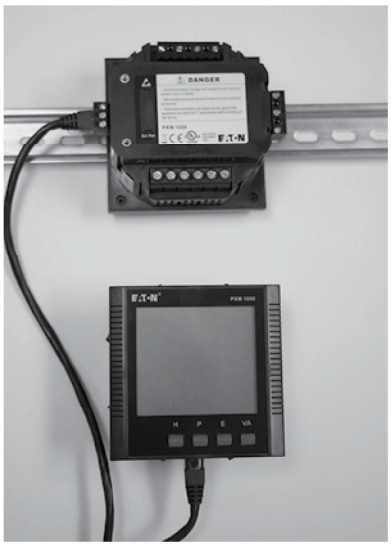
Din-Rail mounting adapter

PXM1K-DINADPT is a din rail mounting adapter that provides an easy way to din rail mount the PXM1000 meter with an integrated display. It will not work with a remote display or a transducer version.



Panel mount remote display

PXM 1000 panel mount remote display for DIN rail mount transducer version (PXM1000 T). Includes one 6 ft cable.



Communications modules

A standard RS-485 port and optional communication modules support a wide array of protocols.



PXM1K-MTCPP / PXM1K-BIPP



PXM1K-ETHMULTI

Communication protocols	Communication modules		
	PXM1K-MTCPP	PXM1K-BIPP	PXM1K-ETHMULTI*
MODBUS-TCP	X	X	X
HTTP/HTTPs webserver	X	X	X
SMTP email	X	X	X
SNMP V	X, V2	X, V2	X, V3
HTTP/HTTPs push	X	X	X
FTP post	X	X	X
sFTP server	X	X	X
Datalogging	4GB	4GB	8GB
Datalogging interval	15 sec	15 sec	1 sec
BACnet-IP		X	X
WiFi			X
EtherNet/IP			X
IPv6			X
Dual RJ45 ports			X
COMTRADE			X
Waveform display			X

** Additional details on the module is available in the user manual MN150013EN*

Dual-port Ethernet accessory communications module for Power Xpert Meter 1000

Eaton's Power Xpert Meter 1000 (PXM1000) is available with an optional multi-protocol, dual-port Ethernet communications module (PXM1K-ETHMULTI).





The communication module expands the PXM1000's capabilities with dual Ethernet (RJ45) ports and WiFi options. The module supports a wide range of communication protocols, including Modbus TCP/IP, BACnet/IP, EtherNet/IP, HTTP/HTTPs Post, FTP, sFTP, SNMP V3, SMTP and NTP time synchronization.

Features

- Ability to use both Ethernet ports and WiFi simultaneously with different networks and data acquisition systems
- Industry-leading 100 ms and 40 ms response rate via Modbus TCP/IP, providing users access to real-time updates to key parameters such as voltage, current and power
- EtherNet/IP protocol supports seamless integration to industrial automation systems
- Supports IPv6 version of internet protocol for large enterprise applications
- COMTRADE format for waveform retrieval
- 8 GB storage with 1-second interval datalogging capabilities
- Secure HTTPs data encryption
- WiFi supports access point mode for easy commissioning or station mode for continuous monitoring via wireless Ethernet network
- Web access to all metered, trend, harmonic and waveform information for analysis, including real-time monitored information in both numeric and graphical formats



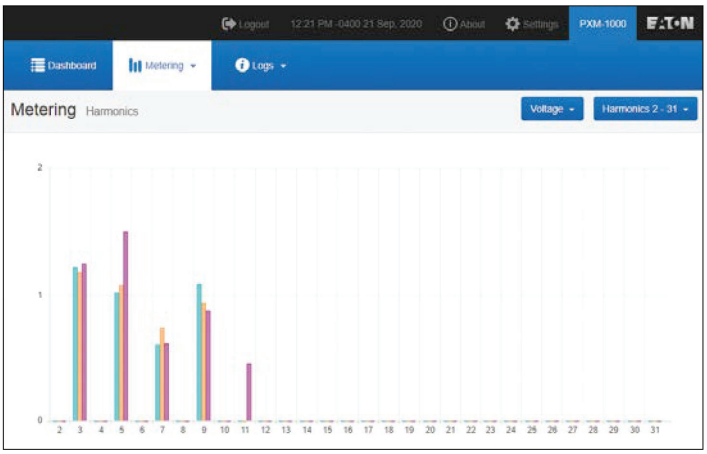
EATON
Powering Business Worldwide

PXM1K-ETHMULTI module

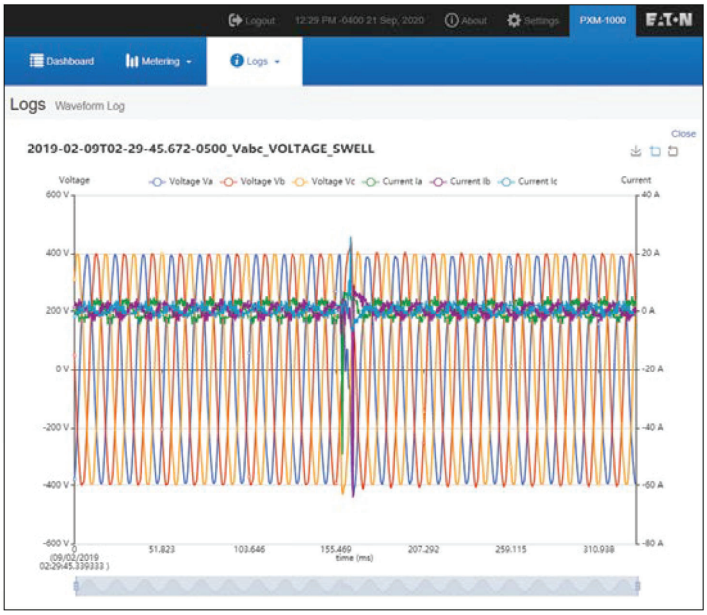




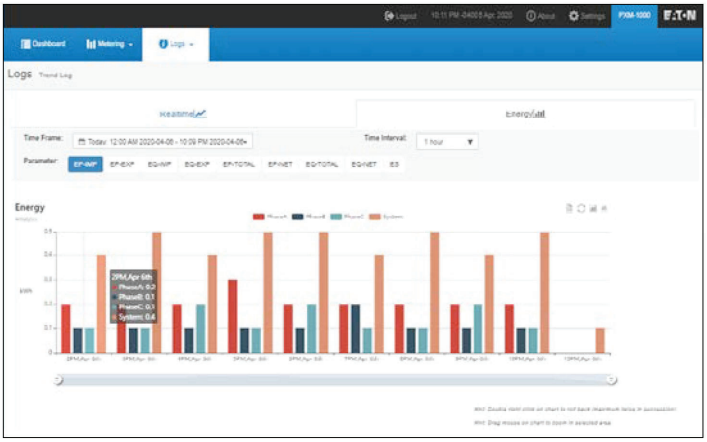
Functionality



Metering harmonics
The harmonics screen shows the harmonics of the voltage and the current being measured. It displays the harmonics of each phase in graphical and tabular format. Identifying excessive harmonics can prevent damage due to overheating in neutral conductors, transformers and motor windings.



Waveform log
The waveform capture screen allows users to record 10 cycles before and after the triggering point for a voltage sag, swell or overcurrent. Events like sag and swell can cause equipment interruption/damage. The ability to record these events allows the user to diagnose the root cause of the equipment damage.



Trend log
The trend log screen includes the real-time and energy trend diagram. This data enables users to understand and manage energy usage patterns to save on energy and peak demand charges.

To learn more, contact your local sales representative or visit
Eaton.com/pxm1000

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United States
Eaton.com

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Powering Business Worldwide

SECTION 5
DETAIL DRAWINGS

Sound enclosure

Description

Construction

- 14 gauge galvannealed steel construction.
- Zinc steel hardware used on outside surfaces
- Stainless steel hinges with nylon sleeve for smooth operation
- Double door in front of the controller with STD Wajax hinges.
- Automotive type weather and water proof neoprene door seals for easy opening.
- The roof is covered with welded PVC sheet membrane.

Ventilation

- Bird screens at the air intake and discharge openings
- Vertical air intake with extruded aluminum control damper with on/off actuator spring opening.
- Damper is installed inside the enclosure to protect them from weather and cold temperature.
- Thermostat to open the damper on high ambient temperature (40°C).
- Horizontal air discharge plenum with aluminium control damper with on/off actuator spring open.

Insulating material

- Acoustic and thermal Insulation ROXUL stone wool 4" installed on all the inside surfaces
- Acoustic wall and top liner made with steel perforated sheet.
- Inflammability as per MVSS 302
- Thermal resistance R=4.3/in

Exhaust

- Hi performance MTU silencer to reach the acoustical specification.
- Cowl silencer 22-28 dBA monted in series with MTU silencer.
- Installed inside the enclosure to minimise corrosion, condensation.
- Both silencer are isolated with STD Wajax blanket.
- Stainless steel exhaust flex.
- Exhaust piping ends through the wall and turn up to the sky.

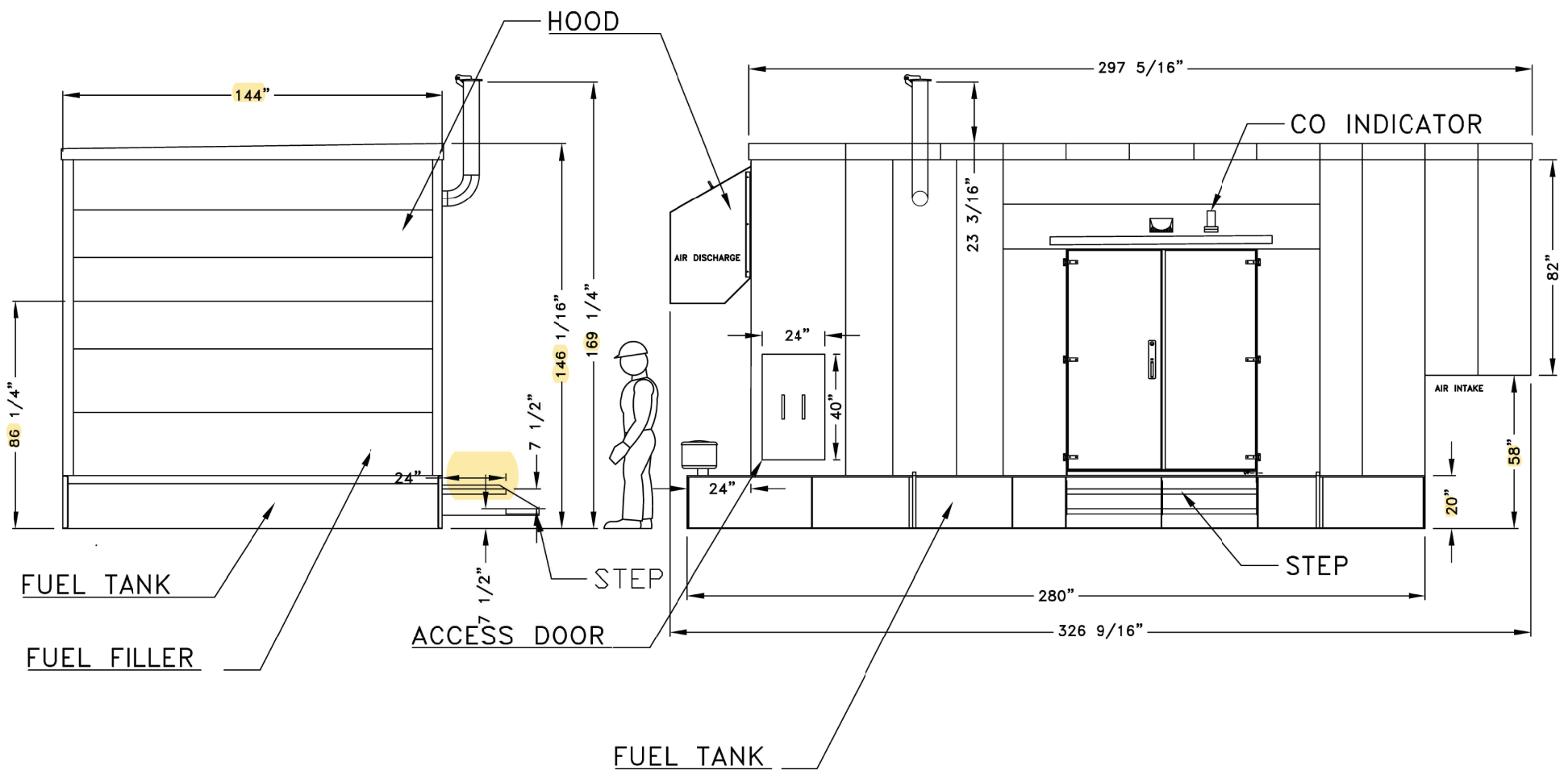
Paint

- Standard colors : Grey RAL-7001
- Polyester TGIC baked coating, offering a high resistance against corrosion, scratching and UV rays.



RAL 7001

5.1 ENCLOSURE



REV	DATE	REVISION	PAR
2	2023-03-02	Drawing up-date	SD
1	2023-02-21	Drawing up-date	SD
0	2022-12-13	For approval	SD

FOR COORDINATION

LES TOLÉRANCES SONT:
TOLERANCES ARE:
X.XXX ± 0.015"
X.XX ± .02"
FRACTIONS ± 1/32"
ANGLES ± 1°

PROJECTION NORD-AMÉRICAINE
THIRD ANGLE PROJECTION

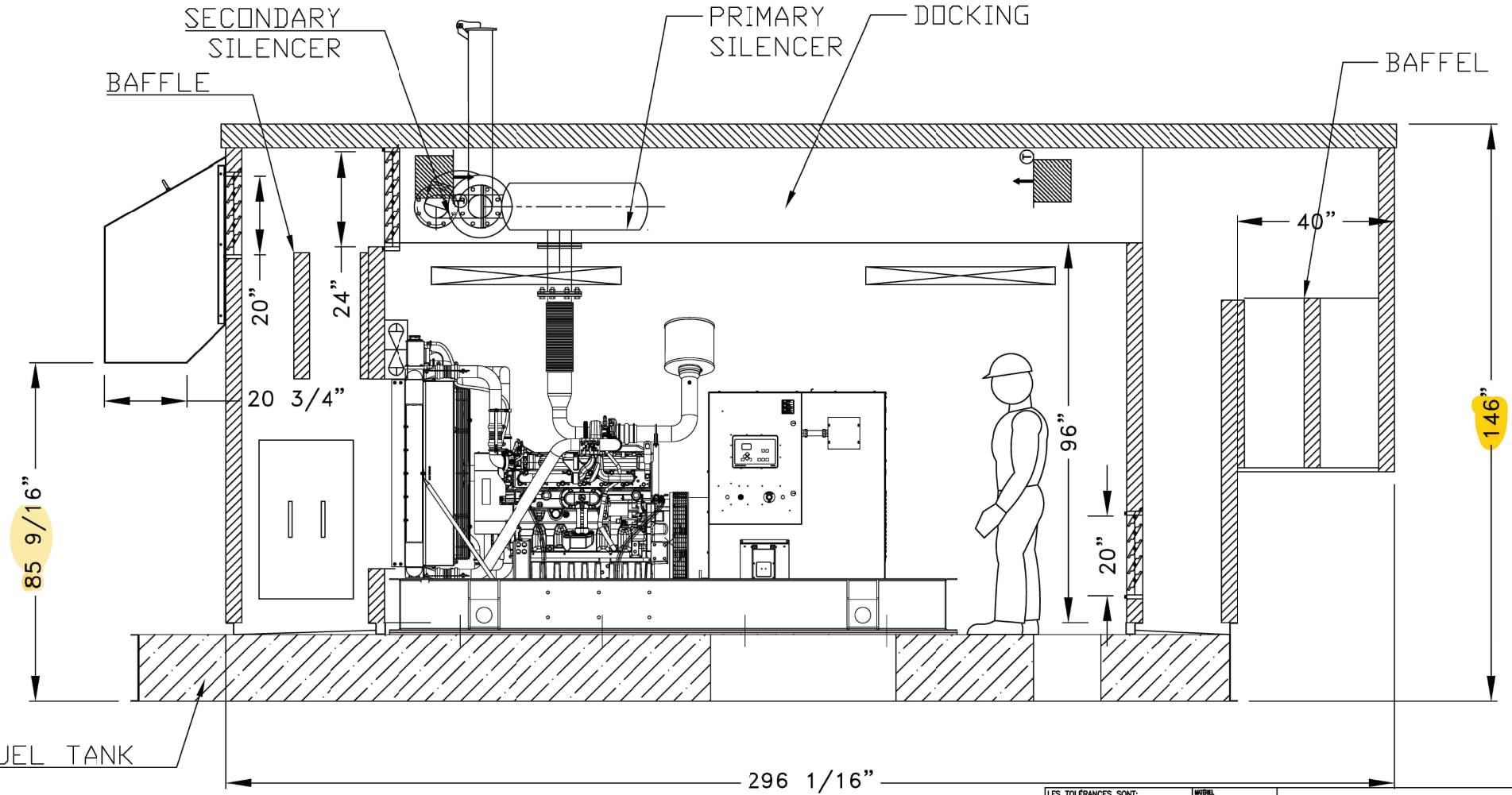
APPROBATION / APPROVALS	DATE
DESSINÉ DRAWN	SD 2022-12-13
APPROUVÉ APPROVED	

MATÉRIEL MATERIAL –
FINI FINISH –
POIDS WEIGHT – LBS
PROJET PROJECT 22MN0273M
NO PIÈCE PART NO. –
DESSIN FICHIER FILE PATH M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique

WAJAX
243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE TITLE
ENCLOSURE DS300kW GENERAL VIEW #1

ÉCHELLE SCALE –
NO. DESSIN DRAWING NO. 22MN0273M
PAGE 1/1



FOR COORDINATION

REV	DATE	REVISION	PAR
2	2023-03-02	Drawing up-date	SD
1	2023-02-21	Drawing up-date	SD
0	2022-12-13	For approval	SD

LES TOLÉRANCES SONT:
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FRACTIONS ± 1/32"
ANGLES ± 1°

PROJECTION NORD-AMÉRICAINE
THIRD ANGLE PROJECTION

APPROBATION / APPROVALS | DATE
DESSINÉ DRAWN: SD 2022-12-13
APPROUVÉ APPROVED:

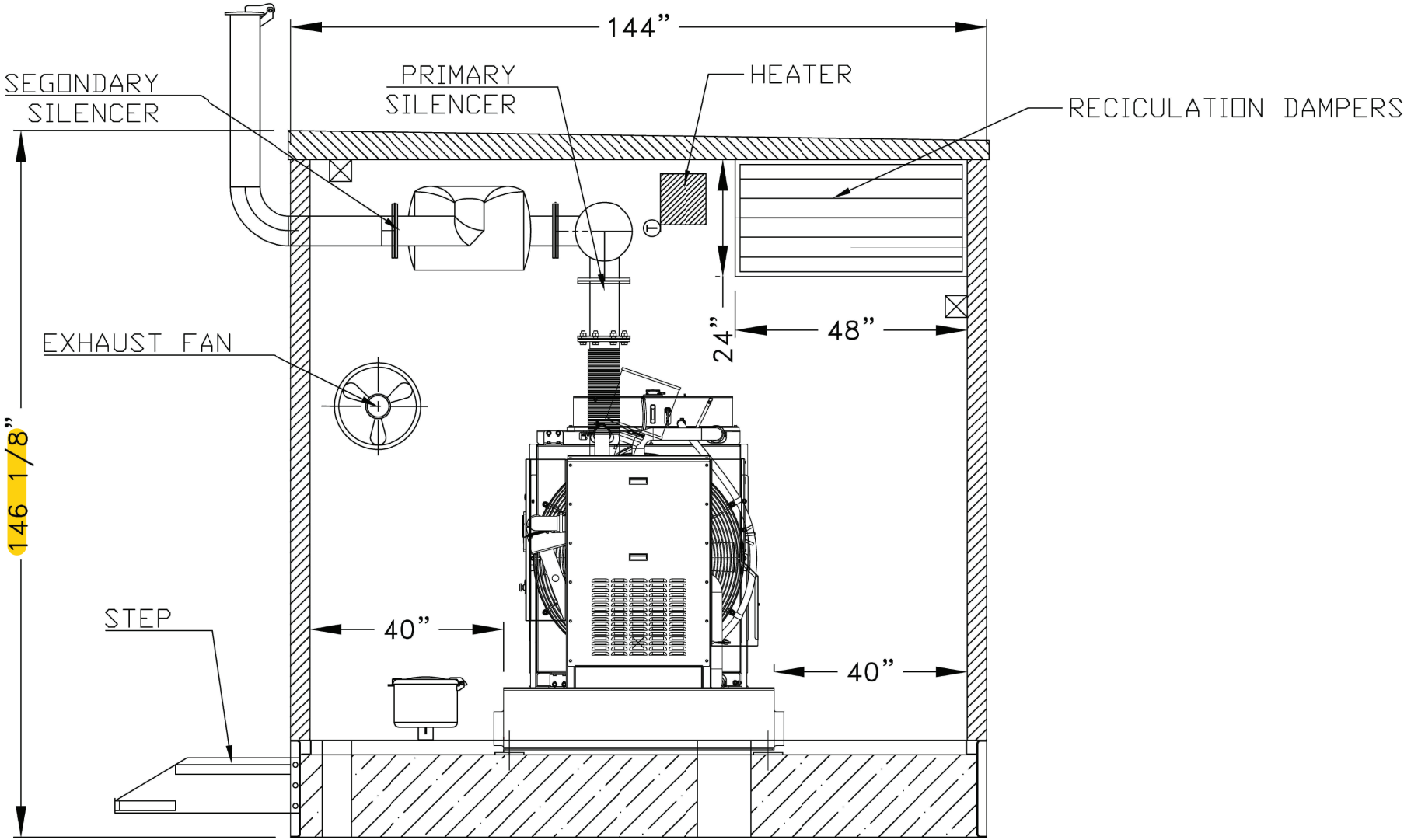
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POIDS WEIGHT: – LBS
PROJET PROJECT: 22MN0273M
NO PIÈCE PART NO.: –

DOSSIER FILE PATH: M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique

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243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE TITLE: ENCLOSURE DS300kW
GENERAL VIEW #2

ÉCHELLE SCALE: – | NO. DESSIN DRAWING NO.: 22MN0273M | PAGE 1/1



FOR COORDINATION

REV	DATE	REVISION	PAR
2	2023-03-02	Drawing up-date	SD
1	2023-02-21	Drawing up-date	SD
0	2022-12-13	For approval	SD

LES TOLÉRANCES SONT:
TOLERANCES ARE:
X.XXX ± 0.015”
X.XX ± .02”
FRACTIONS ± 1/32”
ANGLES ± 1°

PROJECTION NORD-AMÉRICAINE
THIRD ANGLE PROJECTION

APPROBATION / APPROVALS | DATE
DESSINÉ DRAWN: SD 2022-12-13
APPROUVÉ APPROVED:

DESSIN EXCEL FILE PATH: M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique

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FINI FINISH: –
POIDS WEIGHT: – LBS
PROJET PROJECT: 22MN0273M
NO. PIÈCE PART NO.: –

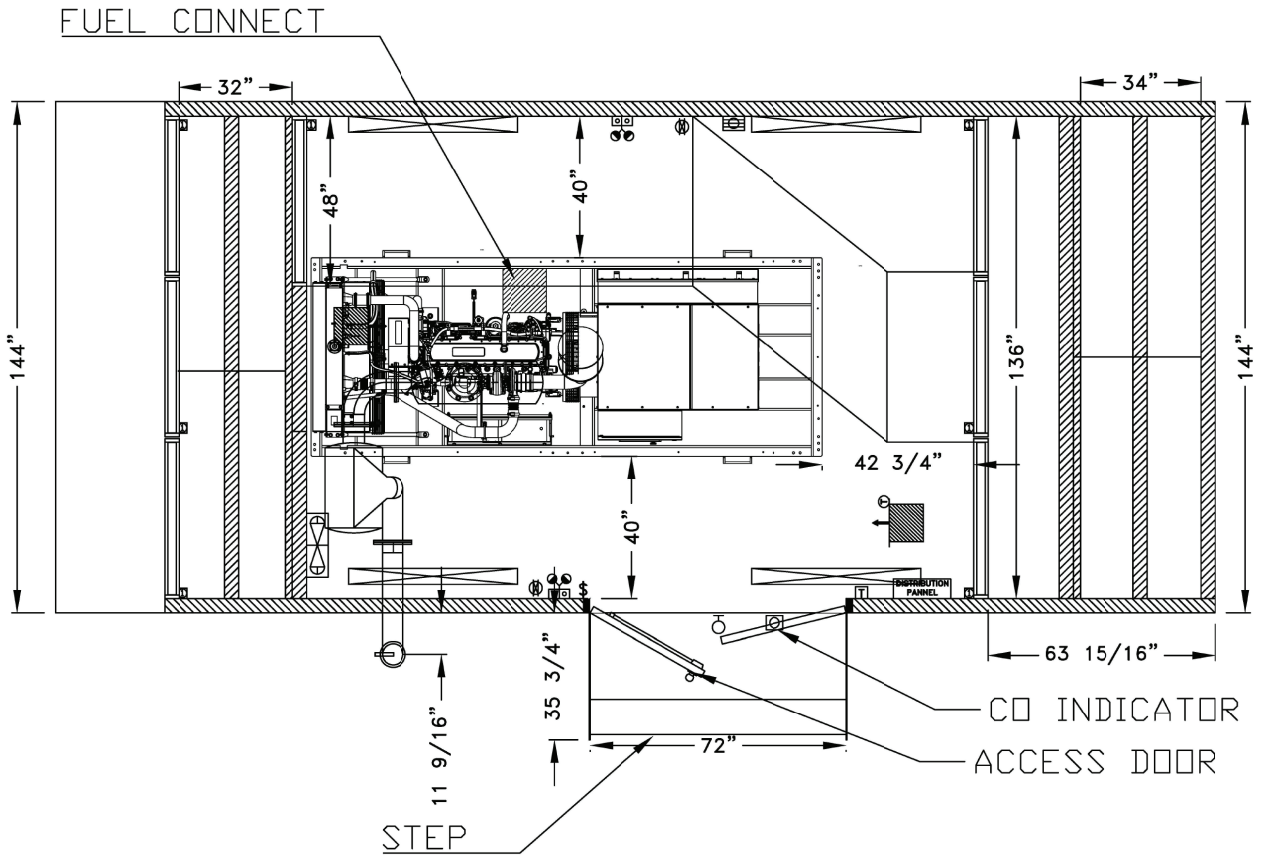
WAJAX
243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE TITLE: ENCLOSURE DS300kW
GENERAL VIEW #3

ÉCHELLE SCALE: – | NO. DESSIN DRAWING NO.: 22MN0273M | PAGE 1/1

ELECTRICAL DISTRIBUTION

- QTE=2 SPACE HEATER 2.5KW, 208V, 1PH
- QTE=2 DUPLEX GFI 120V, 20A
- QTE=4 INTERIOR LIGHTING
- QTE=1 LIGHT SWITCH
- QTE=1 OUTDOOR LIGHTING
- QTE=2 EMERGENCY LIGHT
- QTE=1 CO INDICATOR LIGHT
- QTE=1 CO DETECTOR
- QTE=1 MODULATING THERMOSTAT HONEYWELL T775M2030/U [T]
- QTE=7 MODULAR ACTUATOR BELIMO > SPRING OPEN. 24VDC [1]
- QTE=1 VENTILATION FAN



FOR COORDINATION

REV	DATE	REVISION	PAR
2	2023-03-02	Drawing up-date	SD
1	2023-02-21	Drawing up-date	SD
0	2022-12-13	For approval	SD

LES TOLÉRANCES SONT:
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X.XX ± .02"
FRACTIONS ± 1/32"
ANGLES ± 1°

PROJECTION NORD-AMÉRICAINE
THIRD ANGLE PROJECTION

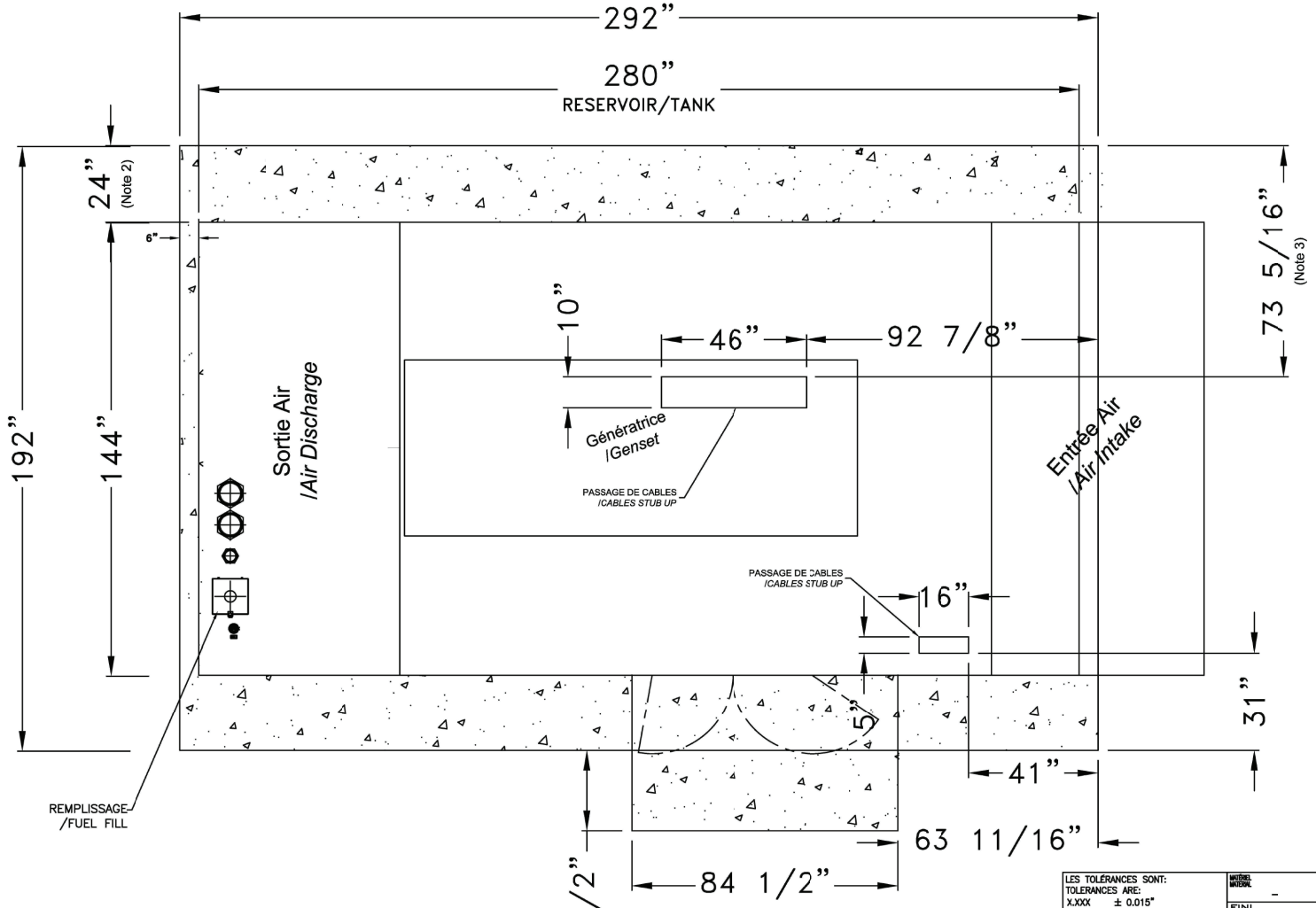
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DESSINÉ DRAWN SD	2022-12-13
APPROUVÉ APPROVED	

MATÉRIEL MATERIAL –
FINI FINISH –
POIDS WEIGHT – LBS
PROJET PROJECT 22MN0273M
NO PIÈCE PART NO. –
ÉCHELLE SCALE –
NO. DESSIN DRAWING NO. 22MN0273M
PAGE 1/1
DIMENSIONS EN POUCES
FILE PATH M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique

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(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE TITLE
ENCLOSURE DS300kW
GENERAL VIEW #4

DS230-300D6S - CONCRETE SLAB



Notes:

1. Prévoir au moins 1 mètre de dégagement autour de l'abri.
   / Keep at least 1 meter around the enclosure.
2. 24" recommandé. La dalle de béton doit être au moins 6po (15cm) plus grande que le réservoir et l'abri.
   / 24" recommended. Concrete slab must be at least 6in (15cm) around the tank and enclosure.
3. Dimension à ajuster si dalle de béton différente que représenté.
   / Dimension to be adjusted if concrete slab is different than show.

FOR COORDINATION

REV	DATE	REVISION	PAR
2	2023-03-02	Drawing up-date	SD
1	2023-02-21	Drawing up-date	SD
0	2022-12-13	For approval	SD

LES TOLÉRANCES SONT: / TOLERANCES ARE:
X.XXX ± 0.015”
X.XX ± .02”
FRACTIONS ± 1/32”
ANGLES ± 1°

PROJECTION NORD-AMÉRICAINE / THIRD ANGLE PROJECTION

APPROBATION / APPROVALS	DATE
DESSINÉ / DRAWN: SD	2022-12-13
APPROUVÉ / APPROVED:	

DOSSIER / FILE PATH: M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique

MATÉRIEL / MATERIAL: –
FINI / FINISH: –
POIDS / WEIGHT: – LBS
PROJET / PROJECT: 22MN0273M
NO. PIÈCE / PART NO.: –

WAJAX
243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE / TITLE: ENCLOSURE DS300kW CONCRETE SLAB

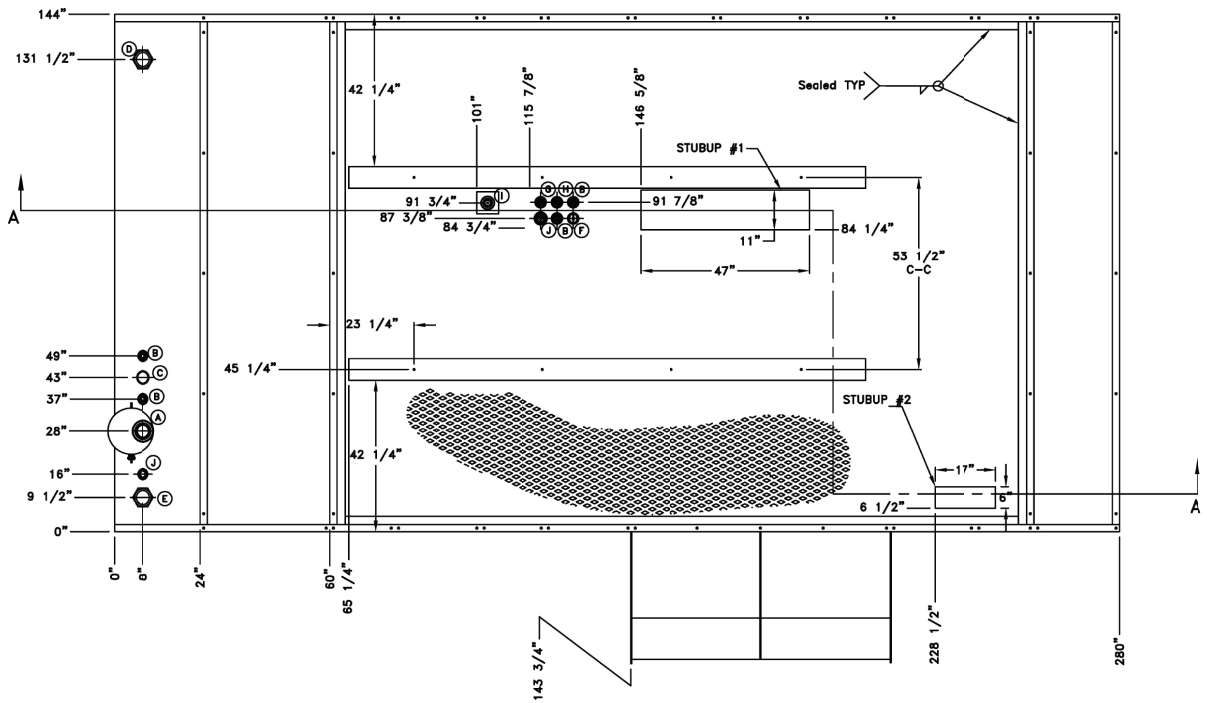
ÉCHELLE / SCALE: – | NO. DESSIN / DRAWING NO.: 22MN0273M | PAGE: 1/1

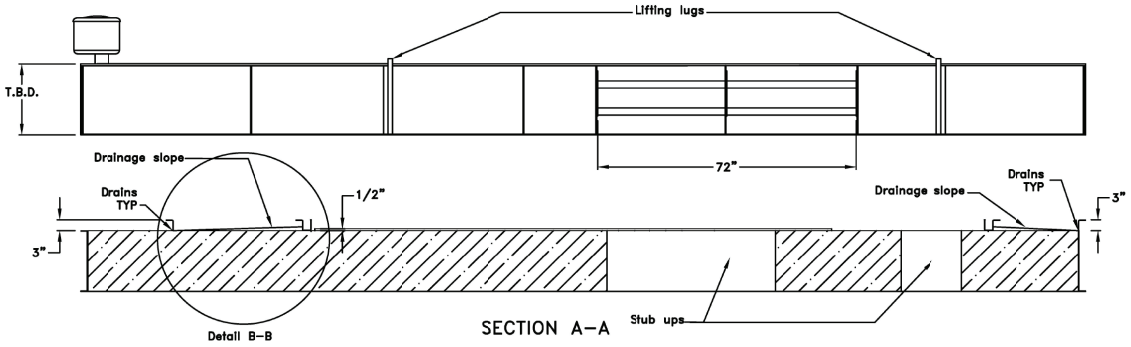
5.2 FUEL TANK

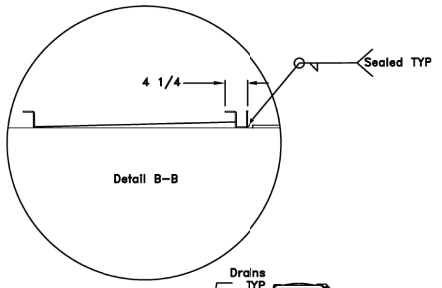
22MN0273M - TANK 1/3

NOTES

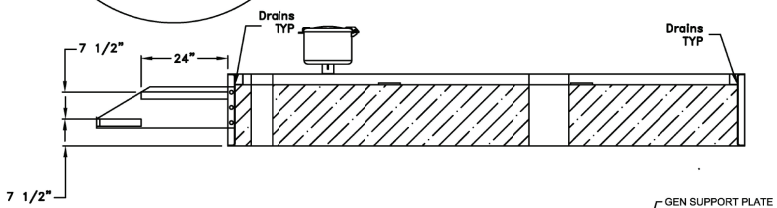
- Tank to contain 2900L usable fuel
- Tank to be certified JLC-S601
- Provide spill container, normal vent & emergency vent
- Secondary containment
- Vents positions adjustable, ONLY upon approval by WAJAX
- Checker plate ¼" surface
- 3" retention pool
- Drainage holes ½"dia. all around retention pool insulation (See view A-A)
- Black paint + primer
- Holes all around tank to fix enclosure walls
- Lifting lugs must lift the entire Generator system
- Provide lifting diagram to ensure equal weight distribution
- Rupture bassin containment 110%
- Pressur test at 3-5 PSI. Tank and sub tank
- Tank must be reinforced with chanels at the Gen supports
- Stair bolted to the tank

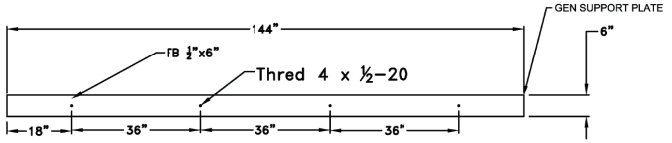






A: 4" Fuel fill
B: 2" Spare (4x)
C: Normal vent (Diameter TBD)
D: Primary emergency vent (Dia. TBD)
E: Secondary emergency vent (Dia. TBD)
F: 2" Sub base. cont. leak detection
G: 2" Suction pipe
H: 2" Return pipe
I: 2" Engine bay. cont. leak detection
J: 1 1/2" Fuel level indicator 2x





FOR COORDINATION

LES TOLÉRANCES SONT: TOLERANCES ARE: X.XXX ± 0.015" X.XX ± .02" FRACTIONS ± 1/32" ANGLES ± 1°	MATÉRIEL MATERIAL –	WAJAX	243, rue des Artisans St-Germain-de-Grantham (Québec) J0C 1K0 Tél: 1.800.567.3835 Fax: 819.395.5517
PROJECTION NORD-AMÉRICAINE THIRD ANGLE PROJECTION	FINI FINISH –	TITRE TITLE	ENCLOSURE DS300kW FUEL TANK
APPROBATION / APPROVALS DATE	POIDS WEIGHT – LBS		
DESSINÉ DRAWN SD 2023-02-2	PROJET PROJECT 22MN0273M	ÉCHELLE SCALE –	NO. DESSIN DRAWING NO. 22MN0273M RÉSERVOIR PAGE 1/3
APPROUVÉ APPROVED	NO PIÈCE PART NO. –		
CHEMIN D'ACCÈS FILE PATH	M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION\Ingénierie\Mecanique		

5.3 VENTILATION

AFBUP Technical Data Sheet
On/Off, Spring Return, AC 24…240 V



Torque min. 180 in-lb, for control of air dampers.

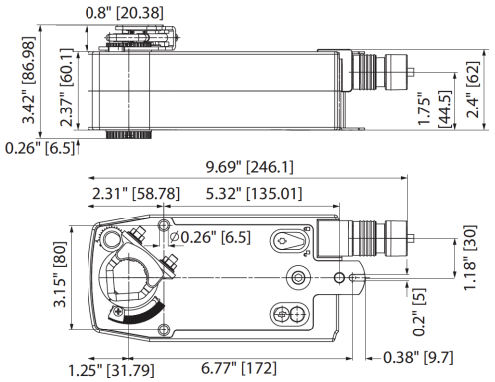
Application
For On/Off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is On/Off from an auxiliary contact or a manual switch. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft. Maximum of two AF's can be piggybacked for torque loads of up to 266 in-lbs. Minimum 3/4" diameter shaft and parallel wiring.

Operation
The AF..UP series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides constant torque to the damper with, and without, power applied to the actuator. The AF..UP series provides 95° of rotation and is provided with a graduated position indicator showing 0° to 95°. The actuator maybe be stalled anywhere in its normal rotation without the need of mechanical end switches. The AF..UP actuator is shipped at 5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut off.

Technical Data	
Power Supply	24...240 VAC, -20% / +10%, 50/60 Hz, 24...125 VDC, ±10%
Power consumption in operation	7 W
Power consumption in rest position	3.5 W
Transformer sizing	7 VA @ AC 24 V (class 2 power source), 8.5 VA @ AC 120 V, 18 VA @ AC 240 V
Shaft Diameter	1/2...1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	18 GA appliance cable, 3 ft [1 m], with 1/2" conduit connector
Overload Protection	electronic throughout 0...95° rotation
Electrical Protection	actuators are double insulated
Angle of rotation	95°, adjustable with mechanical end stop, 35...95°
Torque motor	180 in-lb [20 Nm]
Direction of motion motor	selectable by ccw/cw mounting
Direction of motion fail-safe	reversible with cw/ccw mounting
Position indication	Mechanical
Manual override	5 mm hex crank (3/16" Allen), supplied
Running Time (Motor)	75 s
Running time fail-safe	<20 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C]
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	Galvanized steel and plastic housing
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU and 2014/35/EU; Listed to UL 2043 - suitable for use in air plenums per Section 300.22(c) of the NEC and Section 602.2 of the IMC
Noise level, motor	50 dB(A)
Noise level, fail-safe	62 dB(A)
Servicing	maintenance-free
Quality Standard	ISO 9001
Weight	2.4 lb [2.4 kg]

†Rated Impulse Voltage 4kV, Type of Action 1.AA.B, Control Pollution Degree 3.

Dimensions (Inches[mm])

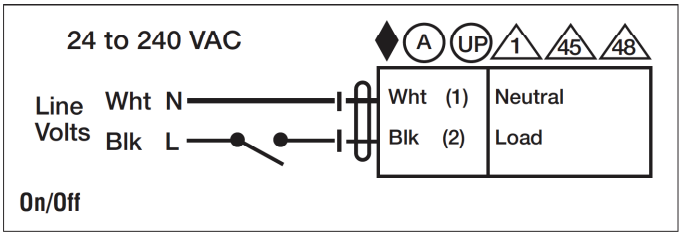


Date created, 04/15/2020 - Subject to change. © Belimo Aircontrols (USA), nc.

AFBUP Technical Data Sheet

On/Off, Spring Return, AC 24...240 V

Accessories	
AF-P	Anti-rotation bracket AF/NF.
AV8-25	Shaft extension
IND-AFB	End stop indicator
K7-2	Shaft clamp reversible
KG10A	Ball joint
KG8	Ball joint
KH10	Damper crank arm
KH8	Damper crank arm
KH-AFB	Actuator arm
SH10	Push rod for KG10A ball joint (36" L, 3/8" diameter).
SH8	Push rod for KG6 & KG8 ball joints (36" L, 5/16" diameter).
TOOL-06	8 mm and 10 mm wrench.
ZG-100	Univ. right angle bracket 17"x11-1/8"x6" (HxWxbase).
ZG-101	Univ. right angle bracket 13x11x7-7/16" (HxWxbase).
ZG-102	Dual actuator mounting bracket.
ZG-109	Right angle bracket for ZS-260.
ZG-110	Stand-off bracket for ZS-260.
ZG-118	AFB(X)/NFB(X) U bracket 5-7/8x5-1/2x2-19/32" (HxWxD).
ZG-120	Jackshaft mounting bracket.
ZG-AFB	Mounting kit for linkage operation
ZG-AFB118	AFB(X)/NFB(X) crankarm adaptor kit.
ZG-DC1	Damper clip for damper blade, 3.5" width.
ZG-DC2	Damper clip for damper blade, 6" width.
ZG-JSA-1	1" diameter jackshaft adaptor (11" L).
ZG-JSA-2	1-5/16" diameter jackshaft adaptor (12" L).
ZG-JSA-3	1.05" diameter jackshaft adaptor (12" L).
ZS-100	Weather shield - galvaneal 13x8x6" (LxWxD).
ZS-101	Base plate for ZS-100.
ZS-150	Weather shield - PC w/ foam seal 16x8-3/8x4" (LxWxD).
ZS-260	Explosion proof housing.
ZS-300	NEMA 4X, 304 stainless steel enclosure.
ZS-300-5	NEMA 4X, 316L stainless steel enclosure.
ZS-300-C1	1/2" shaft adaptor, standard wtih ZS-300(-5).
ZS-300-C2	3/4" shaft adaptor for ZS-300(-5).
ZS-300-C3	1" shaft adaptor for ZS-300(-5).
Z-SF	Base plate extension
P475	Shaft mount, non-Mercury aux. switch for 1/2" dia. shafts.
P475-1	Shaft mount, non-Mercury aux. switch for 1" dia. shafts.
PS-100	Low voltage and control signal simulator.
TF-CC US	Cable conduit connector, 1/2".



Typical Specification

On/Off spring return damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a jackshaft up to a 1.05" diameter. The actuators must be designed so that they may be used for either clockwise or counter clockwise fail-safe operation. Actuators shall be protected from overload at all angles of rotation. If required, two SPDT auxiliary switch shall be provided having the capability of one being adjustable. Actuators with auxiliary switches must be constructed to meet the requirements for Double Insulation so an electrical ground is not required to meet agency listings. Actuators shall be cULus listed and have a 5 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Date created, 04/15/2020 - Subject to change. © Belimo Aircontrols (USA), nc.

Wiring Diagrams

WARNING! LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

Meets cULus requirements without the need of an electrical ground connection.

(A) Actuators with appliance cables are numbered.

(UP) Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 125 VDC.

1 Provide overload protection and disconnect as required.

45 Actuators may be powered in parallel. Power consumption must be observed.

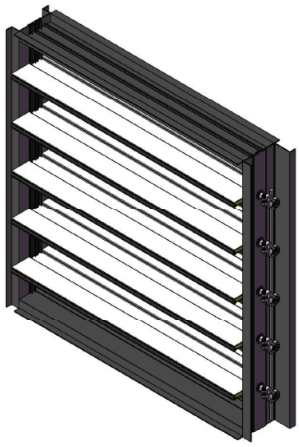
48 Parallel wiring required for piggy-back applications.

Date created, 04/15/2020 - Subject to change. © Belimo Aircontrols (USA), nc.

3900 SERIES
INSULATED CONTROL DAMPERS
3960 | 3961 | 3965



3960
Duct-Mount



3961 Quick 'N' Stall
Duct-Mount



3965
Flanged-to-Duct

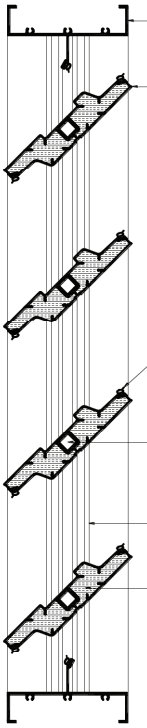
STANDARD CONSTRUCTION

Depth: 4" *(101 mm)* – 3960/3965
5.25" *(133 mm)* – 3961
Depth with Blades Open: 6.125" *(156 mm)*
Minimum Height: 8" *(203 mm)* - Single Blade
15" *(381 mm)* - Multiple Blade
Maximum Panel Width: 48" *(1219 mm)*
Maximum Panel Height: 60" *(1524 mm)*
Maximum Panel Size: 20 Sq.Ft.
Maximum System Pressure: 4" w.g. *(1 kPa)*
Operating Temperature Range: -40° to +180° F
Standard Finish: Mill
Standard Motor Installation: 6" Side Shaft Direct Drive
Linkage: Concealed in Frame (3960/3961)
Outside of Frame (3965)

AVAILABLE ACCESSORIES

- **Factory Supplied/Installed Actuators**
- **End Switch for signaling peripheral devices**
- **Jack Shaft**
- **Hand Quadrants**
- **Chain Operation for manual operation spring closed**
- **Silicone Blade and Jamb Seals – Specify 3900SI**
- **Salt Water Construction – Specify 3900SW**
- **Available finish: Clear Anodized**
- **Frame Insulation: Polystyrene Insulation**

PARALLEL BLADE (PB)



FRAME: 0.081" Extruded 6063-T5 Aluminum

BLADE: 0.063" Extruded 6063-T5 Aluminum

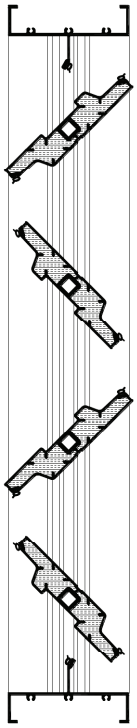
BEARINGS: Celcon inner bearing within a Polycarbonate outer bearing

BLADE SEALS: Santoprene

AXLES: 3⁄8" Aluminum Square Bar

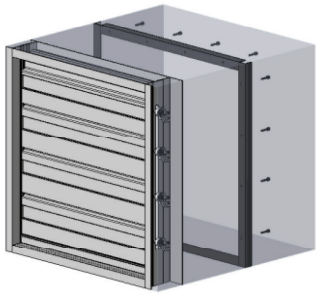
JAMB SEALS: Santoprene

BLADE INSULATION: High density polyurethane non-CFC foam (R-2.25) - Blades are thermally broken

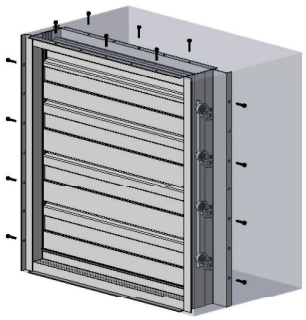


OPPOSED BLADE (OB)

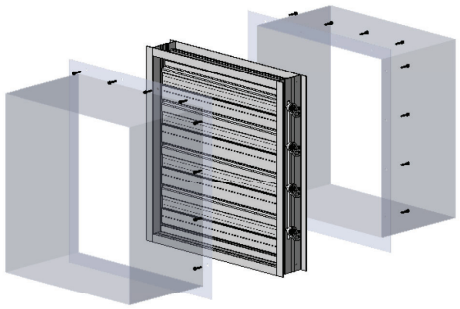
DWG. 3960-3961-3965 *AUGUST 2010*



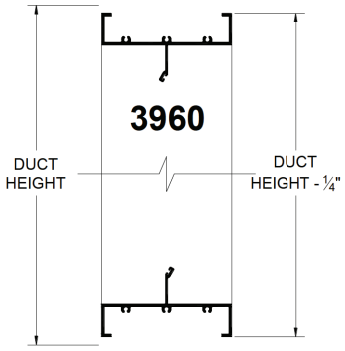
3960 – Duct-Mount

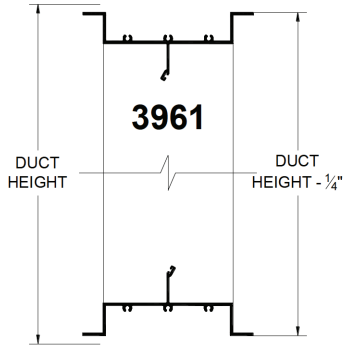


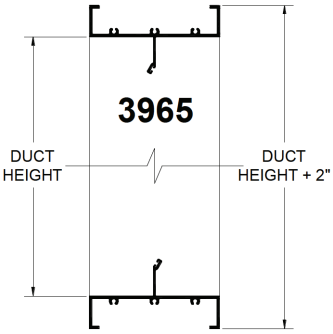
3961 – Duct-Mount



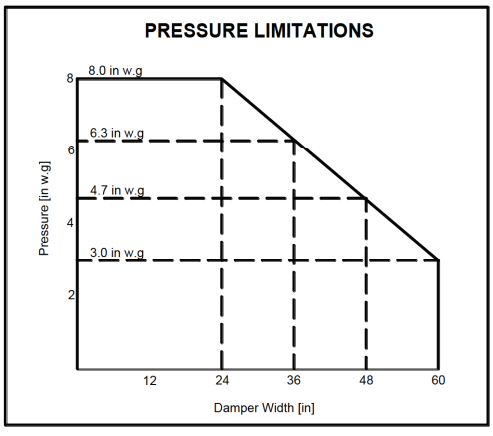
3965 – Flanged-to-Duct







For Duct-Mount Frame specify: *3960 / 3961*
For Flanged-to-Duct Frame specify: *3965*



RECOMMENDED SPECIFICATION

Furnish and install control damper models 3960 / 3961 / 3965 as manufactured by Alumavent, Bolton Ontario. Dampers must be licensed to bear the AMCA seal. Dampers shall be 4" *(101 mm)* deep. Blades shall be 0.063" *(1.60 mm)* thick, thermally broken with high density Polyurethane non-CFC injected foam insulation. Frame shall be 0.081" *(2.06 mm)* thick, with polystyrene insulation. Axles shall be 0.375" *(9.53 mm)* thick, Aluminum square bar. Blade and Jamb seals shall be Santoprene. Linkage is concealed in frame for models 3960 / 3961 and outside of frame for model 3965. Air leakage through a 36"x36" *(914 mm x 914 mm)* damper shall not exceed 3 CFM/ft^2 *(15.2 L/s/m^2)* against 4" w.g *(1.0 kPa)* static pressure at standard air (as per AMCA testing). Operating temperature range shall be -40° to +180° F.

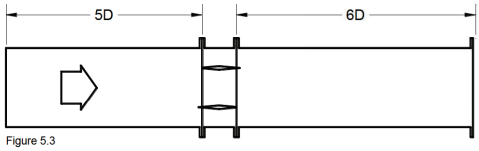
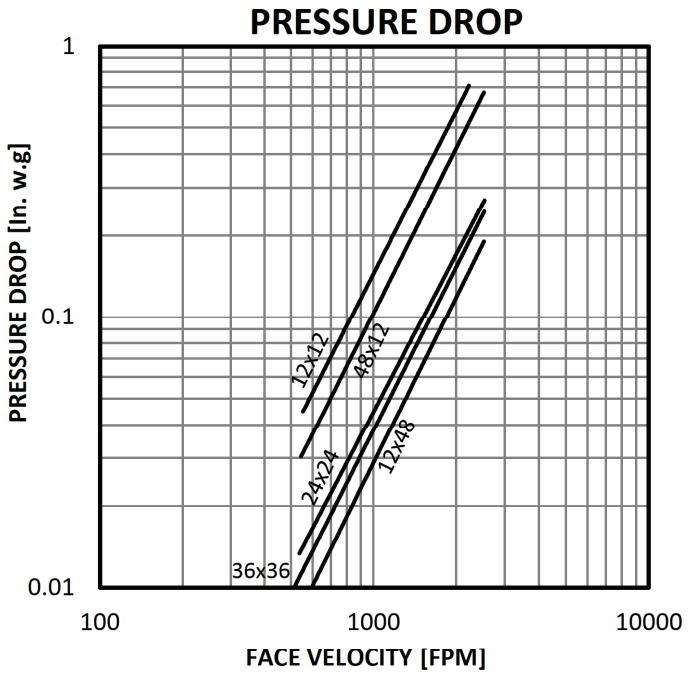


Figure 5.3

3900 SERIES CONTROL DAMPER PRESSURE DROP	
Velocity [FPM]	**Pressure Drop [in. w.g]**
12x12 (inches)	
553.6	0.044
891.4	0.119
1051.9	0.161
2021.4	0.554
2221.7	0.740
24x24 (inches)	
536.8	0.014
776.9	0.025
1101.1	0.056
2066.3	0.182
2530.1	0.272
36x36 (inches)	
500.4	0.01
750.6	0.021
1006.1	0.036
2019.5	0.161
2526.6	0.249
12x48 (inches)	
545	0.008
772.8	0.018
1095.3	0.035
2055.5	0.126
2519.2	0.187
48x12 (inches)	
544.6	0.029
772.2	0.064
1094.4	0.1228
2053.1	0.439
2516	0.661

CERTIFIED RATINGS

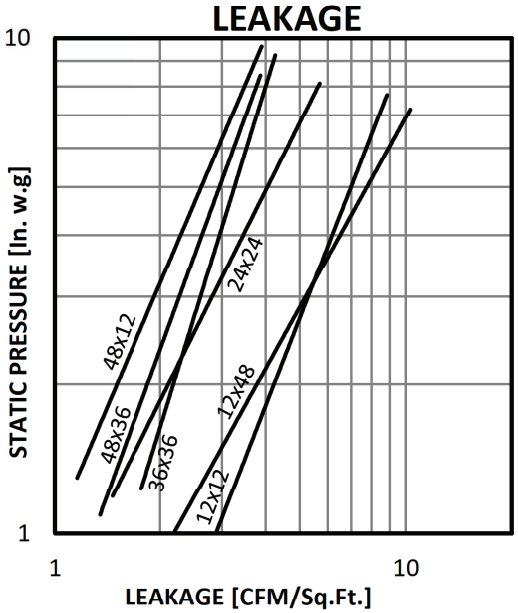
Alumavent Inc. certifies that the 3900 Series Insulated Control Dampers shown here are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance ratings and air leakage ratings.



Ratings Based on: AMCA Standard 500-D Intake Ducted Test Figure 5.3 Setup

DEFINITION OF LEAKAGE CLASSIFICATION				
CLASS	**LEAKAGE $ft^3/min/ft^2$ *($L/s/m^2$)***			
	1" *(0.25 kPa)*	**4" *(1.0 kPa)***	**8" *(2.0 kPa)***	**12" *(3.0 kPa)***
1A	3 *(15.2)*	N/A	N/A	N/A
1	4 *(20.3)*	8 *(40.6)*	11 *(55.9)*	14 *(71.1)*
2	10 *(50.8)*	20 *(102)*	28 *(142)*	35 *(178)*
3	40 *(203)*	80 *(406)*	112 *(569)*	140 *(711)*

3900 SERIES CONTROL DAMPER LEAKAGE RATING			
DAMPER SIZE Width x Height	**PRESSURE in w.g (kPa)**		
	1" *(0.25 kPa)*	**4" *(1.0 kPa)***	**8" *(2.0 kPa)***
12"x12" *(305x305 mm)*	1A	1	1
24"x24" *(610x610 mm)*	1A	1	1
36"x36" *(914x914 mm)*	1A	1	1
12"x48" *(305x1219 mm)*	1A	1	1
48"x12" *(1219x305 mm)*	1A	1	1
48"x36" *(1219x914 mm)*	1A	1	1



Leakage test was conducted in accordance with AMCA Standard 500-D-98. Holding torque applied was 6 in.-lbs./sq.ft on parallel blade dampers. AMCA Standard 500-D-98 states that air leakage is based on operation between 50°F *(10°C)* and 104°F *(40°C)*.

DWG. 3960-3961-3965 *AUGUST 2010*

DISTRIBUTION VENTIL-X-PERT INC.
9855, BOUL. LOUIS-H. LAFONTAINE
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SD - STANDARD WALL EXHAUST FANS

Efficient, low maintenance and easy to install.

Canarm/LFI's standard fans follow a tradition of quality in design, materials and construction. All our standard fans are developed to be efficient and economically priced. Fans are available in single, two and variable speed models. All variable speed standard fans use an energy efficient variable speed, dual voltage motor and blade combination.

To determine the proper Canarm/LFI fan for your applications, use the following formula.
Number of cubic feet in room / Number of minutes per air change = Required C.F.M. Capacity

EXAMPLE: A general office, (see chart) which requires an air change every ten minutes, would require the following fan capacity.
If office is 100' x 40' x 10' = 40,000 cubic ft; 40,000 cubic ft / 10 minutes per air change = 4000 Required C.F.M.

From the chart, you would select a fan that is rated at 4000 C.F.M. at 1/8" S.P. (Static Pressure)

Application	Minutes per Air Change	Application	Minutes per Air Change	Application	Minutes per Air Change	Application	Minutes per Air Change
Assembly Hall	7	Classroom	6	Garage	5	Projection Booth	2
Auditorium	10	Dance Hall	5	General Office	10	Summer Cooling	1
Barber Shop	6	Department Store	6	Gymnasium	8	Toilet	3
Basement	8	Dry Cleaning	5	Laundry	2	Transformer Room	1
Battery Room	1	Engine Room	6	Locker Room	3	Warehouse	12
Boiler Room	1	Factory	6	Machine Shop	8	Welding Shop	2
Bowling Alley	5	Forge Room	3	Plating Room	3		
Church	15	Foundry	4	Pressing Room	1		

FEATURES

- Available in 8" to 36" sizes.
- Single, two and variable speed models are available.
- All fans use a totally enclosed, thermally protected motor.
- The rugged steel welded box housing has a durable powder coated finish.
- Aluminum louver shutters are supported by long life nylon bushings (30" and 36" have PVC louvers).
- 8" - 24" models have heavy wire chrome plated OSHA guards on intake side of fan.
  30" & 36" models have grey powder coated guards.
- All fans are shipped completely assembled.



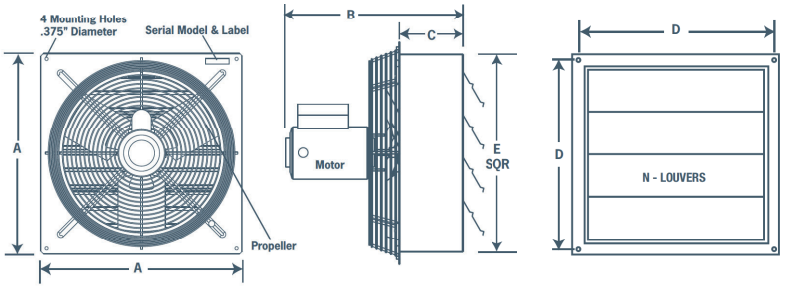
SPECIFICATIONS

MODEL	SPEED	BLADE DIAMETER	RPM	HP	VOLTAGE	AMPS (FLA)	WEIGHT (LBS)	dB(A) @5 ft	CFM @ STATIC PRESSURE				FRAMING DIMENSIONS
									0.00"	0.10"	0.125"	0.25"	
S8-B2	Two	8"	1600/1300	1/40	115	0.5	12	48	360/300	270/150	230/110	0	11" X 11"
S10-B2	Two	10"	1600/1300	1/40	115	0.5	13	56	690/580	590/460	570/390	0	13" X 13"
S12-E1	Single	12"	1625	1/4	115	1.8	28	63	1640	1540	1510	1390	15" X 15"
S12-E2	Two	12"	1725/1140	1/4	115	3.4	32	64	1650/1090	1550/950	1520/930	1390/0	15" X 15"
S12-EVD	Variable	12"	1700	1/3	115/230	5.0/2.5	32	60	1650	1540	1510	1390	15" X 15"
S14-E1	Single	14"	1625	1/4	115	1.8	30	67	2170	2070	2030	1860	17" X 17"
S14-E2	Two	14"	1725/1140	1/4	115	3.4	34	65	2180/1350	2080/1190	2060/1160	1890/0	17" X 17"
S16-E1	Single	16"	1625	1/4	115	1.8	33	68	2370	2270	2210	2060	19" X 19"
S16-E2	Two	16"	1725/1140	1/4	115	3.4	36	69	2380/1640	2280/1490	2230/1430	2070/0	19" X 19"
S16-EVD	Variable	16"	1700	1/3	115/230	5.0/2.5	36	63	2370	2270	2210	2063	19" X 19"
S18-F1	Single	18"	1625	1/3	115	4.0	37	73	3200	3090	3040	2920	21" X 21"
S18-F2	Two	18"	1725/1140	1/3	115	5.3/2.9	43	74	3200/2100	3090/1890	3040/1820	2920/0	21" X 21"
S18-FVD	Variable	18"	1700	1/3	115/230	3.8/1.9	45	74	3150	3050	2980	2860	21" X 21"
S20-F1	Single	20"	1625	1/3	115	4.0	41	77	3420	3220	3170	2920	23" X 23"
S20-F2	Two	20"	1725/1140	1/3	115	5.3/2.9	45	77	3440/2300	3240/2000	3180/1950	2930/0	23" X 23"
SD24-F1	Single	24"	1100	1/3	115	5.4	46	70	5000	4500	4300	3600	27" X 27"
SD24-GVD	Variable	24"	1100	1/3	115/230	4.4/2.2	56	72	5050	4910	4810	4400	27" X 27"
SD30-G1D	Single	30"	1100	1/3	115/230	4.4/2.2	72	82	8000	7000	6000	5000	33" X 33"
SD36-G1D	Single	36"	850	1/2	115/230	6.6/3.3	88	72	12000	11000	10500	9500	39" X 39"

NOTE: RPM Min (Minimum) is determined when louvres are opened one inch.
Note: Wind has a significant effect on exhaust fans. A 10 mph wind creates a 0.05" pressure against the fan. A 20 mph wind creates 0.20" pressure and 30 mph a 0.45" pressure. These pressures are in addition to the static pressure in the building. Wind blocks or hoods should be included in all designs where fans will be subjected to winds above 10 mph.

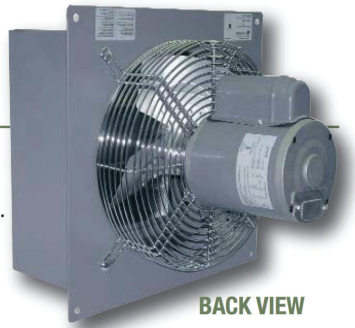
DIMENSIONS

FAN SIZE	A X A SQUARE	B	C	D (c/c)	E	N
8"	13 1/4"	10"	4"	12"	10 3/4"	2
10"	15 1/4"	10"	4"	14"	12 3/4"	2
12"	17 1/4"	14"	6"	16"	14 3/4"	3
14"	19 1/4"	14"	6"	18"	16 3/4"	3
16"	21 1/4"	14"	6"	20"	18 3/4"	4
18"	23 1/4"	15"	6"	22"	20 3/4"	4
20"	25 1/4"	16"	6"	24"	22 3/4"	5
24"	29 1/4"	16"	6"	28"	26 3/4"	5
30"	35 1/4"	19"	6"	34"	32 3/4"	16
36"	41 1/4"	16 1/2"	6"	40"	38 3/4"	20

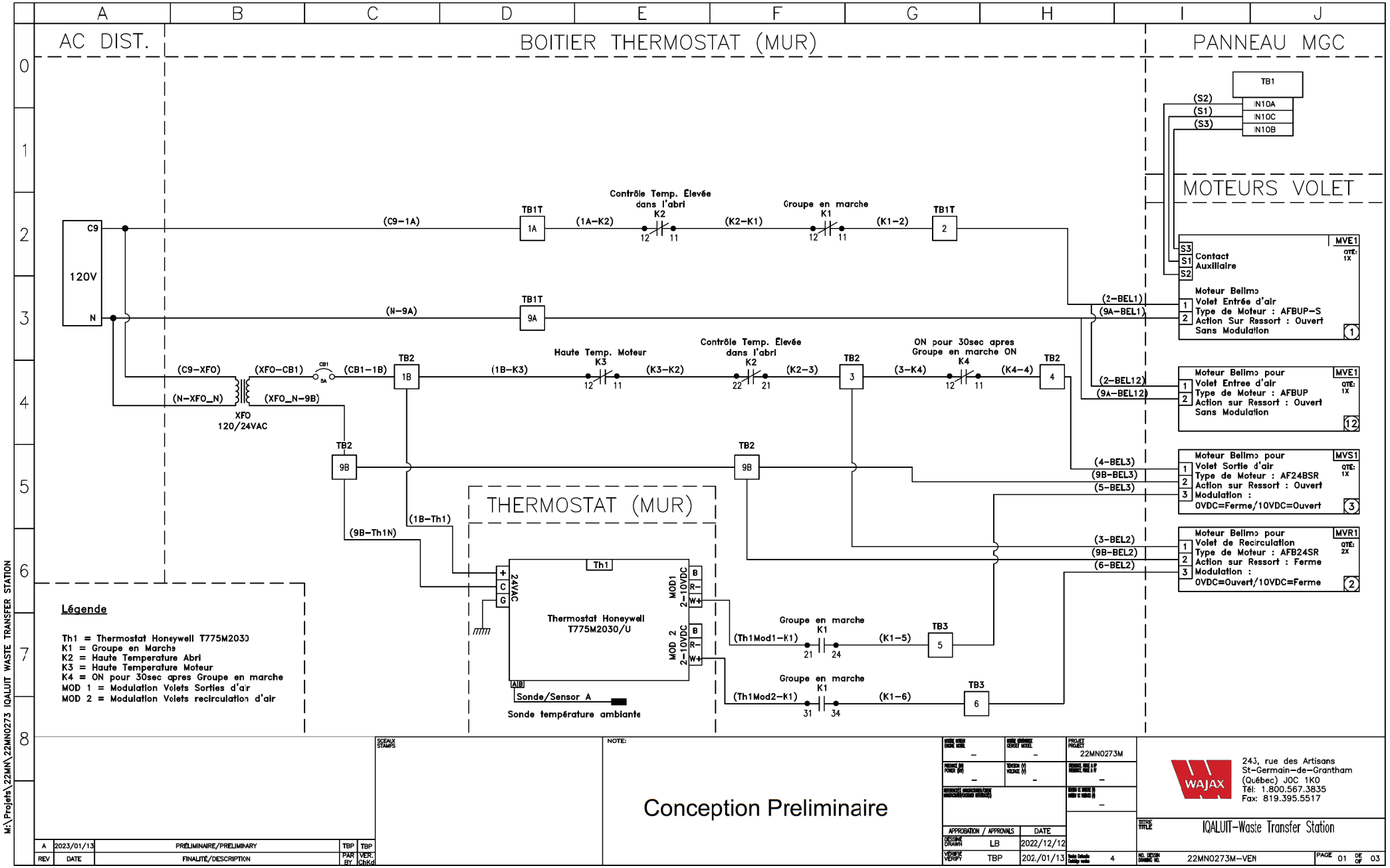


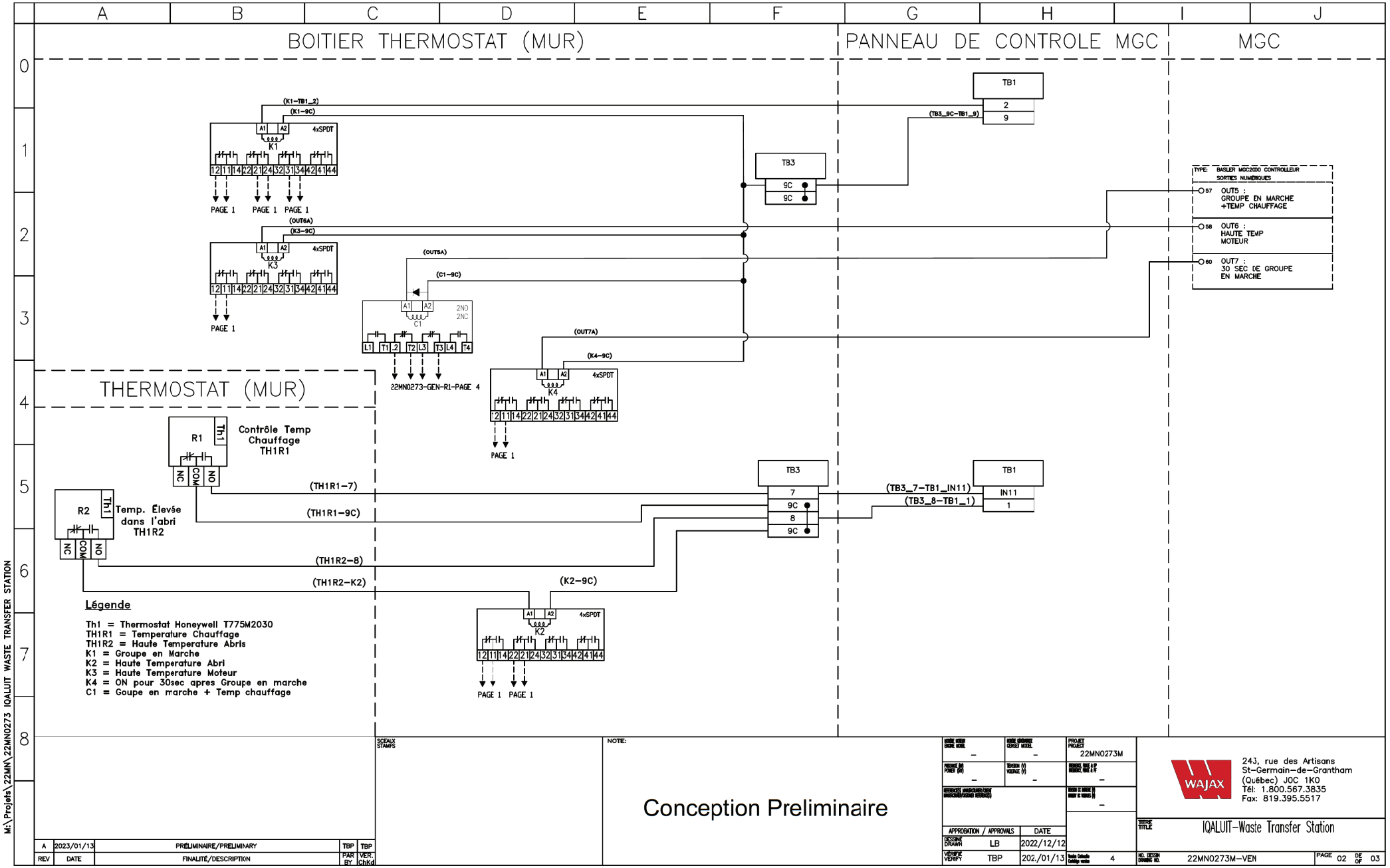
ACCESSORIES

- Grey plastic weather hood
- Galvanized metal hood
- MC type & wet locations controls.



For a complete listing on all available accessories, see page C15.
For a complete listing of all available hoods, see page C11.
For all available control options, see Controls & Thermostats tab.


AC DIST.
BOITIER THERMOSTAT (MUR)
PANNEAU MGC
C9
120V
N
(C9-1A)
TB1T
1A
(1A-K2)
Contrôle Temp. Élevée dans l'abri
K2
12
11
(K2-K1)
Groupe en marche
K1
12
11
(K1-2)
TB1T
2
(N-9A)
TB1T
9A
(2-BEL1)
(9A-BEL1)
(C9-XFO)
(XFO-CB1)
CB1
5A
(CB1-1B)
TB2
1B
(1B-K3)
Haute Temp. Moteur
K3
12
11
(K3-K2)
Contrôle Temp. Élevée dans l'abri
K2
22
21
(K2-3)
TB2
3
(3-K4)
ON pour 30sec apres Groupe en marche ON
K4
12
11
(K4-4)
TB2
4
(2-BEL12)
(9A-BEL12)
(N-XFO_N)
(XFO_N-9B)
XFO
120/24VAC
TB2
9B
TB2
9B
(4-BEL3)
(9B-BEL3)
(5-BEL3)
THERMOSTAT (MUR)
(1B-Th1)
(9B-Th1N)
(3-BEL2)
(9B-BEL2)
(6-BEL2)
Th1
+
C
G
24VAC
MOD1
2-10VDC
B
R-
W+
MOD 2
2-10VDC
B
R-
W+
Thermostat Honeywell
T775M2030/U
A|B
Sonde/Sensor A
Sonde température ambiante
Groupe en marche
K1
(Th1Mod1-K1)
21
24
(K1-5)
TB3
5
Groupe en marche
K1
(Th1Mod2-K1)
31
34
(K1-6)
TB3
6
TB1
IN10A
IN10C
IN10B
(S2)
(S1)
(S3)
MOTEURS VOLET
MVE1
QTÉ: 1X
S3
S1
S2
Contact
Auxiliaire
Moteur Belimo
Volet Entrée d'air
Type de Moteur : AFBUP-S
Action Sur Ressort : Ouvert
Sans Modulation
1
2
MVE1
QTÉ: 1X
Moteur Belimo pour
Volet Entree d'air
Type de Moteur : AFBUP
Action sur Ressort : Ouvert
Sans Modulation
12
MVS1
QTÉ: 1X
Moteur Belimo pour
Volet Sortie d'air
Type de Moteur : AF24BSR
Action sur Ressort : Ouvert
Modulation :
0VDC=Ferme/10VDC=Ouvert
3
MVR1
QTÉ: 2X
Moteur Belimo pour
Volet de Recirculation
Type de Moteur : AFB24SR
Action sur Ressort : Ferme
Modulation :
0VDC=Ouvert/10VDC=Ferme
2
Légende
Th1 = Thermostat Honeywell T775M2030
K1 = Groupe en Marche
K2 = Haute Temperature Abri
K3 = Haute Temperature Moteur
K4 = ON pour 30sec apres Groupe en marche
MOD 1 = Modulation Volets Sorties d'air
MOD 2 = Modulation Volets recirculation d'air
SCEAUX STAMPS
NOTE:
Conception Preliminaire
PROJET PROJECT
22MN0273M
APPROBATION / APPROVALS
DATE
DESSINÉ DRAWN
LB
2022/12/12
VÉRIFIÉ VERIFY
TBP
202./01/13
4
WAJAX
243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
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Fax: 819.395.5517
TITRE TITLE
IQALUIT-Waste Transfer Station
NO. DESSIN DRAWING NO.
22MN0273M-VEN
PAGE 01 DE OF 03
A
2023/01/13
PRÉLIMINAIRE/PRELIMINARY
TBP
TBP
REV
DATE
FINALITÉ/DESCRIPTION
PAR BY
VER. ChKd
M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION



REV	DATE	FINALITÉ/DESCRIPTION	PAR BY	VER. ChKd
A	2023/01/13	PRÉLIMINAIRE/PRELIMINARY	TBP	TBP

SCEAUX STAMPS

NOTE:

APPROBATION / APPROVALS		DATE
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VÉRIFIÉ VERIFY	TBP	202./01/13

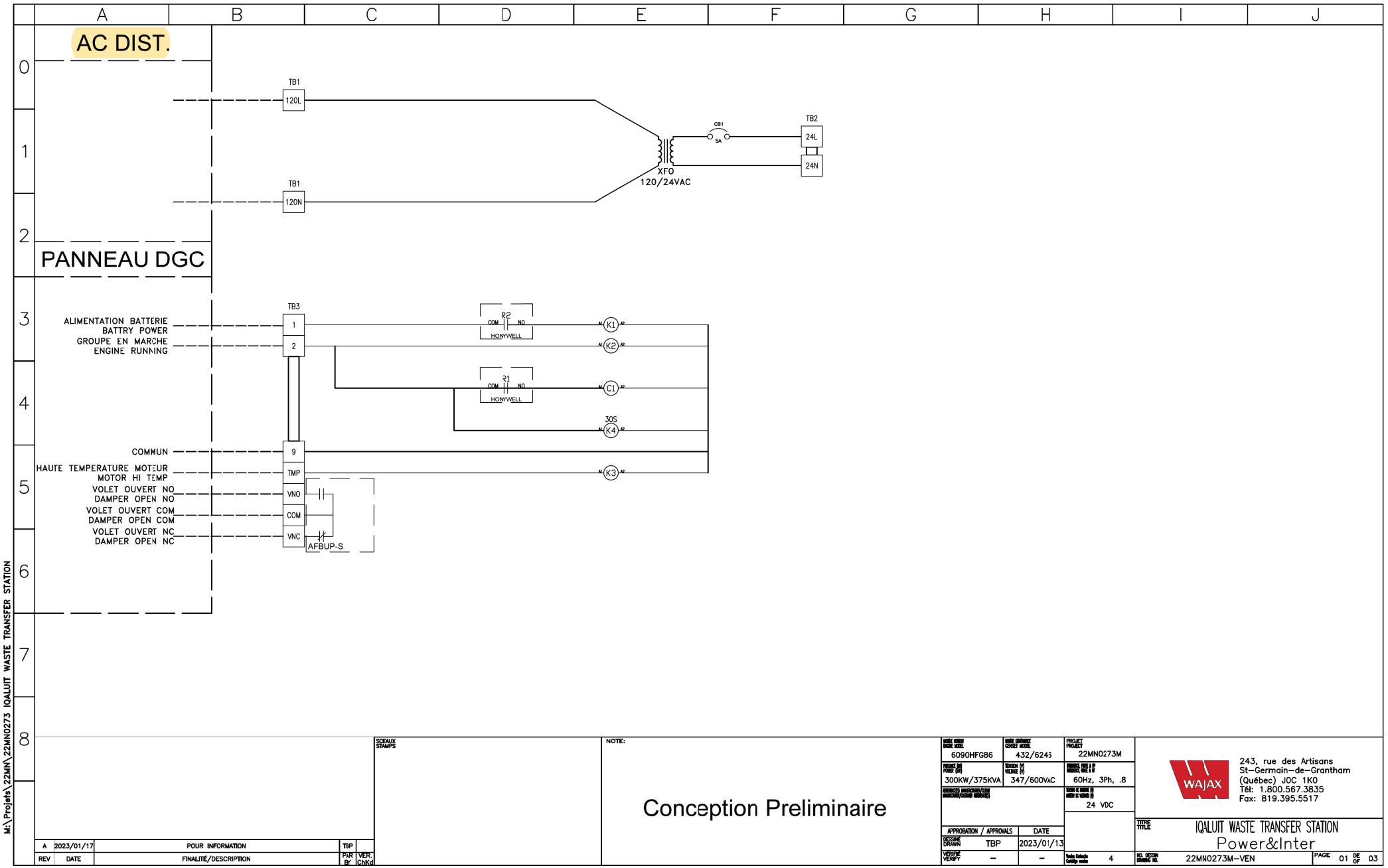
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TITRE TITLE: IQALUIT-Waste Transfer Station

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PAGE 02 DE OF 03



M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION

REV	DATE	FINALITÉ/DESCRIPTION	PAR BY	VER. ChKd
A	2023/01/17	POUR INFORMATION	TBP	

SCEAUX STAMPS

NOTE:

Conception Preliminaire

MODÈLE MOTEUR ENGINE MODEL	6090HFG86
MODÈLE GÉNÉRATRICE GENSET MODEL	432/6245
PUISSANCE (kW) POWER (kW)	300KW/375KVA
TENSION (V) VOLTAGE (V)	347/600VAC
PROJET PROJECT	22MN0273M
FRÉQUENCE, PHASE & FP FREQUENCY, PHASE & PF	60Hz, 3Ph, .8
TENSION DE CHARGE DE LA BATTERIE BATTERY CHARGE VOLTAGE	24 VDC
Modèle Caterpillar Catalogue number	4

APPROBATION / APPROVALS	DATE
DESSINÉ DRAWN TBP	2023/01/13
VÉRIFIÉ VERIFY –	–

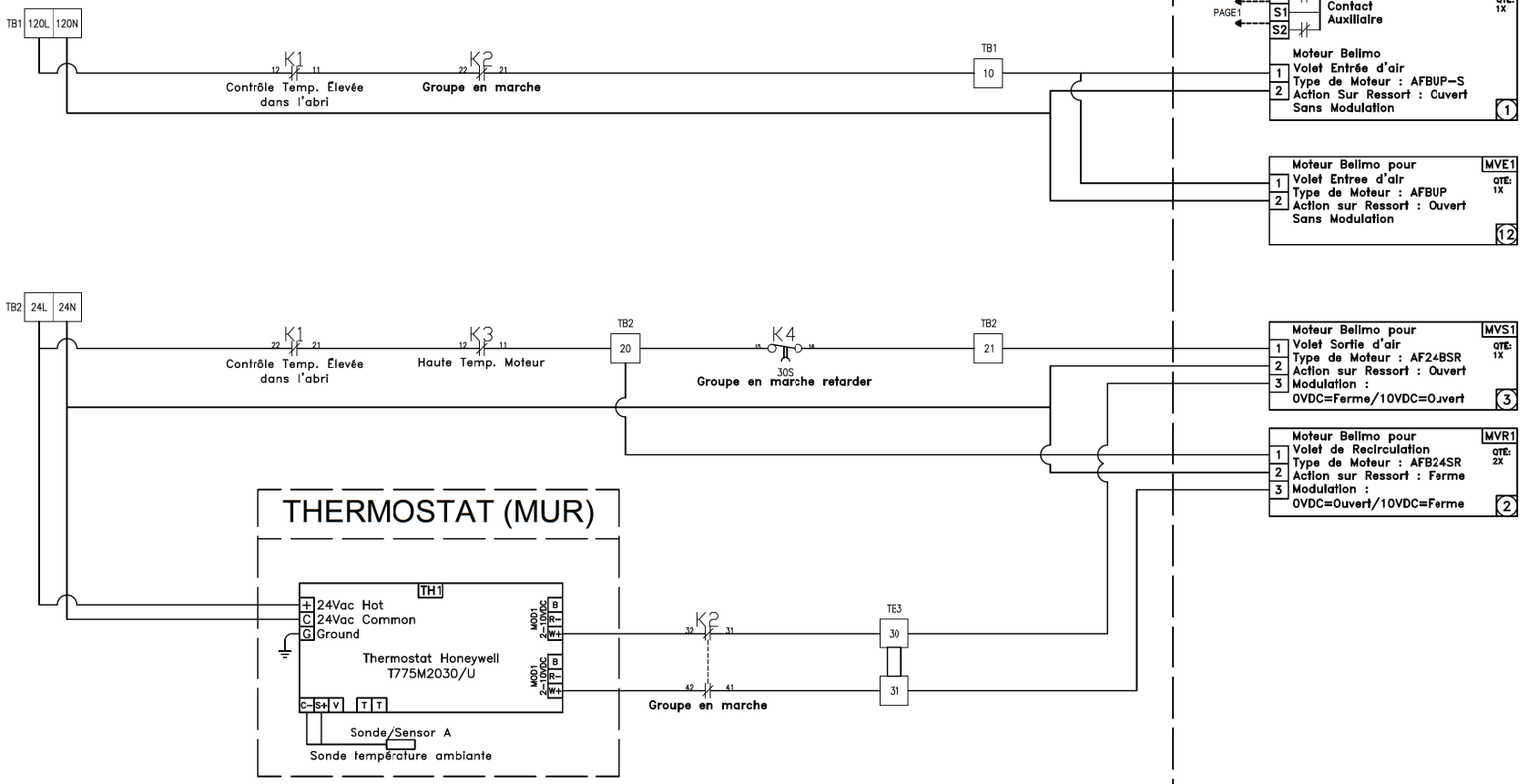
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TITRE TITLE: IQALUIT WASTE TRANSFER STATION
Power&Inter

NO. DESSIN DRAWING NO.: 22MN0273M-VEN

PAGE 01 DE OF 03

VENTILLATION ENCLOSURE



NOTE:

Conception Preliminaire

REV	DATE	FINALITÉ/DESCRIPTION	PAR BY	VER. ChKd
A	2023/01/17	POUR INFORMATION	TBP	

SCEAUX STAMPS

MODÈLE MODEL	6090HFG86
MODÈLE GÉNÉRIQUE GENERIC MODEL	432/6246
PUISSANCE (W) POWER (W)	300KW/375KVA
TENSION (V) VOLTAGE (V)	347/600VAC
	60Hz, 3Ph, .8
	24 VDC

APPROBATION / APPROVALS		DATE
DESSINÉ DRAWN	TBP	2023/01/13
VÉRIFIÉ VERIFY	–	–

Nombre Colonnes Catalogue number 4

PROJET PROJECT 22MN0273M

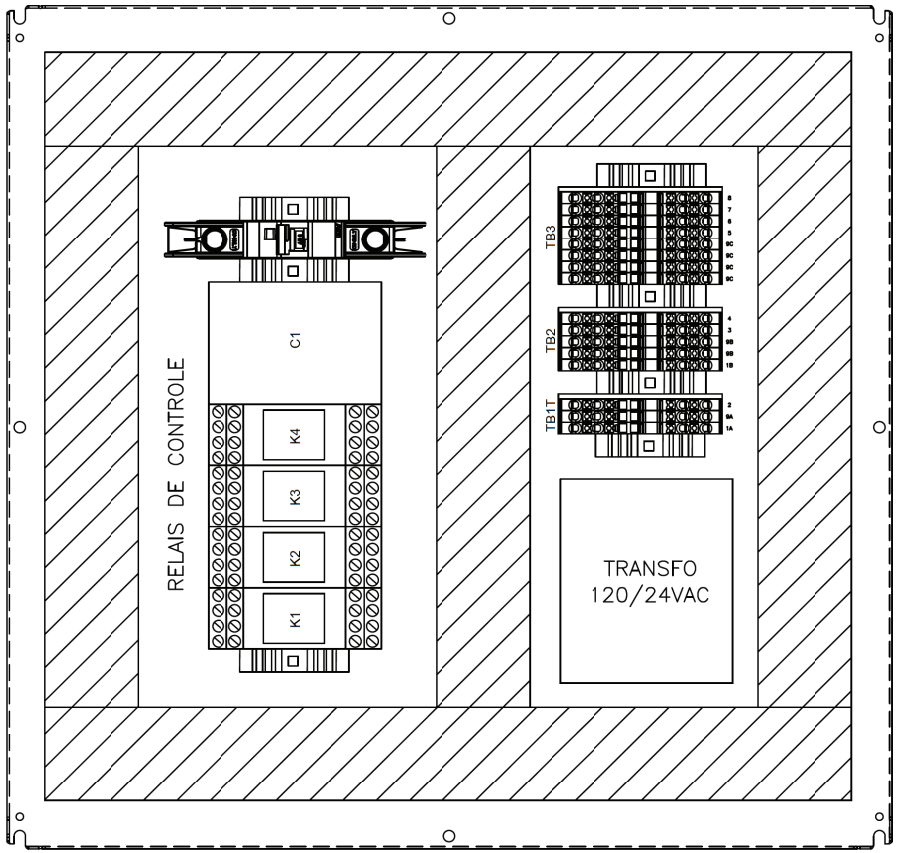
WAJAX
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St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE TITLE: IQALUIT WASTE TRANSFER STATION
Control

NO. DESSIN DRAWING NO. 22MN0273M-VEN

PAGE 02 DE OF 03

M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION



HONEYWELL
T775M2030/U

ID	Qty,	#PIECES	MAKER	DESCRIPTION
1	1		HAMMOND	Panel 18" x 10"
2	1		HAMMOND	Back plante 18" x 18"
3	TQR	N/A	N/A	Goulotte 2"
4	12	3031306	PHOENIX CONTACT	Quat terminal 2.5"
5	3	3030514	PHOENIX CONTACT	Terminal ending
6	12	318108	PHOENIX CONTACT	label terminal
7	6	3022218	PHOENIX CONTACT	Stopper
8	1	FS100PR	HPS	Transformer 10VA 120VAC-24VAC
9	1	SU201MC05	ABB	Disjoncteur 2A 1 pole
10	3	CRM024DC4LSS42H	ABB	Relay 4x SPDT 6S, 24VDC
11	1	CT-ERC.12	ABB	Relai ON-DELAY
12	1	CA7-16E-M22-24E	SPRECHER + SCHUH	Contact 2NO|2NC 30A 1½hp/120V, Coil 24VDC

M:\Projets\22MN\22MN0273 IQALUIT WASTE TRANSFER STATION

REV	DATE	FINALITÉ/DESCRIPTION	PAR BY	VER. ChKd
A	2023/01/17	POUR INFORMATION	TBP	

SCEAUX
STAMPS

NOTE:

Conception Preliminaire

ENGINE MODEL / MODÈLE DU MOTEUR	6090HFG86
GENSET MODEL / MODÈLE GÉNÉRATRICE	432/6246
POWER (kW) / PUISSANCE (kW)	300KW/375KVA
VOLTAGE (V) / TENSION (V)	347/600VAC
	60Hz, 3Ph, .8
	24 VDC
APPROBATION / APPROVALS	DATE
DRAWN / DESSINÉ	TBP 2023/01/13
VERIFY / VÉRIFIÉ	– –
Wajax Cobourg version	4

PROJECT / PROJET: 22MN0273M

WAJAX

243, rue des Artisans
St-Germain-de-Grantham
(Québec) J0C 1K0
Tél: 1.800.567.3835
Fax: 819.395.5517

TITRE / TITLE: IQALUIT WASTE TRANSFER STATION
FootPrint

NO. DESSIN / DRAWING NO.: 22MN0273M-VEN

PAGE: 03 DE / OF 03

5.4 ACCESSORIES

T775 Electronic Standalone Controller

Honeywell



WE BUILT IT, SO YOU DON'T HAVE TO

No Assembly Required

Built-In Control

With The T775, You'll Know You Have Exactly What You Need, Because All The Features Are Self-Contained

Some controllers require you to piece together separate modules to get the control features you want, and those added relays can, well, add up. So can the added LCD display, an added transformer module and more. The Honeywell T775 Electronic Standalone Controller puts an end to add-on costs. All the features you need for a variety of applications are built right into the T775, including the LCD display. You won't have to worry about having the right modules in stock or needing to piece them together. The T775 has it all.

It's All Inside

Easy-To-Use Graphical Interface — Operating the new T775 is as easy as operating your cell phone. The easy-to-use, intuitive programming will save you time on every job.

Internal Time Clock Scheduler — The Setback and Disable Output options, controlled by the built-in scheduler or digital input, will help save energy during unoccupied times and give you more control of the equipment without needing to purchase an additional time clock.

Up To Two Independent Modulating Outputs — Each output can be individually configured for 0-10 Vdc, 2-10 Vdc, 4-20 mA or Series 90, so a single device can handle many field requirements to save you time selecting the right control for the job.

NEMA 4X Enclosure Option — Certain models are offered with NEMA 4X enclosures to protect them from water and corrosion. They can be installed in animal confinement areas, green houses, washdown areas, swimming pools and other similar locations, giving you the control you need for harsh locations.

Modulating High Or Low Limit Control — If you need to protect your coil from freezing or your equipment from overheating, models offering this feature give you the ability to adjust your control temperature at sensor A to protect equipment at sensor B. You get consistent control while still protecting your equipment.

Optional Configurable Integral And Derivative Times — Standard on every device, this feature delivers pinpoint control. PI or PID control on modulating outputs is set up by default to behave just like the previous T775 Series 1000, but now you can adjust reaction times and behavior, giving you more control.

Reset Models With Simplified Setup — Reset programming has never been easier. Simply enter the high and low control temperatures and the corresponding high and low outdoor temperatures, and you're done. As your outside temperature gets colder, the setpoint temperature automatically adjusts to save energy.

Configurable Minimum Off Time — If needed, setting a minimum off time can protect equipment and reduce the need for a separate time delay device.

Sensor Calibration — Calibrate input sensors up to +/-10° F. This can be used to compensate for resistance drops in wire leads, to offset the input temperature for sensor location and more.

Fewer Models — Fourteen T775 models replace 38 Series 1000 models, so you'll reduce inventory and eliminate the headache of trying to choose the right model.

Special Models

Several T775 models are designed to ensure your control needs can still be met with a single unit for special applications.

Universal Model To Control Pressure, Humidity Or Temperature — The T775U Universal model has an easy setup for configuring control of pressure or humidity with a 0-5Vdc, 0-10 Vdc or 4-20 mA input. Control humidity with % RH displayed, CO2 with ppm displayed, or control pressure with in. w.c., psi, Pa, or kPa displayed. Outputs include two modulating and two relay outputs that can each have their own setpoint. The T775U even offers the ability to reset the output based on outdoor temperature — handy when you need to reduce window condensation when setting humidity levels. With the T775U, you'll enjoy complete versatility in a single control that gives you the freedom to do what the job requires.

Special Sequencing Model For Staging Up To 12 Relays With Up To Two Setpoints — The sequencer model has four stages, plus you can add up to two optional 4-stage expansion relay modules for 8- or 12-stage operation. The flexible setup allows you to configure these stages for heating, cooling or both. Because sequencer models operate up to 12 stages, you can control multiple low-mass boilers, chillers, electric heat and other equipment from a single controller.

Special Boiler Model — The T775 boiler model offers features including dedicated pump output, staging for up to 12 relays, digital output alarm, pump exercise, pump pre-purge and post-purge, warm weather shut-down, built-in scheduler, displayed run time, equal run time, first-on, first-off and more. With a single control, you can handle multi-boiler applications. The T775 boiler model can be used on chillers as well.

T775 Electronic Remote Temperature Controllers

Models for Standard Applications

Product Number	Description	Replaces	Relay Outputs	Analog Outputs 4-20 mA, 0-10 Vdc, 2-10 Vdc, & Series 90	Floating Output[1]	Sensor Inputs Available	# Sensors Included [2]
T775A2009	Standard	T775A1001	1 SPDT			1	1
T775B2016	Standard-NEMA 4X		2 SPDT		1	2	1
T775B2032	Standard	T775A1019, T775B1000	2 SPDT		1	2	1
T775B2024	Standard-NEMA 4X	T775C1009, T775D1008	4 SPDT		2	2	1
T775B2040	Standard	T775A1027, T775A1035, T775B1018, T775B1026, T775B1040	4 SPDT		2	2	1
T775M2006	Modulating		None	2		2	1
T775M2022	Modulating-NEMA 4X		2 SPDT	2		2	1
T775M2048	Modulating	T775E1015, T775E1023, T775E1056, T775E1064, T775E1098	2 SPDT	2		2	1
T775M2014	Modulating-NEMA 4X	T775G1005, T775G1013, T775G1021, T775G1039	4 SPDT	2		2	1
T775M2030	Modulating	T775E1114, T775F1022, T775F1055, T775F1089	4 SPDT	2		2	1
T775R2035	Reset option	T775J1001, T775J1076	2 SPDT		1	2	2
T775R2043	Reset option	T775J1019, T775J1027, T775J1035	None	2		2	2
T775R2027	Reset option	T775J1043, T775J1050, T775J1068	2 SPDT	2		2	2
T775R2001	Reset option		4 SPDT		2	2	2
T775R2019	Reset option		4 SPDT	2		2	2

[1] One floating output eliminates two relay outputs.
[2] 50021579-001 included with non-NEMA 4X models, and T775-SENS-WR included with NEMA 4X models.

Models for Special Applications

Product Number	Description	Replaces	Relay Outputs	Analog Outputs 4-20 mA, 0-10 Vdc, 2-10 Vdc, & Series 90	Digital Output	Dedicated Pump Output	Sensor Inputs Available	# Sensors Included	Expandable[1]	Output Reset
T775P2003[2]	Special boiler with reset		4 SPDT		1	•	3	3	•	•
T775L2007	Stage sequencer with reset option		4 SPDT[3]				2	1	•	•
T775U2006	Universal — humidity, pressure, etc.	H775A1006, H775A1022, H775A1048, H775A1063, H775B1005, H775C1004, H775D1003, H775E1002	2 SPDT	2			2[4]			•
T775U2016	Universal - Control to sensor A (universal input) and Sensor B (temp) independently.		2 SPDT	2			2[4]			•
T775S2008	Relay expansion module		4 SPDT	Use with T77P or T775L						

[1] 4 or 8 more relays possible with T775S2008 relay expansion module(s).
[2] Includes dedicated pump output, equal run time, pump pre-purge and post-purge, WWSD and more.
[3] Up to 2 independent non-sequenced relays are also available.
[4] First input configurable for temperature 0-5Vdc, 0-10 Vdc, or 4-20 mA; second input is configurable for temperature only.



Make The Switch

Whether you're replacing an older control or working on a new project, Honeywell T775 controls are a smart choice.



T775 Electronic Remote Temperature Controllers

Compatible Components

	Part Number	Description	Application	Use With
Temperature	50021579-001	Standard temperature sensor for indoor applications	Monitoring temperature of return air, discharge air and mixed air	All T775 Series 2000 models
	T775-SENS-WR	Water-resistant sensor with 5-ft. leads		
	T775-SENS-WT	Water-tight sensor with 6-ft. leads		
	T775-SENS-OAT	Outdoor air temperature sensor	Outdoor air for reset	
	C7031D2003	5-in. immersion sensor (comes with immersion well, 50001774-001)	Hot or chilled water	
	C7031J2009	12-in. duct averaging sensor with four elements	Duct discharge air	
	C7046D1008	8-in. duct probe with mounting flange	Duct discharge air mounts on flat duct or plenum surface	
	C7100D1001	12-in. fast response, duct averaging sensor with flange	Averaging duct discharge air for use in troubleshooting	
	C7130B1009	Room mount sensor	Wall mount air temperature sensor	
Humidity	H7625A/B	Humidity transmitter, 2% RH accuracy, wall mount or duct mount	Humidity	T775U2006, T775U2016
	H7635A/B/C	Humidity transmitter, 3% RH accuracy, wall mount, duct mount or outdoor mounting		
	H7655A	Humidity transmitter, 5% RH accuracy, wall mount		
	H7655B	Humidity transmitter, 5% RH accuracy, duct mount		
Pressure	P7640A	Differential pressure transmitter, 0-1.0, 0-0.5, 0-0.25, or 0-0.1 in. w.c., uni- or bi-directional, panel mount, with display	Duct, room and building static pressure, clean rooms, hospitals, fume hoods and computer rooms	
	P7640U	Differential pressure transmitter, 0-10, 0-5, 0-2.5, 0-1, 0-0.5, 0-0.25, or 0-0.1 in. w.c., uni- or bi-directional, panel or duct mount, with and without display		
CO_2	C7232	Non-Dispersive Infrared (NDIR) carbon dioxide sensor, 0-2,000 ppm adjustable, 0/2-10 Vdc or 0/4 to 20 mA adjustable, one adjustable SPST relay output, wall or duct mount, LCD option and Honeywell logo option	Ventilation and air conditioning systems to control the amount of fresh outdoor air supplied to maintain acceptable levels of CO_2 in the space (cemand control ventilation)	
	C7632	Non-Dispersive Infrared (NDIR) carbon dioxide sensor, fixed 0-2,000 ppm, fixed 0-10 Vdc output, wall or duct mount and Honeywell logo option		

Learn More

For more information on Honeywell T775 Electronic Standalone Controllers, call **1-800-466-3993** or visit **customer.honeywell.com**.

Automation and Control Solutions

In the U.S.:
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422-3992

In Canada:
Honeywell Limited
35 Dynamic Drive
Toronto, Ontario M1V 4Z9

In Latin America:
Honeywell
9315 N.W. 112th Avenue
Miami, FL 33178
www.honeywell.com

63-9632 PR
April 2009

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E³Point PRODUCT SUBMITTAL

Toxic and Combustible Gas Detector
Standalone Platform (Single or Dual-Gas Monitoring)

ORDERING INFORMATION

Single-Gas or Dual-Gas Configuration: Base Unit, Surface-Mount
Base unit only; sensor cartridge sold separately
Remote Sensor sold separately for Dual-Gas configuration

Model Number	Order Number	Description
☐ E3SA	1309A0042	E³Point, Surface-mount, 4-20mA, 24Vac/dc, -40 to 50°C (-40 to 122°F)
☐ E3SAH	1309A0043	E³Point, Surface-mount, 4-20mA, 120Vac, -40 to 50°C (-40 to 122°F)

Stand-Alone Platform, Duct-Mount

Model Number	Order Number	Description
☐ E3DA	1309A0049	E³Point, Duct-mount, 4-20mA, 24Vac/dc, -40 to 50°C (-40 to 122°F)

Sensor Cartridges

Model Number	Order Number	Description
☐ E3SCO	1309A0038	CO Cartridge -20 to 50°C (-4 to 122°F), Carbon Monoxide
☐ E3NO2	1309A0037	NO_2 Cartridge -40 to 50°C (-40 to 122°F), Nitrogen Dioxide
☐ E3H2S	1309A0035	H_2S Cartridge -40 to 50°C (-40 to 122°F), Hydrogen Sulfide
☐ E3H2	1309A0039	H_2 Cartridge -40 to 50°C (-40 to 122°F), Hydrogen
☐ E302	1309A0036	O_2 Cartridge -40 to 50°C (-40 to 122°F), Oxygen
☐ E3M	1309A0040	CH_4 Cartridge -40 to 50°C (-40 to 122°F), Methane
☐ E3P	1309A0041	C_3H_8 Cartridge -40 to 50°C (-40 to 122°F), Propane

Remote Sensors (always sold with sensor cartridge included)

Model Number	Order Number	Description
☐ E3SRMCO	1309A0060	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Carbon Monoxide
☐ E3SRMNO2	1309A0057	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Nitrogen Dioxide
☐ E3SRMH2S	1309A0058	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Hydrogen Sulfide
☐ E3SRMH2	1309A0059	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Hydrogen
☐ E3SRMO2	1309A0056	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Oxygen
☐ E3SRMM	1309A0061	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Methane
☐ E3SRMP	1309A0062	E³Point, Remote Sensor, -20 to 50°C (-4 to 122°F), Propane

EXAMPLES OF HOW TO ORDER

To order a stand-alone version, surface-mount, analog, dual-gas CO + NO_2, -20 to 50°C (-4 to 122°F): Order E3SA (1309A0042) + E3SCO (1309A0038) + E3SRMNO2 (1309A0057)

To order a stand-alone version, duct-mount, analog, propane detector, -40 to 50°C (-40 to 122°F): Order E3DA (1309A0049) + E3P (1309A0041)

SPECIFICATIONS

General Specifications

Uses

Wall or duct-mounted gas detector for monitoring carbon monoxide (CO), nitrogen dioxide (NO_2), oxygen (O_2), methane (CH_4), hydrogen (H_2), hydrogen sulphide (H_2S), and propane (C_3H_8), installed as a standalone device with single-gas or dual-gas monitoring.

Size	20.56 x 14.90 x 6.72cm (8.09 x 5.87 x 2.65") (H x W x D); Remote Sensor: 3.5 x 4.5 x 6.5 cm (1.36 x 1.75 x 2.56")
Power Requirement	24 Vac nominal (17-27Vac), 50/60 Hz, 0.35A; 24Vdc nominal (20-38Vdc); with remote sensor: 7 W max.
Optional Main AC Input	120Vac nominal, +/- 10% (with on-board transformer)
Relay Output	2 DPDT relays, 5A @ 250Vac; 5A @ 30Vdc
Communications	4-20mA
Operating Environment	Commercial, Indoor, Extreme Temperature Environments
Operating Temperature	H_2S, NO_2, O_2, CH_4, H_2, C_3H_8: -40 to 50°C (-40 to 122°F) CO: -20 to 50°C (-4 to 122°F); future available CO version: -40 to 50°C (-40 to 122°F)
Sensor Type	Electrochemical cell (CO, NO_2, H_2S, O_2); catalytic (CH_4, H_2, C_3H_8)
Display	8 character, 2 line backlit LCD
Visual Indicators	Green LED: Power Amber LED 1: Alarm/Fault Amber LED 2: Alarm/Fault
Audible Alarm	>85 dBA at 3 m (10 ft)
Accuracy	+/- 3% of full scale @ 25 C

Detection Ranges and Alarm Levels

Gas	Resolution	Range	Alarm A	Alarm B	Alarm C
CO (Carbon monoxide)	1 ppm	0-250 ppm	25 ppm	200 ppm	225 ppm
H_2S (Hydrogen sulfide)	0.1 ppm	0-50 ppm	10 ppm	15 ppm	20 ppm
NO_2 (Nitrogen dioxide)	0.1 ppm	0-10 ppm	0.7 ppm	2 ppm	9 ppm
O_2 (Oxygen)	0.1% vol.	0-25% vol.	19.5% vol.	22% vol.	22.5% vol.
H_2 (Hydrogen)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL
CH_4 (Methane)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL
C_3H_8 (Propane)	0.5% LEL	0-100% LEL	25% LEL	50% LEL	90% LEL

Enclosure	Polycarbonate
Certification	CSA C22.2 No. 61010-1, UL 61010-1; FCC part 15; ICES-003 issue 4

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Wall Mounting

Mounting is usually done on concrete walls or columns, but the unit can be mounted on any vertical surface. The housing is designed with spacers on the back to allow moisture to flow behind the housing without affecting the unit.

- Mounting holes are located inside the housing. Open the unit to access mounting holes.
- Drill and mark the holes, as shown:
  - Width 11.1 cm (4 3/8") apart (if mounting directly to wall)
  - Height 8.3 cm (3.281") for electrical boxes

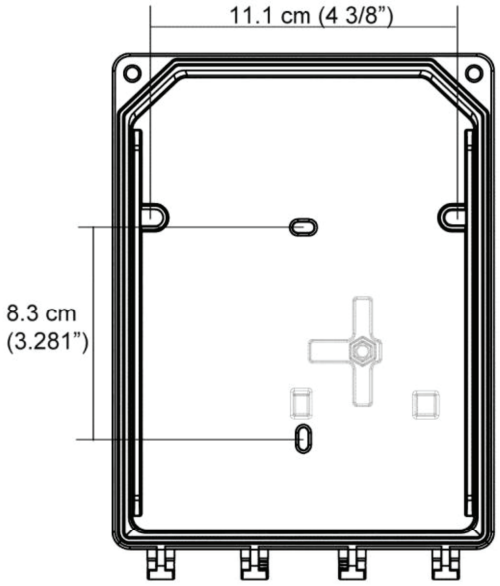


Figure 1. Unit Dimensions

- Pre-drill mounting holes from the back of the unit as needed.
- Securely mount the unit using the appropriate screws and anchors. The unit is designed to use #6 screws. Tighten to 8.7 in-lb (1 Nm) maximum.
- Close the unit cover and tighten screws to 29.7 in-lb (3 Nm).
- Do not remove PC board when removing knockouts.
- Knockout on back is not for conduit entry.

General Mounting Considerations:

- Must be easily accessible for calibration and maintenance.
- Mount the sensor close to the potential leak source for fastest possible leak detection.
- If personnel protection is the primary application, mount in the "breathing zone" (1–1.5m from the ground, within the range of a person's respiration area).
- Protect the sensor from water, excessive humidity, and washdown.
- Take air movement and ventilation patterns into account.
- To prevent electrical interference, keep sensor and wire runs away from mercury vapor lights, variable speed drives, and radio repeaters.
- Protect the sensor from physical damage (fork lifts, etc.).
- Do not mount the sensor over a door in a refrigerated area.
- For highly critical locations, more than one sensor should be installed in each room.

Very Important:

- **Never** mount the sensor flat on a ceiling.
- **Never** mount the sensor on a vibrating surface.

Duct Mounting

Special Duct Mount Installation

This option works best for airflows between 500–4000 ft/min. The E3Point must be duct mounted using the custom box provided with the duct mount version. All of the components housed within the box are factory assembled.

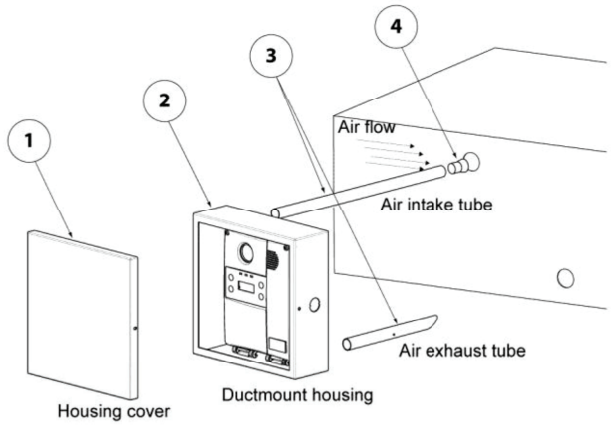


Figure 2. Duct Mounting

1. Select the location for the unit.
2. Measure and mark the holes for intake and exhaust tubes.
3. Drill the holes for the sampling tubes (making sure holes are large enough for plug).
4. Affix intake and exhaust tubes to the mounting box.
5. Insert the tubes into the holes on the ducting.
6. Screw the mounting box onto the duct.
7. Remove the desired knock out (depending on where cables will enter box) and affix appropriate conduit.
8. Run wiring through the conduit and duct mount box to the unit. Connect wires according to the Wiring Details.
9. Screw cover onto the E3Point and replace the cover on the mounting box.

Ensure to orient the air holes on the air intake tube to face the airflow.

Wiring

Guidelines

Electrical wiring must comply with all applicable codes. Operating conditions and site equipment that may be involved should be discussed with local operating personnel to determine if any special needs should be considered.

Ground the shield at the main control panel. Connect the shield wire in the sensor terminal block labeled ***shield***. Tape all exposed shield wire at the sensor to insulate it from the enclosure.

Electrical Power: 24 VDC/VAC nominal, 0.35 amp maximum. Either AC or DC may be connected to the terminal block.

Output: Circuit board mounted sensor provides a linear 4-20 mA output. Monitoring equipment may have a maximum impedance of 500 ohms.

Wire: Signal wiring should be done with #20-24 AWG shielded twisted pair cable Belden 9841 or similar. Network units should have no more than 2,000 ft (600 m) of #22 AWG wire. Smaller gauge sizes are limited by the same resistance limit. Power wiring should be sized by local codes, but never less than #20 AWG. 120 VAC wiring should be #14 or #12 AWG.

Wiring Diagrams

Circuit Board Connections

- Connect the power wiring to terminal J1
- Connect Communication wiring to terminal J2
- Connect external device (ventilator, strobe, etc.) to relay terminals J5, J6

3-Wire Current Sink Output

(VDC only)

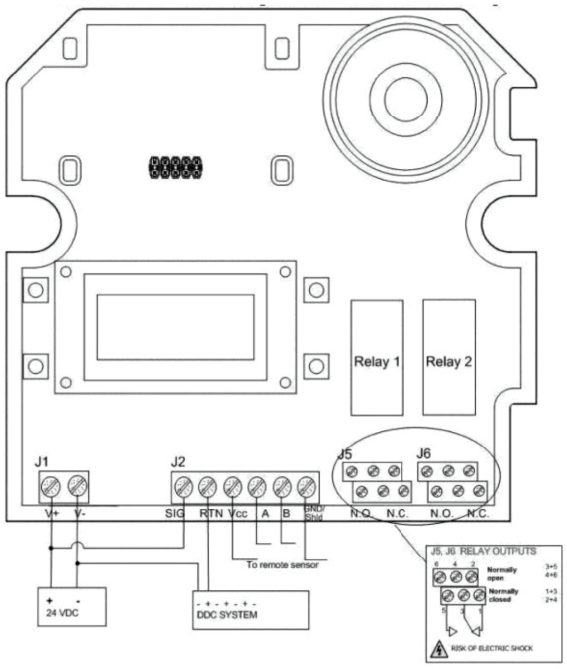


Figure 3. 3-Wire Current Sink Output

4-Wire Current Sink Output

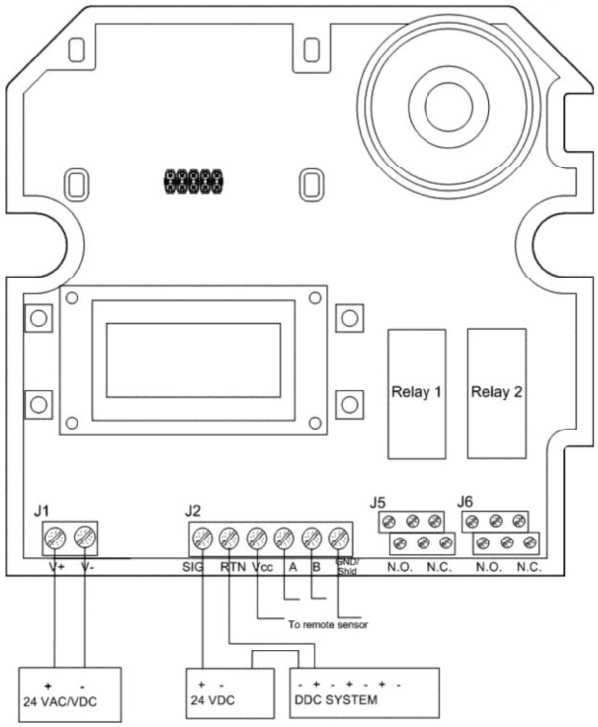
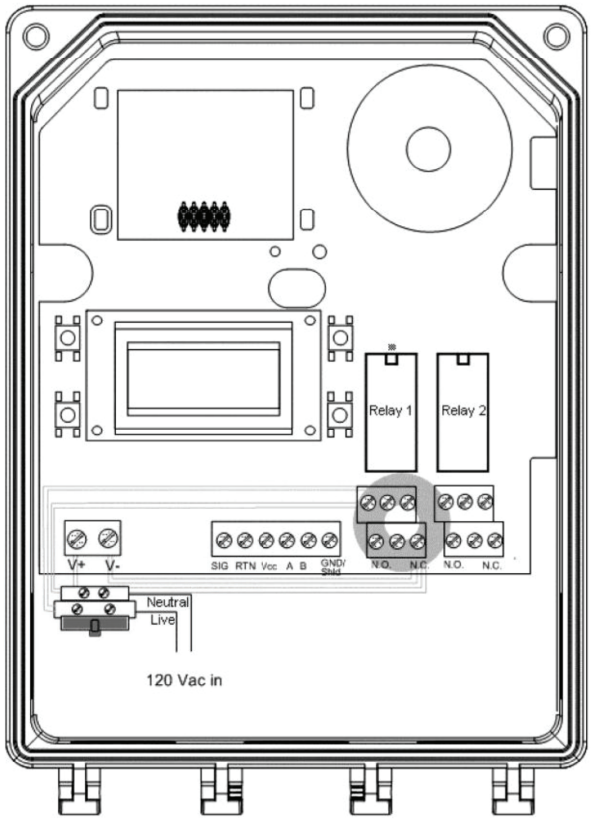


Figure 4. 4-Wire Current Sink Output

120 VAC Connection

The transformer is mounted under the PCB and connections to the power terminal are factory wired. Connect the live and neutral wires, as shown (ensure that power is off before attempting to connect the wires). Replace fuse with same type: 1A 250 VAC, T.



FEDERAL SIGNAL



Model SLM500 shown with mounting base options (ordered separately)

▶ Model SLM500

StreamLine® Modular Multifunctional LED Combination Audible/Visual Signal

Model SLM500 is a multifunctional LED beacon and sounder combination developed with a multiple input technology that allows three separate levels of alarm, controllable via wiring selection. This unit offers multiple combinations including independent visual signal, independent audible tone, or a combined audible tone and visual signal.

SLM500 offers three flash patterns (3x strobe, fade and steady) and the option of no visual effect. There are 64 unique tones to select from across two switches (32 tones per switch). The volume of the selected tone is adjustable between 86-105 dBa @ 1m at three output levels (high, medium, low) through an integrated button.

Channel 1 includes a visual signal only. Channel 2 combines an audible tone from switch A to the chosen flash pattern. Channel 3 combines an audible tone from switch B to the chosen flash pattern. Channel 2 and 3 allow the option of audible tone only/no visual effect by cycling through the flash patterns using the integrated button, until the visual effect turns off.

The SLM500 enclosure is made from a self-extinguishing polycarbonate material with high impact and UV resistance.

FEATURES

- Compatible with 12-24VAC/DC or 120-240VAC*
- PLC compatible with PNP or NPN connections (Except Dock Base, only NPN)
- 3 Channels included
  1: Visual signal only
  2: Visual signal + tone 1
  3: Visual signal + tone 2
- The option to have independent audible tone
- 100,000 hour LED
- Five LED lamp/lens colors: Amber, Blue, Clear, Green and Red
- Three flash patterns: 3x strobe (default), fade and steady
- 64 tone options at three adjustable levels
- Seven mounting base options
- Type 3R, IP65 enclosure
- CE Certified
- UL and cUL Listed

*Voltage is dependent on selected base (sold separately)

MODEL	VOLTAGE	FLASH RATE/MINUTE (FLASH MODE)	DECIBELS (MIN.–MAX.) 10'	1M
SLM500_*	12-24VAC/DC or 120-240VAC	85 (+/-10)	76-95	86-105

* Indicates color: (A) Amber, (B) Blue, (C) Clear, (G) Green or (R) Red

MAXIMUM OPERATING CURRENT (mA)					
12VDC	24VDC	12VAC	24VAC	120VAC	240VAC
315	280	375	325	205	115

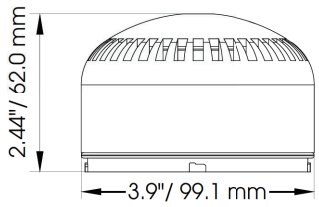
Weight (unit(s) + base = total weight)

SLM500	VOLTAGE	SHALLOW BASE	DEEP BASE	WALL MOUNT	PIPE MOUNT	TWIN WALL MOUNT	2 STACK DOCK BASE	3 STACK DOCK BASE
7.05 oz	12-24VAC/DC	2.12 oz 0.06 kg	4.23 oz 0.12 kg	6.70 oz 0.19 kg	5.29 oz 0.15 kg	9.17 oz 0.26 kg	14.46 oz 0.41 kg	21.16 oz 0.60 kg
0.20 kg	120-240 VAC	–	6.0 oz 0.17 kg	8.47 oz 0.24 kg	6.70 oz 0.19 kg	12.35 oz 0.35 kg	16.58 oz 0.47 kg	24.69 oz 0.70 kg

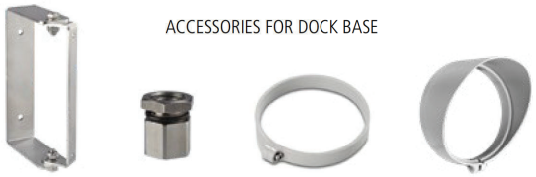
StreamLine® Modular Multifunctional LED Combination Audible/Visual Signal (SLM500)

SPECIFICATIONS

Lamp Life:	100,000 Hours	
Light Source:	LED	
Operating Temperature:	-40°F to 131°F	-40°C to 55°C



ACCESSORIES FOR DOCK BASE



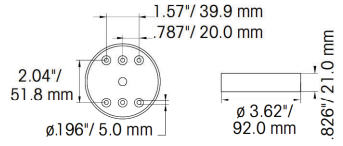
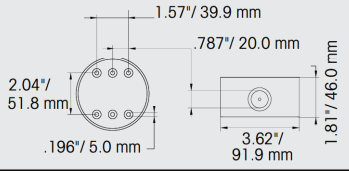
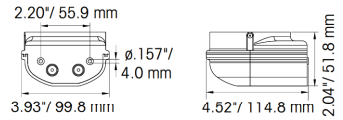
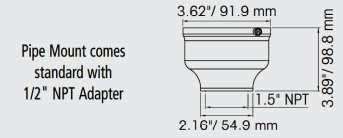
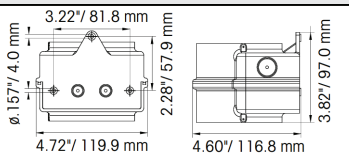
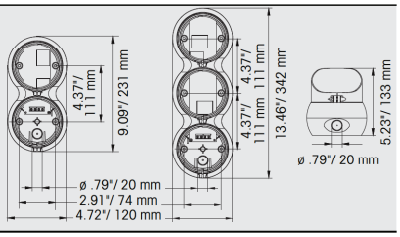
SLMB23W SLMB23N SLM-RR SLMB23V

HOW TO ORDER

- Specify model number SLM500 and color
- Specify required mounting base (see chart)
- Optional dome guard
  For shallow mounting base (SLMDG1)
  For deep mounting base (SLMDG2)
- Accessories for Twin and Wall Mount Bases
  Cable Gland, M20, Gray, 2 Pack (K77700416)
  Cable Gland, M20, Red, 2 Pack (K77700416-01)
- Accessories for Pipe Mount Base
  1 " NPT Adapter (SLMNPT1)
  1/2 " NPT Adapter (SLMNPT2)
- Accessories for Dock Base
  Wall Mount Bracket (SLMB23W)
  1/2 " NPT Adaptor (SLMB23N)
  Retaining Ring (SLM-RR)
  Light Visor (SLMB23V)

MOUNTING BASE OPTIONS

Mounting bases are rated Type 4X. Final product rating is determined by top module. In combination with SLM500, the unit is Type 3R, IP65. For added protection, install with included retaining ring (SLM-RR).

	Model Number	Base Color	Voltage	
 Shallow Base	SLMBS-012-024GY	Gray	12-24VAC/DC	
	SLMBS-012-024R	Red	12-24VAC/DC	
 Deep Base	SLMBD-012-024GY	Gray	12-24VAC/DC	
	SLMBD-012-024R	Red	12-24VAC/DC	
	SLMBD-120-240GY	Gray	120-240VAC	
	SLMBD-120-240R	Red	120-240VAC	
 Wall Mount	SLMBW-012-024GY	Gray	12-24VAC/DC	
	SLMBW-120-240GY	Gray	120-240VAC	
 Pipe Mount	SLMBP-012-024GY*	Gray	12-24VAC/DC	 Pipe Mount comes standard with 1/2" NPT Adapter
	SLMBP-120-240GY*	Gray	120-240VAC	
 Twin Wall Mount	SLMBT-012-024GY	Gray	12-24VAC/DC	
	SLMBT-120-240GY	Gray	120-240VAC	
 2-Stack Dock Base 3-Stack Dock Base	SLMB2-024GY*	Gray	24VAC/DC	
	SLMB2-120-240GY*	Gray	120-240VAC	
	SLMB3-024GY*	Gray	24VAC/DC	
	SLMB3-120-240GY*	Gray	120-240VAC	
	Note: Dock bases allow one function per position and include visors. Dock bases are NPN compatible only.			

*Installation of included retaining ring is required for pipe and dock bases.

Rev. B

Fiche technique individuelle

SLA-1L / SLA-2L / SLA-3L / SLA12-2L

UNITÉ À BATTERIE EN ACIER « EASY OUT»

La série commerciale d'unités à batterie SLA-1L, SLA-2L, SLA-3L et SLA12-2L est conçue pour fournir un éclairage de secours efficace et fiable. L'utilisation d'un boîtier tout en acier robuste permet un design moderne et discret.



CARACTÉRISTIQUES ET SPÉCIFICATIONS

- **Circuit électrique**
  - Entrée 120/347 V 60Hz CA, sélectionnable sur le chantier
  - Haute efficacité, récupération rapide, système de charge très précis
  - Capacité de wattage de 6 VCC 27 W et 36 W ou 12 VCC 72 W (comme spécifiée)
  - Interrupteur de test momentané à bouton-poussoir
  - DEL diagnostique/témoin pour MARCHE CA et CHARGE
  - Chargeur limiteur de courant, entièrement automatique
  - Protection de basse tension à verrouillage de ligne
  - Design et construction électroniques
  - Protection contre éclairage réduit et court-circuit
  - Température compensée
  - Recharge complète de la batterie en 24 heures
  - Batterie au calcium de plomb scellée sans entretien
- **Mécanique**
  - Cordon d'alimentation 120 VCA inclus
  - Configuration d'entrée défonçable à croisillon et encoches de montage en trou de serrure estampillées à l'arrière du cabinet
  - Entrées multiples pour branchement
  - Revêtement standard de poudre blanche
  - Les phares de montage offrent un petit format PAR18
  - Phares DEL avec une garantie à vie limitée[1]
- **Conformités**
  - CSA Certified to C22.2 #141-15

SURVOL

SLA-1L	– Capacité de 27 W 6 VCC – Plus de 3 heures d'autonomie – 2 phares DEL blanc de 2 W ultra brillante
SLA2L	– Capacité de 36 W 6 VCC – Plus de 4 heures d'autonomie – 2 phares DEL blanc de 2 W ultra brillante
SLA-3L	– Capacité de 36 W 6 VCC – Plus de 4 heures d'autonomie – 2 phares DEL blanc de 3 W ultra brillante
→ SLA12-2L	– Capacité de 72 W 12 VCC – Plus de 8 heures d'autonomie – 2 phares DEL blanc de 2.5 W ultra brillante

envoi rapide

luminaire DEL

NMB *005*

[1] Pour les détails complets de garantie, s'il vous plaît voir nos termes et conditions dans notre site Internet.

2233 rue de l'Aviation, Dorval, QC H9P 2X6
514.342.1199, 1.800.361.6965 • 514.807.3011 • www.standardpro.com

ENVOI RAPIDE ET TABLEAU DE SPÉCIFICATIONS TECHNIQUES [1]

Numéro de produit	Volts CC (VCC)	Watts (W)	Qté de phares	Phares	Lampes (W)	Source de lumière	Tension à l'entrée (VCA)	Couleur
SLA-1L	6	27	2	N	2	DEL	120/347	Blanc
SLA-2L	6	36	2	N	2	DEL	120/347	Blanc
SLA-3L	6	36	2	N	3	DEL	120/347	Blanc
SLA12-2L	12	72	2	N	2.5	DEL	120/347	Blanc

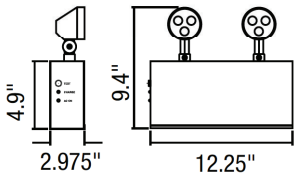
PUISSANCE DU MODÈLE

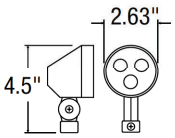
Modèle	Volts (V)	Capacité de puissance (W)			
		30 min.	60 min.	90 min.	120 min.
SLA-1L	6	27	14	9	7
SLA-2L	6	36	18	12	9
SLA-3L	6	36	18	12	9
SLA12-2L	12	72	36	24	18

GRILLE DE PROTECTION

Numéro de produit	Dimensions (po)
WGD590	15.25 x 14.25 x 6.75

DIMENSIONS





TYPE N - PAR18
Thermoplastique

RÈGLES D'ESPACEMENT

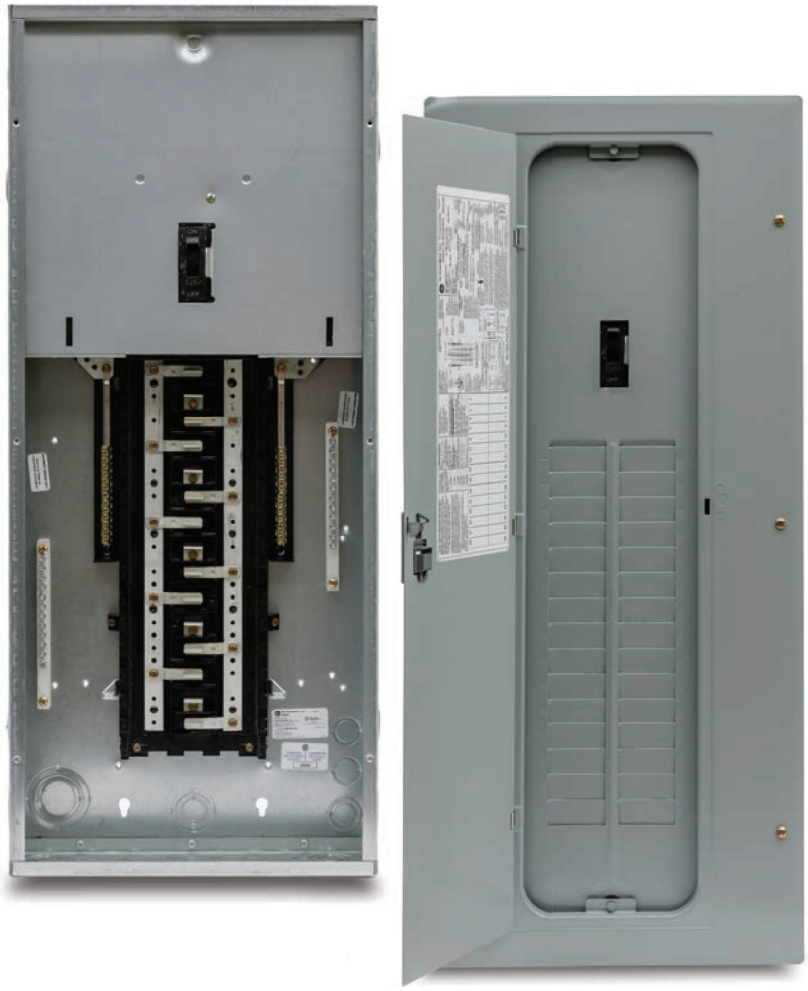
Hauteur de montage	Espace centre à centre (pi)		
	2 W	2.5 W	3 W
8 pi	26	41	78
10 pi	24	37	75
15 pi	17	38	66
20 pi	10	21	53

Les données sont basées sur des essais réalisés dans un milieu contrôlé et sont représentatives de la performance relative du ballast.
La performance actuelle peut varier selon les conditions de fonctionnement.
Tout produit est sujet à changement ou discontinuation en tout temps sans préavis.

2233 rue de l'Aviation, Dorval, QC H9P 2X6
514.342.1199, 1.800.361.6965 • 514.807.3011 • www.standardpro.com

GE PowerMark Gold™ Load Centres

CSA Selection Guide



PowerMark Plus™ Load Centres

Three phase 100-225A

- All Load Centres Top or Bottom Entry
- Indoor and outdoor rated enclosures available
- Aluminum bus and copper stabs
- Base catalogue number includes cover
- Suitable for use as service entrance equipment when installed in accordance with the CEC



Three Phase

PowerMark Plus Load Centres

120/208 V - Three Phase

Main Breaker, 22kA

Includes cover

Amperes (MB)	Catalogue Number Type 1 Indoor Enclosure	Catalogue Number Type 3R Outdoor Enclosure	Maximum Circuits 1" THQL			Total 1-Pole Spaces
			1P	2P	3P	
100	TMC12410C	–	12	6	4	12
100	TMC18410C	–	18	8	6	18
125	TMC30412C	–	30	14	10	30
200	TMC42420C	TMC42420R	42	20	14	42

3ph 120/208V Load Centre only accepts 1" THQL style breakers.

120/208 V - Three Phase

Main Lug

Amperes (ML)	Catalogue Number Type 1 Indoor Enclosure	Catalogue Number Type 3R Outdoor Enclosure	Maximum Circuits 1" THQL			Total 1-Pole Spaces
			1P	2P	3P	
125	TLC12412C	TLC12412R	12	6	4	12
150	TLC18415C	–	18	8	6	18
150	TLC24415C	TLC24415R	24	12	8	24
200	TLC30420C	TLC30420R	30	14	10	30
200	TLC42420C	TLC42420R	42	20	14	42
225	TLC30422C	–	30	14	10	30
225	TLC42422C	–	42	20	14	42

3ph 120/208V Load Centre only accepts 1" THQL style breakers.

Value and versatility defined

www.lithonia.com

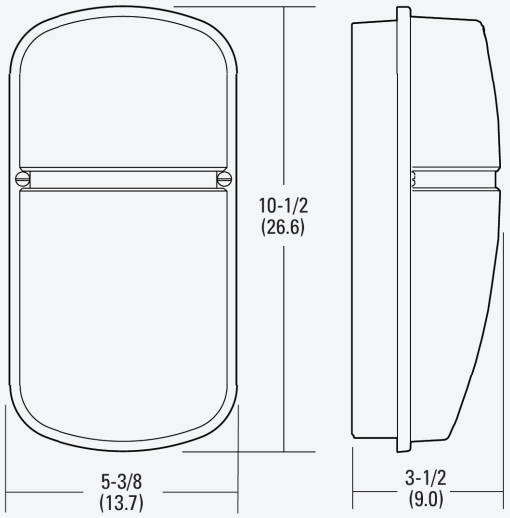


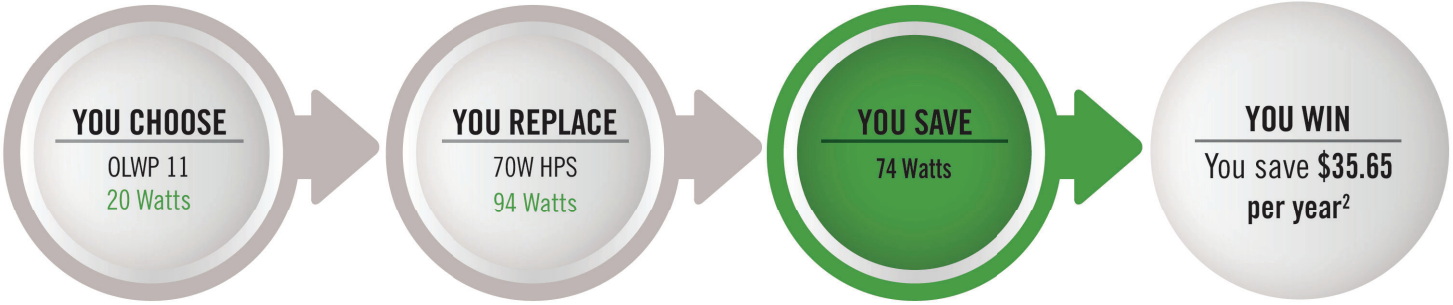
Mounts to a recessed junction box

- 2 high-powered LEDs provide 1096 lumens in a neutral 4000K CCT
- **Fully gasketed polycarbonate lens** provides an **even light distribution** and protects electronics
- 50,000 hour LED life[1]
- **Cast aluminum back plate** dissipates heat from LEDs to promote long life
- Includes standard photo cell for dusk to dawn operation
- Highly efficient LEDs provide **55 lumens per watt**

[1] LED lifespan based on IESNA LM-80-08 results and calculated per IESNA TM-21-11 methodology.

Product Dimensions





[2] Based on 12 hours operation per day and energy costs of $.11 per kWh

ORDERING INFORMATION

Example: OLWP 11 PE BZ

OLWP

Series	Lumens / Color Temperature (CCT)	Voltage	Controls	Finish
OLWP LED Wall Pack	**11** 1096 lumens / 4000K[3]	(blank) 120V	**PE** button photocell	**BZ** Bronze

LITHONIA LIGHTING®

5 YEAR LIMITED WARRANTY

c UL us LISTED

LED lighting facts

WET LOCATION™

Notes

3 Correlated Color Temperature (CCT) shown is nominal per ANSI C78.377-2008.

One Lithonia Way, Conyers, GA 30012 Phone: 800.279.8041 www.lithonia.com
©2013 Acuity Brands Lighting, Inc. 03/13 DR7432 Form No. 521.022

AcuityBrands.

LSVB

LED Sealed Vapor B

VISIONEERING by VISCOR

Project:	Catalogue #:	Type:
Notes:		

Product Description

The LSVB is a rugged commercial-grade enclosed and gasketed IP66 luminaire. It is ideal for use with indoor and outdoor applications where high-e ciency, performance and a high degree of ingress protection from dust/water is re uired. This luminaire s 5VA ame rated polycarbonate housing and lens make it non-corrosive and impact resistant. The LSVB features an operating ambient temperature range from -20 to 35 degree Celsius.



Features

NEMA 4X / IP66
4 x Tri-Wing tamper resistant screws standard
Dust and water resistant
Shallow and narrow design
Lightweight, 5VA injection molded housing and lens
Standard low voltage dimming (0-10v, 10)

Applications

- Canopies
Cold Storage Facilities
Garages and Workshops
Dusty and Wet Environments

Featured Options

Internal and external occupancy Motion Sensors
Low Temperature (-40C)

Optical System

Standard di user is injection molded, UV stabilized frosted polycarbonate di user designed for high-e ciency while providing reduced glare. Smooth surface faces outwards.

Mounting

Snap-in mounting brackets provided for chain or ceiling surface mounting. O set mounting pads which keep luminaire level and slightly o of the mounting surface are formed within the housing.

Construction

Lightweight, injection molded, high mechanical resistant housing. Hole on one end is 7/8 inch nominal diameter comes with a strain relief connector. The other end has provisional 7/8 knock-out if re uired in row mounting applications. Di user ange ts into the gasketed retention slot providing a continuous seal, and is held in place with stainless steel retaining latches.

Finish

RAL 7035 light grey polycarbonate housing.

Electrical

Long life LEDs coupled with high e ciency drivers provide uality illumination.
Rated to deliver L70 performance 225,000 hours.

Warranty

5 year limited warranty. For complete warranty terms visit
http //viscor.com/assets/Viscor_LED_Warranty.pdf

Approvals

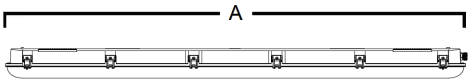
Wet Locations. Meets IP66. NEMA 4X. Approved to CSA and UL standards.
Tested to LM-79-08 standards. DesignLights Consortium Premium uali ed.

c UL us LISTED · DLC PREMIUM · NEMA4X · IP66 · WET LOC · IK10+

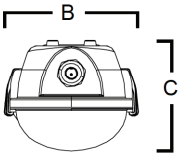
DLC is pending. IK10 test results based on C18 option.
All con gurations may not be DLC uali ed. Check www.designlights.org/ PL for uali ed con gurations.

Dimensions

Top View



End View



MODEL	A	B	C
48”	48”	4 3/4”	4 1/16”

LSVB

LED Sealed Vapor B

VISIONEERING by VISCOR

Project:	Catalogue #:	Type:
Notes:		

Order Key

EXAMPLE: LSVB48-LED840K040LUN3

LSV | B | 48 | - | LED | | | | | - | | Options

- **Type**
- **Nominal Length (in.)**: 48
- **CRI**: 8 - (80-90)
- **CCT**: 35K - 3500K; 40K - 4000K; 50K - 5000K
- **Nominal Lumens**: 030L - 3000; 040L - 4000; 055L - 5500; 070L - 7000
- **Voltage**: UN3 - 120-347V; UNV - 120-277V; 347 - 347V

Size	Nominal Lumens	Watts (120/277V)	Efficacy
48	030L	22	140 lm/W
	040L	29	137 lm/W
	055L	43	126 lm/W
	070L	53	133 lm/W

Values based on 35 C Maximum Operating Temperature

Driver Options

B06(-40C) Low Temperature
B39 Emergency Lighting Battery Pack

Packaging Options

K0 Bulk Pack/ Pallet Packed and/or Wrapped

Wiring Options

V08 Flexible Cord Feed (Single Circuit Cord) 6-ft Standard
V11(1) Hub for 1/2 NPT Threaded Pipe (3/4 OD) - 1 End
V11(2) Hub for 1/2 NPT Threaded Pipe (3/4 OD) - 2 End
V68 Microwave Occupancy Sensor
V82(UNV) IP65 Motion Sensor 120-277V (For Wet Locations)
V102 White 7/8 Li uid Tight Plug (For Wet Locations)

Other options may be available, consult factory. Speci cations and data subject to change without notice.

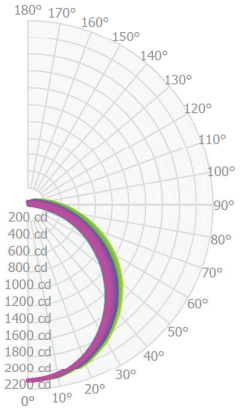
Not available with UN3
Not available in UN3 & 347V.

Mounted Accessories (Ordered Separately)

KIT00001 Chain Set (2) 4ft w/ S-hooks.M10
KIT00072 Single Cable with Adjustable Lock & Toggle

Photometrics

IES File: **LSVB48-LED840K070LUNV**
Lumens: **7045**
Wattage: **53**
Efficacy: **133**



Zonal Lumen Summary

Zone	Lumens	%Fixture
0.0° - 30.0°	1632	23.2%
0.0° - 40.0°	2679	38.0%
0.0° - 60.0°	4803	68.2%
0.0° - 90.0°	6579	93.4%
0.0° - 110.0°	6869	97.5%
0.0° - 130.0°	6973	99.0%
0.0° - 150.0°	7020	99.6%
0.0° - 170.0°	7042	100.0%
0.0° - 180.0°	7045	100.0%

Average Luminance Table (cd/m2)
CP Summary

	0.00°	45.00°	90.00°
0.00°	16975	16975	16975
45.00°	14611	12899	12963
55.00°	13601	11855	12072
65.00°	12370	10739	10983
75.00°	9928	9501	9694
85.00°	3083	8465	8557

Coefficients of Utilization

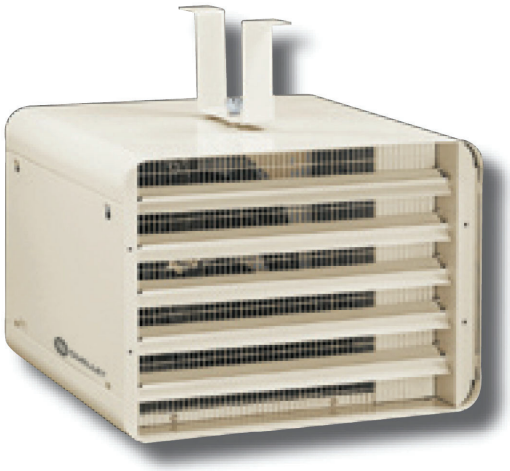
ρc	80%			70%			50%		
ρw	70%	50%	30%	70%	50%	30%	70%	50%	30%
0	117	117	117	114	114	114	107	107	107
1	106	100	95	102	97	93	96	92	88
2	95	87	79	92	84	77	86	79	74
3	87	76	67	84	73	65	78	69	63
4	79	67	58	76	65	56	71	62	54
5	73	59	50	70	58	49	65	55	47
6	67	53	44	65	52	43	60	50	42
7	62	48	39	60	47	39	56	45	37
8	58	44	35	56	43	35	52	41	34
9	54	40	32	52	39	32	49	38	31
10	51	37	29	49	36	29	46	35	28

Effective Floor Cavity Reflectance: 20%

SÉRIE
OAS

AÉROTHERME SUSPENDU

AÉROCONVECTEUR COMMERCIAL/INDUSTRIEL





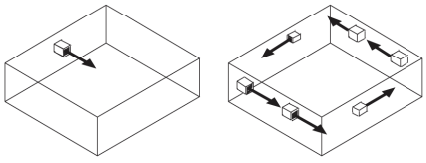
De la chaleur au centre des grands espaces

L'aérotherme est idéal pour les endroits exigeants un débit d'air important. Il peut s'installer à l'horizontale au mur ou au plafond grâce à ses supports (fournis) ou à la verticale avec 4 tiges filetées (non fournies).

Une variété de commandes sont offertes en trousse ou installées à l'usine.

Une option spécifique est offerte pour permettre l'utilisation de cet appareil dans une exploitation minière.

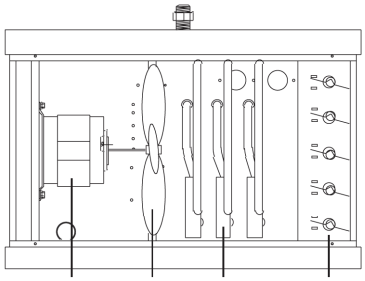
Installation type



Petit espace Grand espace

Vue de profil

Moteur placé dans la partie froide



Moteur Éventail Éléments Volets

Caractéristiques

Couleur Finition	Amande. Peinture à la poudre d'époxy-polyester.
Tension	208, 240, 277*, 347, 480* ou 600 volts, 1 ou 3 phases. Autres tensions offertes sur demande. Certains appareils peuvent être convertis de 3 à 1 phase sur place.
Construction	Construction en acier de calibres 18 et 20. Volets ajustables afin de diriger l'air chaud. Protection thermique à réenclenchement automatique.
Ventilateur	Moteur avec protection thermique intégrée. Moteur fermé à roulements à billes lubrifiés à vie (sauf 15 à 25 kW, 208/240 volts), monté dans le compartiment froid. Ventilateur de 58 dBA (2-10 kW), 67 dBA (15-30 kW) et 77 dBA (40-60 kW). Dispositif éliminant la chaleur résiduelle.
Élément	Élément tubulaire très résistant; acier inoxydable (2-10 kW), acier avec ailettes (15-60 kW). Disposition concentrique des éléments.
Régulation	Contacteur intégré standard. Circuit de commande à 240/208 volts standard (avec transformateur si nécessaire). Relais à 24 volts disponible, avec ou sans transformateur. Thermostat intégré facultatif. Circuit de commande à 120 volts disponible.
Pose	Montage horizontal au mur ou au plafond avec un des 2 supports fournis, permettant de faire pivoter sur 360°**. Montage vertical à l'aide de 4 tiges filetées 1/2-13 UNC (non fournies). Cône diffuseur disponible. Vaste compartiment des commandes facile d'accès. Hauteur maximale recommandée (horizontale) : 2-10 kW : 2,4 m (8 pi); 15-30 kW : 3,0 m (10 pi); 40-60 kW : 4,5 m (15 pi). Grillage de protection permettant le montage à une hauteur quelconque (sauf 40-60 kW). Hauteur minimale de 2,4 m (8 pi) pour les appareils de 40-60 kW. Température maximale de fonctionnement : 30 °C (85 °F).
Garantie	Un an contre tous vices.
Applications	Usine, cage d'escalier, laiterie, garage de machinerie.

* Modèles à 277 et 480 volts offerts sur demande.

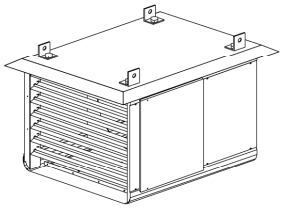
** Montage horizontal à l'aide de 4 crochets pour les 40, 50, et 60 kW (plafond seulement).

Nous recommandons l'usage d'un thermostat électronique mural pour un meilleur confort.

Modèles

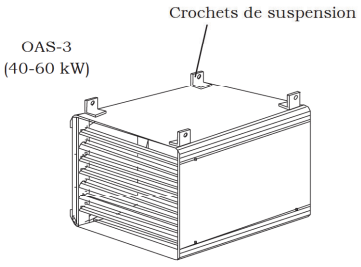
Numéro de produit	Tension (volts)	Phase*	kW (Btu/h)	Pcm (cfm)	Hausse		Moteur		
					°C	°F	HP	rpm	volts
OAS02008	208	1	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS02038	208	*3/1	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS03008	208	1	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS03038	208	*3/1	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS04008	208	1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS04038	208	*3/1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS05008	208	1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS05038	208	*3/1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS07538	208	*3/1	7,5 (25590)	700	19	34	1/30	1550	240/208
OAS10008	208	1	10,0 (34120)	700	25	45	1/30	1550	240/208
OAS10038	208	3	10,0 (34120)	700	25	45	1/30	1550	240/208
OAS15038	208	*3/1	15,0 (51180)	1300	20	36	1/8	1550	240/208
OAS20038	208	*3/1	20,0 (68240)	1300	27	49	1/8	1550	240/208
OAS25038	208	*3/1	25,0 (85300)	1300	34	61	1/8	1550	240/208
OAS02000	240	1	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS03000	240	1	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS04000	240	1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS05000	240	1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS07500	240	1	7,5 (25590)	700	19	34	1/30	1550	240/208
OAS10000	240	1	10,0 (34120)	700	25	45	1/30	1550	240/208
OAS15000	240	1	15,0 (51180)	1300	20	36	1/8	1550	240/208
OAS20000	240	1	20,0 (68240)	1300	27	49	1/8	1550	240/208
OAS25000	240	1	25,0 (85300)	1300	34	61	1/8	1550	240/208
OAS02007	347	1	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS03007	347	1	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS04007	347	1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS05007	347	1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS07507	347	1	7,5 (25590)	700	19	34	1/30	1550	240/208
OAS02006	600	1	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS02036	600	3	2,0 (6824)	700	5	9	1/30	1550	240/208
OAS03006	600	1	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS03036	600	3	3,0 (10236)	700	8	14	1/30	1550	240/208
OAS04006	600	1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS04036	600	*3/1	4,0 (13648)	700	10	18	1/30	1550	240/208
OAS05006	600	1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS05036	600	*3/1	5,0 (17060)	700	13	23	1/30	1550	240/208
OAS07536	600	*3/1	7,5 (25590)	700	19	34	1/30	1550	240/208
OAS10036	600	*3/1	10,0 (34120)	700	25	45	1/30	1550	240/208
OAS15036	600	*3/1	15,0 (51180)	1400	19	34	1/3	1725	600 (1 phase)
OAS20036	600	*3/1	20,0 (68240)	1400	25	45	1/3	1725	600 (1 phase)
OAS25036	600	*3/1	25,0 (85300)	1400	31	56	1/3	1725	600 (1 phase)
OAS30036	600	3	30,0 (102360)	1400	38	68	1/3	1725	600 (1 phase)
OAS40036	600	3	40,0 (136480)	2000	35	63	3/4	1140	600 (3 phases)
OAS50036	600	3	50,0 (170600)	2000	44	79	3/4	1140	600 (3 phases)
OAS60036	600	3	60,0 (204720)	2000	53	95	3/4	1140	600 (3 phases)

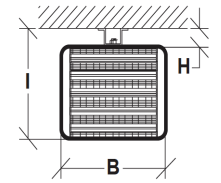
* Les appareils portant la mention « 3/1 » peuvent être convertis de 3 à 1 phase sur place.

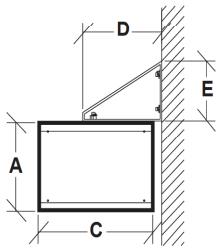


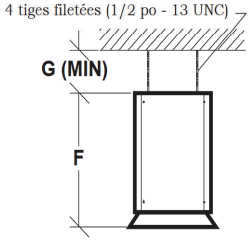
Le OAS-MD est conçu pour l'exploitation minière :

volet anti égouttement
- compartiment de branchement scellé
- regard à charnières et joint de néoprène
- retard d'élément sur cycle de marche (retard de ventilateur sur cycle d'arrêt)
- grille extra-résistante de calibre 18
- thermostat inclus









Dimensions
mm
pouces

	2-10 kW		15-30 kW		40-60 kW	
	mm	po	mm	po	mm	po
A	305,0	12	444,0	17 1/2	585,0	23
B	420,0	16 1/4	560,0	22	641,0	25 1/4
C	432,0	17	572,0	22 1/2	870,0	34 5/16
D	343,0	13 1/2	470,0	18 1/2	-	-
E	285,0	11 1/4	393,0	15 1/2	-	-
F	490,0	19 5/16	630,0	24 13/16	930,0	36 5/8
G	305,0	12	305,0	12	305,0	12
H	127,0	5	152,0	6	305,0	12
I	433,0	17	572,0	22 1/2	900,0	35
Poids	kg	lb	kg	lb	kg	lb
	20,0	45,0	39,0	85,0	68,0	150,0

Accessoires

Numéro de produit	Description	
OAS-CD1	Cône diffuseur (2-10 kW)	
OAS-CD2	Cône diffuseur (15-30 kW)	
OAS-CD3	Cône diffuseur (40-60 kW)	
Relais et thermostats		
Numéro de produit	Description	
No produit-RT	Relais 24 volts / Transformateur bas voltage	Installé en usine
No produit-R	Relais 24 volts	Installé en usine
OAS-RT	Relais 24 volts / Transformateur bas voltage	En trousse
OAS-R	Relais 24 volts	En trousse
No produit-T	Thermostat intégré	Installé en usine
OAS-T	Thermostat intégré	En trousse
OAS-DIS40	Interrupteur principal 40 ampères	Installé en usine
OAS-DIS80	Interrupteur principal 80 ampères	Installé en usine
OAS-DIS100	Interrupteur principal 100 ampères	Installé en usine
OAS-CV-277	Interrupteur du ventilateur avec moteur 240 et 277 volts	Installé en usine
OAS-CV-600	Interrupteur du ventilateur avec moteur 480 et 600 volts	Installé en usine
OAS-120	Circuit de commande à 120 volts	Installé en usine
OAS-3P	Contacteur 3 pôles	Installé en usine
Options		
Numéro de produit	Description	
OAS-MD	Usage intensif (ex.:exploitation minière)	

6 WARRANTIES, CERTIFICATION & PROCÉDURE

MTU ONSITE ENERGY– STANDBY LIMITED WARRANTY
FIVE (5) YEARS / 3,000 HOUR COMPREHENSIVE EXTENDED

LIMITED WARRANTY: Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product to be free from defects in materials and workmanship, and will perform under normal use and service from valid startup performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been property installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED WARRANTY PERIOD: Engine Generator Set: Parts and labor for 60 (sixty) months will begin with the first commissioning of the product(s). In all cases, the warranty period will expire not later than 72 (seventy-two) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings on the reverse side of this document.

LIMITED WARRANTY CONDITIONS: Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty, Start-Up Validation and Pre - Inspection form and return it to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records is to be kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, and recommendations as laid out in the Installation Guide provided with the product and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE: Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.**
Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
   a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
   b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
   c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
   d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
   e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.

TOGNUM GROUP COMPANIES

Europe / Middle East / Africa / Latin America / MTU Onsite Energy / 88040 Friedrichshafen / Germany / Phone + 49 7541 90 7060 / Fax +49 7541 90 7084 / powergenregion1@mtu-online.com // **Asia / Australia / Pacific /** MTU Onsite Energy / 1, Benoi Place / Singapore 629923 / Republic of Singapore / Phone + 65 6861 5922 / Fax + 65 6861 3615 / powergenregion2@mtu-online.com // **USA / Canada / Mexico /** MTU Onsite Energy Corporation/ 100 Power Drive / Mankato, Minnesota 56002 / USA / Phone + 1 507 625 7973 / Fax + 1 507 625 2968 / powergenregion3@mtu-online.com // **Worldwide for HotModule /** MTU Onsite Energy GmbH/ 81663 Munich / Germany / Phone + 49 89 203042 800 / Fax +49 89 203042 900 / hotmodule@mtu-online.com //www.mtu-online.com

OE-001ENU-1002

MTU ONSITE ENERGY– STANDBY LIMITED WARRANTY
FIVE (5) YEARS / 3,000 HOUR COMPREHENSIVE EXTENDED

f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
g. Shipping damage of any type.
h. Any installation errors or damage of the equipment when shipped as ordered.
i. Any overtime travel or labor to make repairs under warranty.
j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks and special test equipment above factory requirements.
m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers roundtrip.
n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
o. Misuse or abuse during installation and thereafter.
p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair.
Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane or earthquake.
r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
v. Travel expense on portable equipment.
w. Trailer lights, wiring, and brakes.
x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
y. Lodging expense of person(s) performing service, unless approved in advance by factory.
z. Engine fluids.
aa. Units purchased at the Standby Power rating that are being used in a prime power application.
bb. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
cc. Any expenses associated with investigating performance complaints in which no defect is found.
dd. Any associated costs for replacing components that are found not to be defective.
ee. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.

2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
   a. Cords, receptacles, and cord reels
   b. Gas flex pipes
   c. Housing lights, space heaters, and associated equipment

Rev. 20100420

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OE-001ENU-1002

Certificate of Registration

nqa global assurance

This is to certify that the Quality Management System of:

Systèmes de distribution intégrés sec

opérant sous le nom de: Génératrice Drummond, Wajax, Wajax Systèmes de puissance, Usinage Premier Choix, UPC Diesel
243 Avenue des artisans
St-Germain-de-Grantham QC J0C 1K0
Canada

(Central function listed above. See appendix for additional locations)

applicable to:

Sales, design, production, project management, installation, maintenance and special projects of power systems. Sales of parts. Sale of services. Machining. Rental of electrical equipment

has been assessed and approved by
National Quality Assurance, U.S.A., against the provisions of:

ISO 9001:2015

For and on behalf of NQA, USA

ANAB ACCREDITED ISO/IEC 17021 MANAGEMENT SYSTEMS CERTIFICATION BODY

Certificate Number:	12318
EAC Code:	29
Certified Since:	July 7, 2010
Valid Until:	June 5, 2023
Reissued:	September 14, 2020
Cycle Issued:	September 14, 2020
Prior Cycle Exp Date:	June 5, 2020

This approval is subject to the company maintaining its system to the required standard, which will be monitored by NQA, USA, 289 Great Road, Suite 105, Acton, MA 01720, an accredited organization under the ANSI National Accreditation Board.

Certificate of Registration

nqa global assurance

Appendix to Certificate Number: 12318

Includes Facilities Located at:

Systèmes de distribution intégrés sec Certificate Number 12318 opérant sous le nom de: Génératrice Drummond, Wajax, Wajax Systèmes de puissance, Usinage Premier Choix, UPC Diesel 243 Avenue des artisans St-Germain-de-Grantham QC J0C 1K0 Canada	Sales, design, production, installation, maintenance and special projects of power systems. Sales of parts and services. Rental of electrical equipment.
Systèmes de distribution intégrés sec Certificate Number 12318 Opérant sous le nom de: Génératrice Drummond, Wajax, Wajax Systèmes de puissance, Usinage Premier Choix, UPC Diesel 2997, ave Watt Québec QC G1X 3W1 Canada	Special projects of power systems and machining

Certified Since: July 7, 2010
Valid Until: June 5, 2023
Reissued: September 14, 2020
Cycle Issued: September 14, 2020

This approval is subject to the company maintaining its system to the required standard, which will be monitored by NQA, USA, 289 Great Road, Suite 105, Acton, MA 01720, an accredited organization under the ANSI National Accreditation Board.

WAJAX POWER SYSTEMS

LIST OF WORK TO BE VERIFIED BEFORE START UP

1- *Wiring of the:
- accessories power
- transfer switch engine start contact
- power cables
- supply battery charger by load side of the transfer switch

2- Fill tank(s);

3- Check phase sequence;

4- Check presence of normal power at the transfer switch;

5- Keep one (1) meter clearance on back and both side of the enclosure;

6- Make sure that the air outlet is not to close from a wall or any other obstacle which can harm the air circulation.

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑐᓕᕆᔨᒃ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 09/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 002 R1 **Referencing** 260521
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : PYROTONAX

Descriptions / comments

Cable 2-hours fire rated

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb 10, 2023

DILLON CONSULTING

PYROTENAX

SYSTEM 1850 BARE FIRE RATED CABLE



nVent PYROTENAX System 1850 Bare Fire Rated Cable is a range of mineral insulated (MI) 2-hour fire-rated wiring cable for critical and essential circuit protection. It consists of solid copper conductors in a continuous copper sheath (System 1850) and is allowed to be used under virtually any application conditions by both the NEC and CEC. Cable terminations are typically field installed. Factory terminated wiring units are available in a range of sizes and lengths.

inside building between CBD-1 to SPL-1 + SPL-1 to fire pump 50HP + SPL-1 to fire pump 15HP

FEATURES

- Ultimate performance: fireproof, no smoke generation, zero halogens, high mechanical strength and corrosion resistance, waterproof and non-ageing
- UL fire-resistive classified, does not require additional conduit or fireproofing
- UL Classified/ ULC Listed: tested to the UL 2196/ULC-S139 fire test standards
- Meets requirements of an Electrical Circuit Protective System, as referred to in Articles 695 and 700 of the National Electrical Code (NEC)
- System 1850 appears in Electrical Circuit Integrity System (FHIT and FHIT7) of the UL/ULC Fire Resistance Directory
- Complies with wet-location and LSZH requirements for transit applications as outlined in NFPA 130
- Reliable during long life: 30 year product warranty available

SPECIFICATIONS

Max Continuous Operating Temperature: 482 °F
Max Exposure Temperature: 1850 °F
Conductor Surface: Bare
Conductor Category: Class 1 = Solid
Conductor Material: Copper
Insulation Material: Magnesium Oxide
Construction: Seamless Copper

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
2/18-215T	2C/18AWG/TWPR SYS 1850/300V	300 V	2	18
2/18-324TS	2C/18AWG/SHTWPR SYS 1850/300V	300 V	2	18
2/16-246T	2C/16AWG/TWPR SYS 1850/300V	300 V	2	16

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
2/16-340	2C/16AWG/SYS 1850/600V	600 V	2	16
2/16-364TS	2C/16AWG/SHTWPR SYS 1850/300V	300 V	2	16
3/16-355	3C/16AWG/SYS 1850/600V	600 V	3	16
4/16-387	4C/16AWG/SYS 1850/600V	600 V	4	16
7/16-449	7C/16AWG/SYS 1850/600V	600 V	7	16
2/14-371	2C/14AWG/SYS 1850/600V	600 V	2	14
3/14-387	3C/14AWG/SYS 1850/600V	600 V	3	14
4/14-465	4C/14AWG/SYS 1850/600V	600 V	4	14
7/14-496	7C/14AWG/SYS 1850/600V	600 V	7	14
2/12-402	2C/12AWG/SYS 1850/600V	600 V	2	12
3/12-480	3C/12AWG/SYS 1850/600V	600 V	3	12
4/12-465	4C/12AWG/SYS 1850/600V	600 V	4	12
7/12-543	7C/12AWG/SYS 1850/600V	600 V	7	12
1/10-277	1C/10AWG/SYS 1850/600V	600 V	1	10
2/10-449	2C/10AWG/SYS 1850/600V	600 V	2	10
3/10-480	3C/10AWG/SYS 1850/600V	600 V	3	10
4/10-590	4C/10AWG/SYS 1850/600V	600 V	4	10
7/10-621	7C/10AWG/SYS 1850/600V	600 V	7	10
1/8-298	1C/8AWG/SYS 1850/600V	600 V	1	#8
2/8-512	2C/8AWG/SYS 1850/600V	600 V	2	8
3/8-590	3C/8AWG/SYS 1850/600V	600 V	3	8
4/8-590	4C/8AWG/SYS 1850/600V	600 V	4	8
7/8-710	7C/8AWG/SYS 1850/600V	600 V	7	8
1/500-1000	1C/500KCMIL/SYS 1850/600V	600 V	1	500 kcmil

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
1/6-340	1C/6AWG/SYS 1850/600V	600 V	1	6
2/6-590	2C/6AWG/SYS 1850/600V	600 V	2	6
3/6-621	3C/6AWG/SYS 1850/600V	600 V	3	6
4/6-730	4C/6AWG/SYS 1850/600V	600 V	4	6
1/350-834	1C/350KCMIL/SYS 1850/600V	600 V	1	350 kcmil
1/4-402	1C/4AWG/SYS 1850/600V	600 V	1	4
2/4-684	2C/4AWG/SYS 1850/600V	600 V	2	4
3/4-746	3C/4AWG/SYS 1850/600V	600 V	3	4
1/250-746	1C/250KCMIL/SYS 1850/600V	600 V	1	250 kcmil
1/4/0-684	1C/4/0AWG/SYS 1850/600V	600 V	1	4/0
1/2-449	1C/2AWG/SYS 1850/600V	600 V	1	2
2/2-865	2C/2AWG/SYS 1850/600V	600 V	2	2
1/3/0-621	1C/3/0AWG/SYS 1850/600V	600 V	1	3/0
1/1-496	1C/1AWG/SYS 1850/600V	600 V	1	1
2/1-975	2C/1AWG/SYS 1850/600V	600 V	2	1
1/2/0-580	1C/2/0AWG/SYS 1850/600V	600 V	1	2/0
1/1/0-512	1C/1/0AWG/SYS 1850/600V	600 V	1	1/0
1/3-449	1C/3AWG/SYS 1850/600V	600 V	1	3
2/3-768	2C/3AWG/SYS 1850/600V	600 V	2	3
3/3-834	3C/3AWG/SYS 1850/600V	600 V	3	3

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PYROTENAX

SYSTEM 1850Z JACKETED FIRE RATED CABLE



nVent PYROTENAX System 1850Z Jacketed Fire Rated Cable is a range of mineral insulated (MI) 2-hour fire-rated wiring cable for critical and essential circuit protection. It consists of solid copper conductors, in a continuous copper sheath, with a low smoke zero halogen (LSZH) jacket. Developed for transit tunnel applications, it may also be used in other areas where corrosion due to moisture may be of concern. Cable terminations are typically field installed. Factory terminated wiring units are available in a range of sizes and lengths.

outside building between generator to fire pump 50HP + generator to fire pump 15HP

FEATURES

- Ultimate performance: fireproof, no smoke generation, zero halogens, high mechanical strength and corrosion resistance, waterproof and non-ageing
- UL fire-resistive classified, does not require additional conduit or fireproofing
- UL Classified/ ULC Listed: tested to the UL 2196/ULC-S139 fire test standards
- Meets requirements of an Electrical Circuit Protective System, as referred to in Articles 695 and 700 of the National Electrical Code (NEC)
- System 1850 appears in Electrical Circuit Integrity System (FHIT and FHIT7) of the UL/ULC Fire Resistance Directory
- Complies with wet-location and LSZH requirements for transit applications as outlined in NFPA 130
- Reliable during long life: 30 year product warranty available

SPECIFICATIONS

Max Continuous Operating Temperature:	194 °F
Max Exposure Temperature:	1850 °F
Conductor Surface:	Bare
Conductor Category:	Class 1 = Solid
Conductor Material:	Copper
Insulation Material:	Magnesium Oxide
Construction:	Seamless Copper

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
1/3/0-621Z	1C/3/0AWG/SYS 1850/600V/LSZH JKT	600 V	1	0
2/18-324TSZ	2C/18AWG/SHTWPR SYS 1850/300V/LSZH	300 V	2	18
2/16-340Z	2C/16AWG/SYS 1850/600V/LSZH JKT	600 V	2	16

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
2/16-364TSZ	2C/16AWG/SHTWPR SYS 1850/300V/LSZH	300 V	2	16
3/16-355Z	3C/16AWG/SYS 1850/600V/LSZH JKT	600 V	3	16
4/16-387Z	4C/16AWG/SYS 1850/600V/LSZH JKT	600 V	4	16
7/16-449Z	7C/16AWG/SYS 1850/600V/LSZH JKT	600 V	7	16
2/14-371Z	2C/14AWG/SYS 1850/600V/LSZH JKT	600 V	2	14
3/14-387Z	3C/14AWG/SYS 1850/600V/LSZH JKT	600 V	3	14
4/14-465Z	4C/14AWG/SYS 1850/600V/LSZH JKT	600 V	4	14
7/14-496Z	7C/14AWG/SYS 1850/600V/LSZH JKT	600 V	7	14
2/12-402Z	2C/12AWG/SYS 1850/600V/LSZH JKT	600 V	2	12
3/12-480Z	3C/12AWG/SYS 1850/600V/LSZH JKT	600 V	3	12
4/12-465Z	4C/12AWG/SYS 1850/600V/LSZH JKT	600 V	4	12
7/12-543Z	7C/12AWG/SYS 1850/600V/LSZH JKT	600 V	7	12
2/10-449Z	2C/10AWG/SYS 1850/600V/LSZH JKT	600 V	2	10
3/10-480Z	3C/10AWG/SYS 1850/600V/LSZH JKT	600 V	3	10
4/10-590Z	4C/10AWG/SYS 1850/600V/LSZH JKT	600 V	4	10
7/10-621Z	7C/10AWG/SYS 1850/600V/LSZH JKT	600 V	7	10
2/8-512Z	2C/8AWG/SYS 1850/600V/LSZH JKT	600 V	2	8
3/8-590Z	3C/8AWG/SYS 1850/600V/LSZH JKT	600 V	3	8
4/8-590Z	4C/8AWG/SYS 1850/600V/LSZH JKT	600 V	4	8
7/8-710Z	7C/8AWG/SYS 1850/600V/LSZH	600 V	7	8
1/6-340Z	1C/6AWG/SYS 1850/600V/LSZH JKT	600 V	1	6
2/6-590Z	2C/6AWG/SYS 1850/600V/LSZH JKT	600 V	2	6
3/6-621Z	3C/6AWG/SYS 1850/600V/LSZH JKT	600 V	3	6
4/6-730Z	4C/6AWG/SYS 1850/600V/LSZH	600 V	4	6

Catalog Number	Item Name	Voltage Rating	Conductor Quantity	AWG Size
1/350-834Z	1C/350KCMIL/SYS 1850/600V/LSZH JKT	600 V	1	350 kcmil
1/4-402Z	1C/4AWG/SYS 1850/600V/LSZH JKT	600 V	1	4
2/4-684Z	2C/4AWG/SYS 1850/600V/LSZH JKT	600 V	2	4
3/4-746Z	3C/4AWG/SYS 1850/600V/LSZH JKT	600 V	3	4
1/3-449Z	1C/3AWG/SYS 1850/600V/LSZH JKT	600 V	1	3
2/3-768Z	2C/3AWG/SYS 1850/600V/LSZH JKT	600 V	2	3
3/3-834Z	3C/3AWG/SYS 1850/600V/LSZH JKT	600 V	3	3
1/250-746Z	1C/250KCMIL/SYS 1850/600V/LSZH JKT	600 V	1	250 kcmil
1/4/0-684Z	1C/4/0AWG/SYS 1850/600V/LSZH JKT	600 V	1	4/0
1/2-449Z	1C/2AWG/SYS 1850/600V/LZSH JKT	600 V	1	2
1/1-496Z	1C/1AWG/SYS 1850/600V/LSZH JKT	600 V	1	1
1/2/0-580Z	1C/2/0AWG/SYS 1850/600V/LSZH JKT	600 V	1	2/0
1/1/0-512Z	1C/1/0AWG/SYS 1850/600V/LSZH JKT	600 V	1	1/0
1/500-1000Z	1C/500KCMIL/SYS 1850/600V/LSZH JKT	600 V	1	500 kcmil

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PYROTENAX

BRASS PLATE



nVent PYROTENAX Brass Plate are a range of brass plates used to avoid induction heating of ferrous metal enclosures where single conductor cables pass through the wall of the enclosure. Available with various numbers of holes and hole sizes. Custom sizes available.

FEATURES

- Simple to install
- Reliable during long life: 30 year product warranty available

SPECIFICATIONS

Contact Material: Brass

Voltage Rating: 600 V max

Catalog Number	Number of Holes
1BP1	1
2BP12	2
2BP34	2
3HO1	3
3HO1-1/4	3
3HO1/2	3
3HO3/4	3
4HO1	4
4HO1-1/4	4
4HO1/2	4
4HO3/4	4
5BP1	5
5BP114	5
5BP12	5
5BP34	5
6BP12	6
6HO1	6

Catalog Number	Number of Holes
6HO1-1/4	6
6HO3/4	6
8BP1	8
8BP114	8
8BP34	8
9BP1	9
9BP114	9
10BP114	10
12BP114	12
12BP34	12
16BP114	16
16BP34	16

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PYROPAK TERMINATION KIT

nVent PYROTENAX Pyropak Termination Kit is a range of mineral insulated (MI) termination kits for 8 AWG and 10 AWG single conductor and all multiconductor copper sheathed cables. The cable end is sealed using either a mastic or epoxy sealing compound, depending on the temperature rating required. Each kit contains enough material to terminate two cable ends. To reduce installation time, MI wiring cables can be supplied with factory terminated ends, using brass gland connectors and epoxy sealed cable ends.

FEATURES

Easy to use

Reliable during long life: 30 year product warranty available

SPECIFICATIONS

Max Operating Temperature: 221 °F

Voltage Rating: 600 V max

Catalog Number	Tail Size	Suitable for Cable Type	Thread Size	Thread Type
PPK15	36 in	3/4-746	1-1/4"	NPT
PPK35	36 in	3/3-834	1-1/4"	NPT
PPK37	36 in	4/6-730	1-1/4"	NPT
PPK1	12 in	2/16-340	1/2"	NPT
PPK2	12 in	2/14-371	1/2"	NPT
PPK3	12 in	3/14-387	1/2"	NPT
PPK30	36 in	2/14-371	1/2"	NPT
PPK32	36 in	2/16-340	1/2"	NPT
PPK34	12 in	2/18-215T	1/2"	NPT
PPK4	12 in	2/12-402	1/2"	NPT
PPK5	36 in	2/12-402	1/2"	NPT
PPK6	12 in	2/18-324TS	1/2"	NPT
PPK31	12 in	2/16-246T	3/4"	NPT
PPK33	12 in	2/16-364TS	3/4"	NPT
PPK8	12 in	3/10-480	3/4"	NPT
PPK9	36 in	3/10-480	3/4"	NPT
PPK10	12 in	3/12-480	3/4"	NPT

Catalog Number	Tail Size	Suitable for Cable Type	Thread Size	Thread Type
PPK11	36 in	3/12-480	3/4"	NPT
PPK12	36 in	3/8-590	3/4"	NPT
PPK13	12 in	3/6-621	3/4"	NPT
PPK14	36 in	3/6-621	3/4"	NPT
PPK36	36 in	4/10-590	3/4"	NPT
PPK7	12 in	4/14-465	3/4"	NPT

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PYROTENAX

QUICKTERM TERMINATION KIT



nVent PYROTENAX QuickTerm Termination Kit is a range of kits used to field-terminate #6 AWG and larger single conductor copper sheathed mineral insulated (MI) wiring cable in non-hazardous areas. It is size-for-size, allowing the MI solid conductor to be joined to an equal size flexible tail with a compression connector. The sized-up QuickTerm kit allows the MI solid conductor to be joined to a larger size flexible tail. It contains enough material to terminate two cable ends, with a special tape provided to seal the end of the MI cable.

FEATURES

- Simple to install: reduces the time required to make the cable termination
- Includes a special connector to splice the solid mineral insulated (MI) conductor to a flexible tail
- Improved flexibility of the tail in the cabinet or enclosure
- Reliable during long life: 30 year product warranty available

SPECIFICATIONS

Max Operating Temperature: 194 °F

Voltage Rating: 600 V max

Catalog Number	Suitable for Cable Type	Thread Size	Thread Type	Tail Size Required (AWG)
QT3	1/1-496	3/4"	NPT	1
QT11	1/3/0-621	1"	NPT	3/0
QT10	1/500-1000	1-1/4"	NPT	500 kcmil
QT12	1/4/0-684	1-1/4"	NPT	4/0
QT8	1/250-746	1-1/4"	NPT	250 kcmil
QT9	1/350-834	1-1/4"	NPT	350 kcmil
QT4	1/1/0-512	3/4"	NPT	1/0
QT1	1/4-402	1/2"	NPT	4
QT13	1/6-340	1/2"	NPT	6
QT14	1/2-449	3/4"	NPT	2
QT5	1/2/0-580	3/4"	NPT	2/0
QT2	1/3-449	3/4"	NPT	3

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 01/06/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 003 R2 **Referencing** 262402 + 262421
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Schneider

Descriptions / comments

Switchboard

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

[X]	REVIEWED
[ ]	REVIEWED AS NOTED
[ ]	REVISE & RESUBMIT

DC SD NO. ELE-003 R2

PROJECT NO. 19-9543 (WTS)

BY K.SPEIDEL

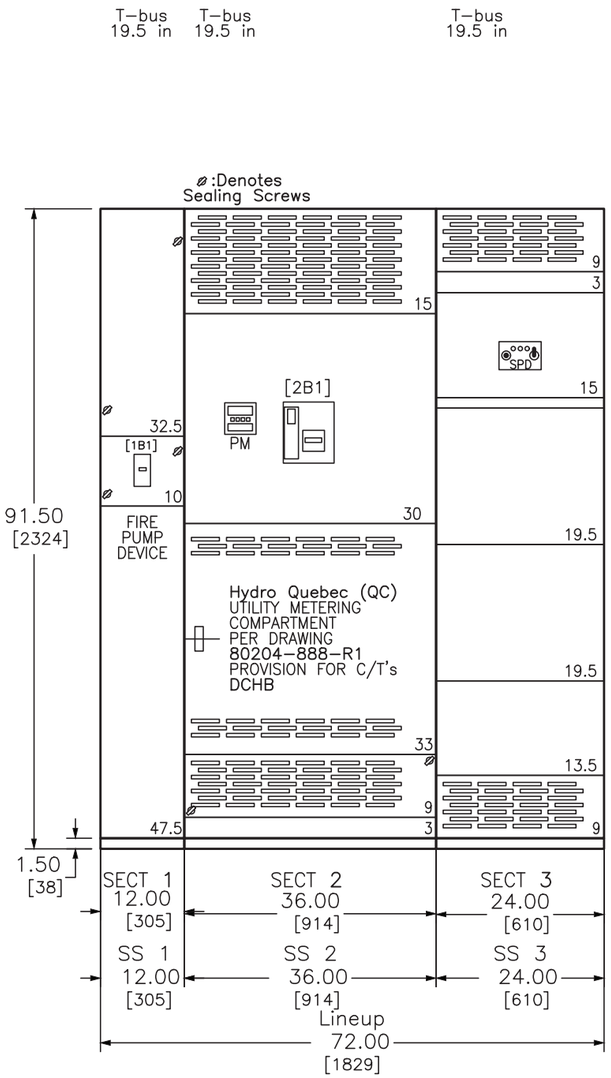
DATE JUNE 1, 2023

DILLON CONSULTING

Pour Approbation

C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



SWITCHBOARD GENERAL NOTES

PRODUCT DESCRIPTION & RATINGS

Power System Data

600Y/347V 3Ph 4W 60Hz / 3 Phase Wye
Solidly Grounded
System Short Circuit Current Rating: 35kA RMS
Incoming Section 2 Cable Through the Top Left of Lineup

Bus System Data

1200A Silver Plated Copper Main Bus
(1) .25x.875 IN/6x22 mm Cu Ground Bus

Enclosure Data

Type 1 Free Standing
Driphoods
Sprinklered Equipment per CEC Part 1 Rule 26–008
Exterior Paint Color: ANSI 49
Front Accessibility Only Required
Handling: Rollers & Lifting Assemblies
Utility Sealing hardware installed on the line side

Estimated Shipping Weight

Shipping Split 1 559.00 lbs / 253.56 kgs
Shipping Split 2 1219.00 lbs / 552.94 kgs
Shipping Split 3 624.00 lbs / 283.05 kgs
Complete Lineup 2402.00 lbs / 1089.55 kgs

Code Standards

CSA C22.2 NO. 31
Suitable for Service Entrance Hydro Quebec (QC)
Not Suitable for Mounting on Combustible Floor

Rating Nameplates

ST1–Section Cable 400A
ST2–Section Bus 1200A
ST3–Section Bus 1200A

PRODUCT INFORMATION

Wiring

All Gray SIS Wire and Min Size #14 Unless Otherwise Noted, and #12 Ground Wire.
NOTE: (90 Deg. C) insulated conductors must be sized per the (75 Deg. C) column of the CE Code Tables.

Instruction Bulletins

Reference 80043–055 For Handling, Installation, Anchoring, Inspection And Maintenance Information

Product Accessories/Options

Seismic Qualified
24V Trip Unit Display Power
Identify Phases with colors: Red (PhA), Black (PhB), Blue (PhC), White (Neutral) and Green (Ground)

DUAL DIMENSIONS: INCHES / MILLIMETERS

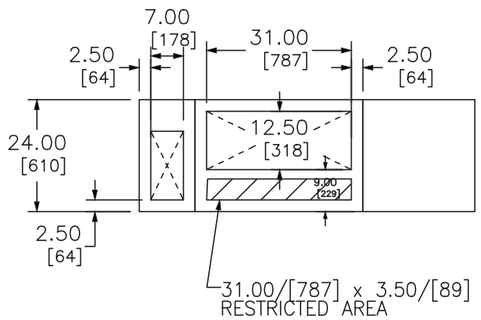
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JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	**SWITCHBOARD CBD–1**
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEVATION VIEW
VERIFIED BY:	MAL		SQUARE D by Schneider Electric
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# **F45121461–001–01**	PG 1 OF 3 REV A

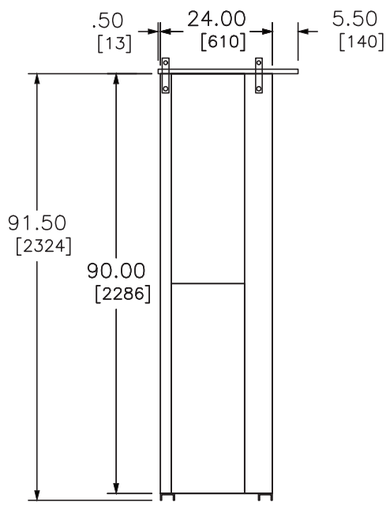
Pour Approbation

C/O #01
01-Jun-2023

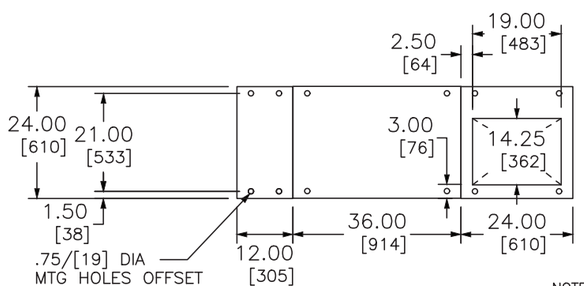
REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



TOP VIEW – FRONT



LEFT SIDE VIEW



FLOOR PLAN – FRONT

NOTE: ALL DEVICES REQUIRING DRILLING OR INSERTION IN MOUNTING PAD SUCH AS CONDUIT, ANCHORING STUDS, SLEEVE INSERTS, ETC. SHOULD BE INSTALLED BEFORE SETTING EQUIPMENT IN PLACE.

DUAL DIMENSIONS: INCHES / MILLIMETERS

45121461001

JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	**SWITCHBOARD CBD–1**
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	SIDE, TOP VIEW & FLOOR PLAN
VERIFIED BY:	MAL		SQUARE D by Schneider Electric
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# **F45121461–001–01**	PG 2 OF 3 REV A

Pour Approbation

C/O #01
01-Jun-2023

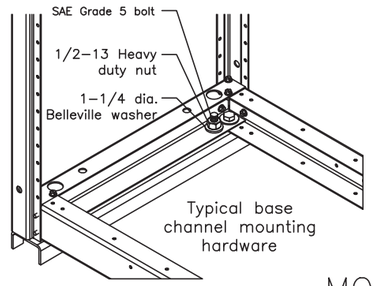
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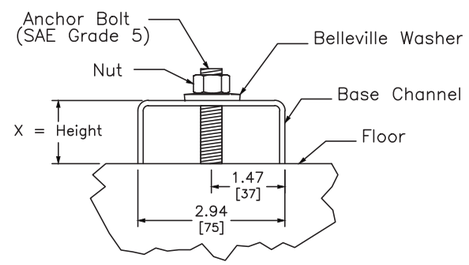
REQUIREMENTS FOR SEISMIC RATING

ANCHORING CONDITIONS:

To Maintain Seismic Qualifications, Equipment Must Be Installed Per Manual (See General Notes) And Per Any Seismic Anchoring Details Provided By Others. Do Not Install Equipment Before Approved Seismic Anchoring Details Have Been Obtained And Site Prepararations Have Been Made In Accordance With The Approved Seismic Anchoring Details. All Post–Installed Anchors Shall Be Approved For Seismic Loads.

Consideration Must Be Made For Conduit Entry Into Each Section When Developing Mounting Pad Reinforcement Locations. See Conduit Entry Details (Floor Plan) For Dimensional Information.





MOUNTING DETAILS

Each Section Must Be Anchored At All Locations (Refer To Floor Plan And Mounting Detail Above). Anchor Bolt Mounting Points Are .75/[19] Diameter Holes Located 1.50/[38] Or 3.00/[76] Above The Base of the Section. Use Dimensions From The Floor Plan To Determine Mounting Locations.

The Belleville Washer (Shown In Detail Above) Used For Anchoring Connections Is A Tested Component And Is Required To Maintain Position Retention Of The Equipment. The Slip Critical Connection Performance Of The Bolted Connection Was Established To The Shake Table Tested Seismic Capacity Of The Equipment As Shown On The Equipment Seismic Certificate Supplied At The Time Of Order.

CENTER OF GRAVITY CALCULATIONS:

Elevation Center Of Gravity: 55 in. (1387.00mm) Up From Floor
Vertical Center Of Gravity: Use Centerline Of Section From Left To Right
Depth Center Of Gravity: Use CenterLine Of The Section From Front To Rear

SECTION WEIGHT:

The Weights Given Below Are The Maximum For Each Section And Should Be Used For Calculating Seismic Anchoring Requirements

Section 1	559.00	lbs /	253.56	kgs
Section 2	1219.00	lbs /	552.94	kgs
Section 3	624.00	lbs /	283.05	kgs

DUAL DIMENSIONS: INCHES
MILLIMETERS

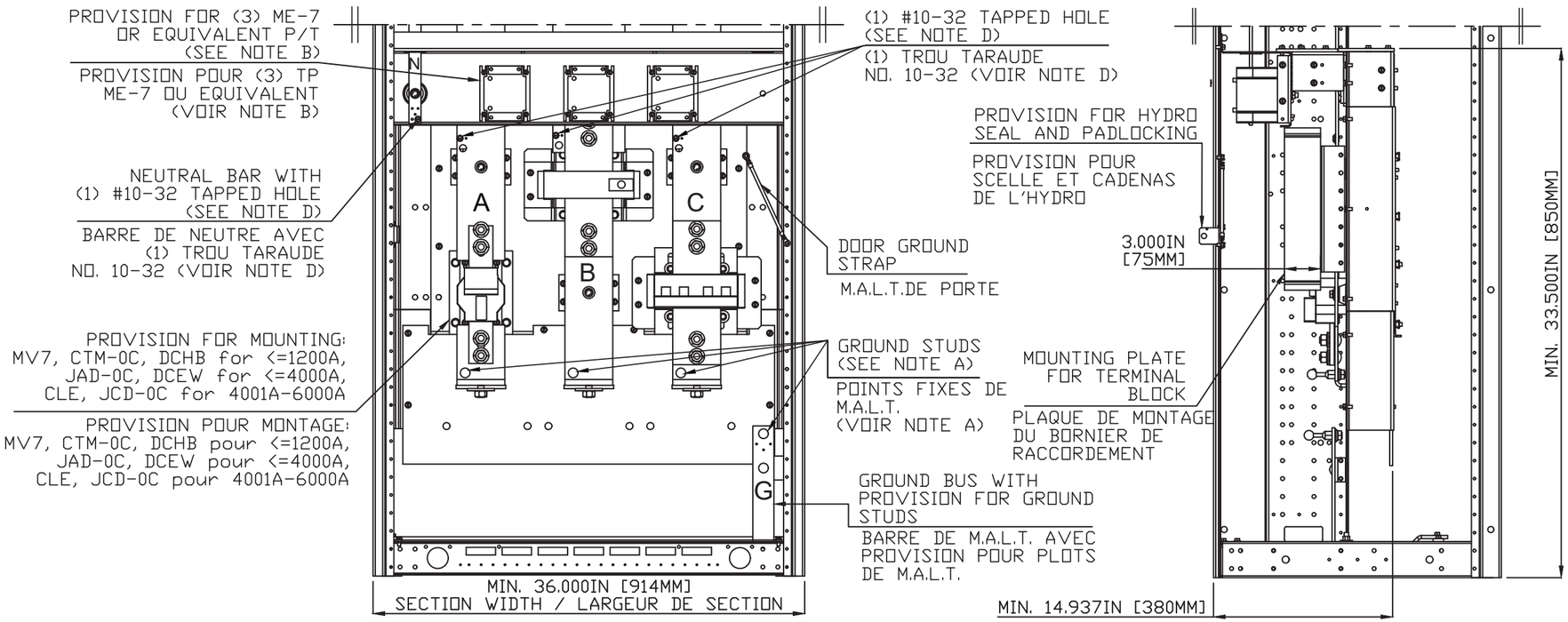
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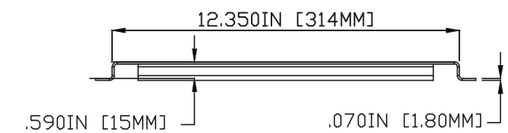
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JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	CENTER OF GRAVITY
VERIFIED BY:	MAL		SQUARE D by Schneider Electric
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# **F45121461–001–01**	PG 3 OF 3 REV A

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C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--	–	----	--	--/--/--





DETAIL VIEW: / VUE DETAILLEE:
MOUNTING PLATE FOR TERMINAL BLOCK.
PLAQUE DE MONTAGE DU BORNIER DE RACCORDEMENT.

NOTES: / REMARQUES:

A) BALL TYPE GROUND STUD 3/4"DIA NEED TO BE PERMANENTELY MOUNTED.
POINTS FIXE DE M.A.L.T. DE 3/4" DE DIAMETRE DOIVENT ETRE INSTALLES EN PERMANANCE.

B) MINIMUM CLEARANCE OF 50MM BETWEEN DOOR AND P/T MUST BE MAINTAINED.
DEGAGEMENT MINIMUM DE 50MM ENTRE LA PORTE ET LES TRANSFORMATEURS DE TENSION DOIT ETRE MAINTENUE.

C) ALL PHASES MUST BE IDENTIFIED BY ADHEZIVE TAPE./ IDENTIFICATION DE PHASE REQUISE SUR CHAQUE PHASE (FAIT AVEC DU RUBAN ADHESIF):
- RED FOR "A" PHASE./ ROUGE POUR PHASE "A".
- BLACK FOR "B" PHASE./ NOIR POUR LA PHASE "B".
- BLUE FOR "C" PHASE./ BLEU POUR LA PHASE "C".
- WHITE FOR "NEUTRAL"./ BLANC POUR LE "NEUTRE".
- GREEN FOR "GROUND"./ VERT POUR LA MISE A LA TERRE.

D) A BRASS #10-32 SLOTTED ROUND HEAD BOLT IS INSTALLED ON EACH PHASE, NEUTRAL AND GROUND BUS.
UN BOULON #10-32 A TETE RONDE FENDUE EST INSTALLE SUR CHAQUE PHASE, SUR LE NEUTRE ET SUR LA BARRE DE M.A.L.T.

Drawing Ref. 80204-888-R1

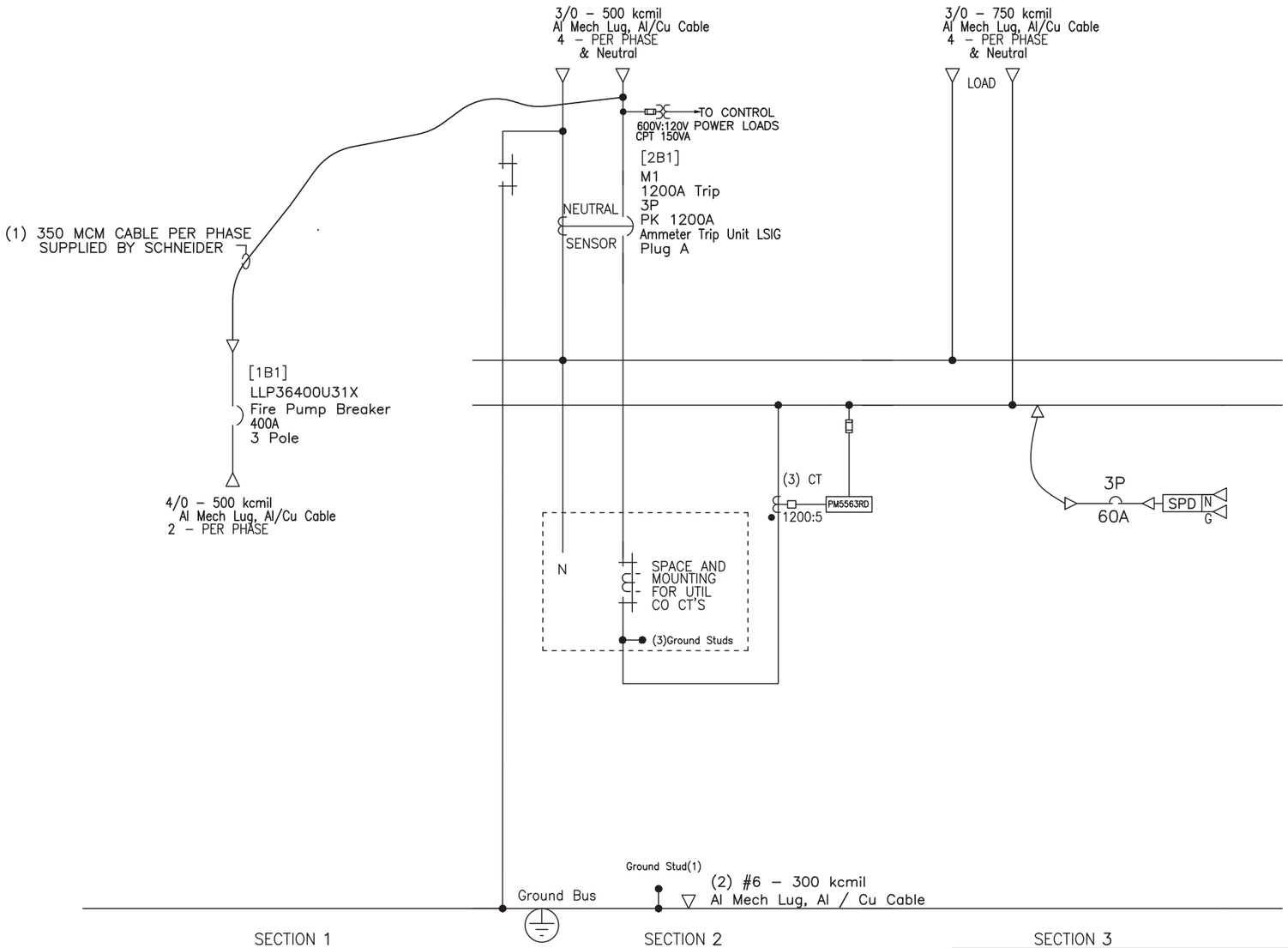
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JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED-2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	UTILITY DRAWING
VERIFIED BY:	MAL		SQUARE D by Schneider Electric
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG#	**F45121461-001-UT** PG 1 OF 1 REV –

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C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	**SWITCHBOARD CBD–1**
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ONE LINE
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# **045121461–001–01**	PG 1 OF 2 REV A

4512146100100001

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C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--

POWER STYLE QED–2 SWITCHBOARD

SECT NO	CKT NO	IMD /GMD CONFIG	DEVICE/FRAME RATING	TRIP AMP	FUSE/ TRIP	#P	DESIGNATION	N/P	LUG/WIRE INFORMATION				ACCESSORIES / NOTES
									QTY	PHASE WIRE RANGE	QTY	NEUT WIRE RANGE	
1	FPB	–	Fire Pump Breaker	400A	–	3P	–	No	2	4/0 – 500 kcmil	–	–	PLA
2	M1	FIX	PK 1200A Plug A	1200A	A–LSIG	3P		No	4	3/0 – 500 kcmil	4	3/0 – 500 kcmil	GF PLA,PM5K,TU
2	UCT	–	1200A	–	–	–	Hydro Quebec (QC)	No	–	–	–	–	
3	–	–	240kA SPD	–	–	–	–	–	–	–	–	–	SPD

LEGEND	
GF	Ground Fault
PLA	Padlock Attachment–Fixed
PM5K	Power Meter PM5563RD
SPD	Surge Protection Device
TU	24V Trip Unit Display Power

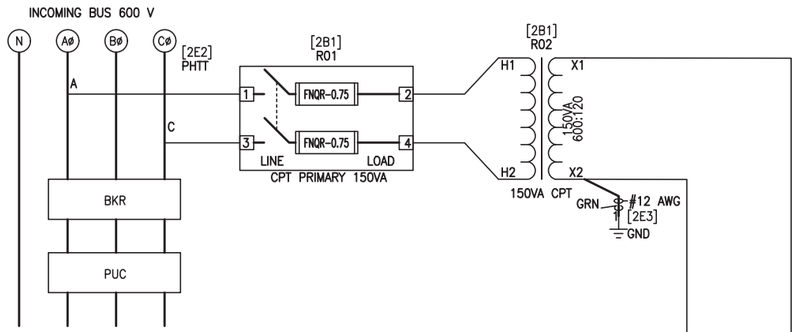
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JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	**SWITCHBOARD CBD–1**
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	SCHEDULE
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# **045121461–001–01**	PG 2 OF 2 REV A

Pour Approbation

C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



SECTION 2

NOTES:

APPLICABLE TO ALL SCHEMATICS.

1. ALL WIRING TO BE TYPE "SIS".
2. WIRE SIZE SHALL BE #14 AWG UNLESS OTHERWISE NOTED.

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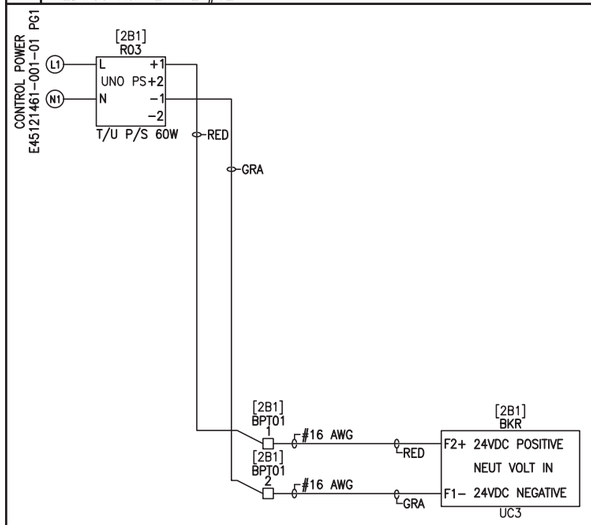
CONTROL POWER

JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	SWITCHBOARD CBD-1
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED-2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEMENTARY DIAGRAMS
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# E45121461-001-01	PG 1 OF 1 REV A

Pour Approbation

C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



SECTION 2

TRIP UNIT DISPLAY

NOTES:

1. ALL WIRING TO BE TYPE "SIS".
2. WIRE SIZE SHALL BE #14 AWG UNLESS OTHERWISE NOTED.

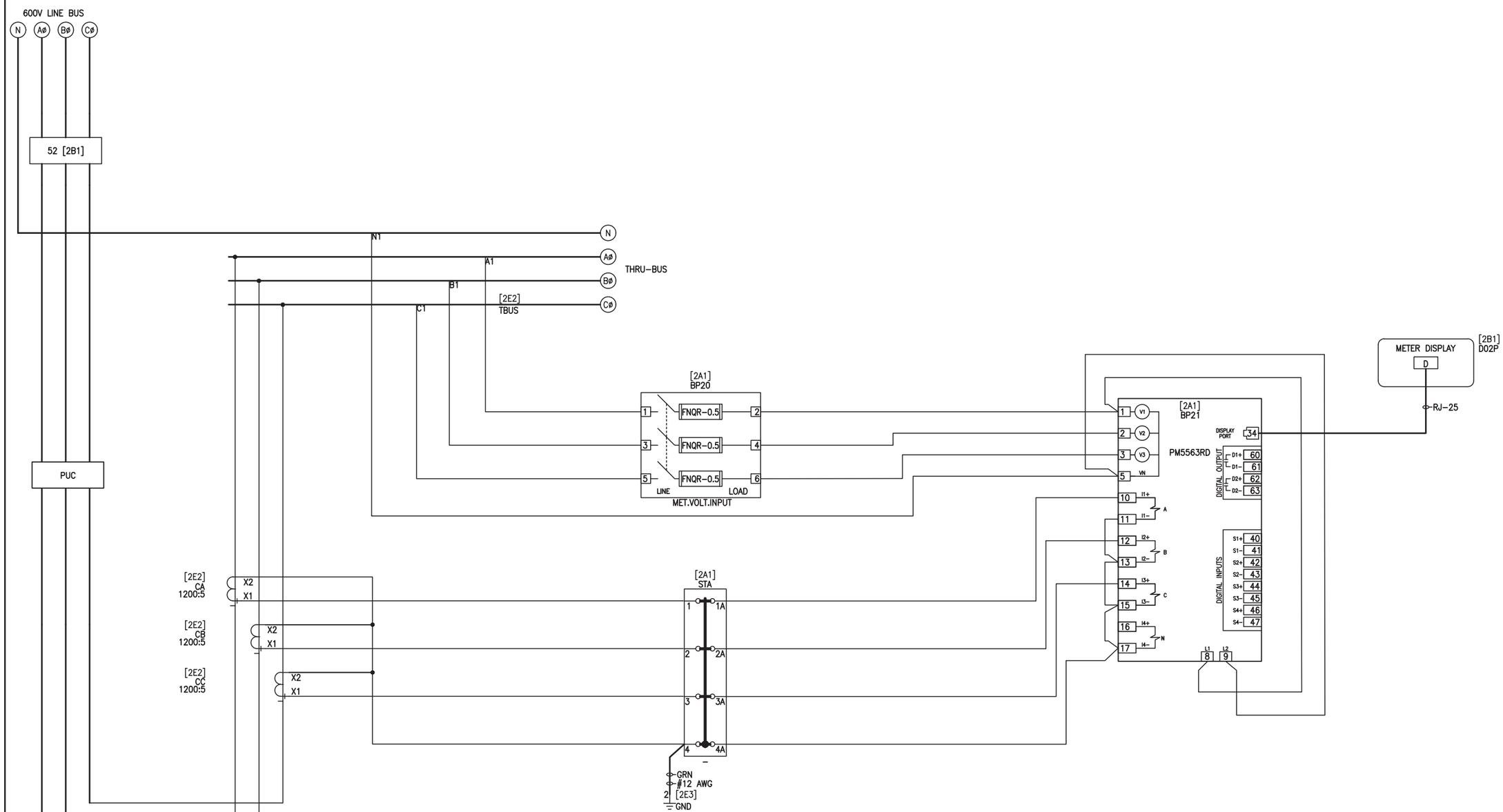
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JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEMENTARY DIAGRAMS
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# E45121461–001–02	PG 1 OF 1 REV A

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C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



MAIN METERING

NOTES:
1. WIRE SIZE SHALL BE #14 AWG UNLESS OTHERWISE NOTED.
2. GROUND WIRE SIZE FOR CANADIAN ORDERS SHALL BE #12 AWG.
3. CONTROL POWER CAN BE EITHER
   A. DRAWN FROM FUSED VOLTAGE INPUTS ONLY WHEN LINE-TO-NEUTRAL VOLTAGE IS BELOW 480V AC,
   B. OR SEPARATELY DERIVED 120V CONTROL POWER ALSO ACCEPTABLE.
4. FOR ADDITIONAL INFORMATION AND COMMUNICATION WIRING SEE POWERLOGIC POWER METER SERIES 5000 INSTRUCTION BULLETIN.
5. MULTIPLE METERS MAY BE FED BY SAME DISCONNECT. INDIVIDUAL FUSING IS REQUIRED.

JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	SWITCHBOARD CBD-1
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED-2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEMENTARY DIAGRAMS
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
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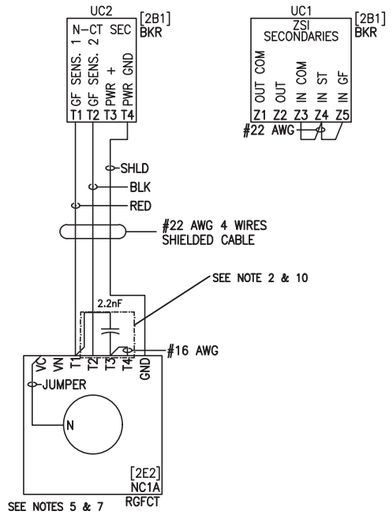
Pour Approbation

C/O #01
01-Jun-2023

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MAIN BREAKER

CELL [2B1]



SECTION 2

NOTES:
1. PHOENIX CONNECTOR PLUGS INTO THE TOP OF THE CIRCUIT BREAKER TRIP UNIT, LOCATED ON THE FRONT OF THE BREAKER.
2. INSTALL 3/4 INCH FLEXIBLE CONDUIT AROUND SHIELDED CONDUCTORS.
3. ALL UNSHIELDED CONDUCTORS TO BE #14 UNLESS OTHERWISE NOTED.
4. 2 TERMINALS HAVE DUAL NAMES: (M3 & T1) AND (T4 & F1). REFER TO INSTRUCTION BULLETIN 48049–243–XX.
5. REMOVE THE FACTORY INSTALLED JUMPER BETWEEN M3,T1 AND T2.
6. RADIAL CTs MANUFACTURED BEFORE 02JULY2001 WILL HAVE TERMINALS LABELED DIFFERENTLY. THE CROSS REFERENCE IS AS FOLLOWS: SG1=T2, SG2=T1, X1=T3, X2=T4.
7. CONNECT THE "H1" SIDE OF THE NEUTRAL CT TO THE SAME SOURCE/LOAD AS THE "OFF" END OF THE CIRCUIT BREAKER.
8. IF Vn NEUTRAL VOLTAGE CONNECTION KIT IS TOO SHORT TO REACH Vn ON NEUTRAL CT USE TERMINAL BLOCK (9080GR6) WITH #14 AWG WHITE WIRE. A STEP DOWN BUTT SPLICE (25101–22607) CAN BE SUBSTITUTED FOR THE TERMINAL BLOCK WHEN MOUNTING BECOMES AN ISSUE
9. INSTALL 2.2 nF CAPACITOR & JUMPER IF NOT ALREADY PRESENT.
10. REFERENCE BULLETIN 48041–082–01 FOR ADDITIONAL INFORMATION.
11. DO NOT REMOVE FACTORY INSTALLED Z3–Z4 OR Z3–Z5 JUMPER UNLESS DICTATED BY SYSTEM ZSI WIRING.

RADIAL GROUND FAULT PROTECTION

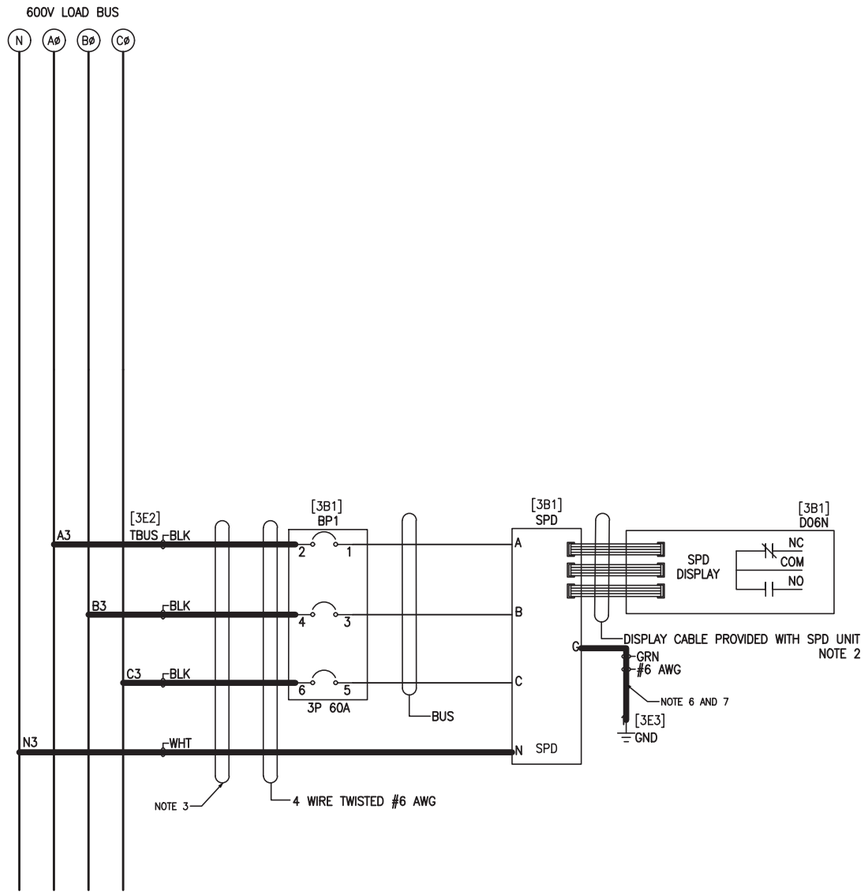
JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	SWITCHBOARD CBD–1
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEMENTARY DIAGRAMS
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# E45121461–001–05	PG 1 OF 1 REV –

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C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--	–	----	--	--/--/--
A	REDWGS AS PER REV#02	GH	05/31/2023	–	----	--	--/--/--	–	----	--	--/--/--



NOTES:

1. DRY CONTACTS FOR REMOTE MONITOR, ETC. LOCATED ON REAR OF DISPLAY.
2. PATCH CABLES MUST BE PROTECTED WHERE THEY CROSS THE HINGE SIDE DOOR FLANGE FROM THE DISPLAY DOOR TO INSTRUMENT COMPARTMENT. PATCH CABLES MUST BE KEPT SEPARATED FROM POWER WIRING.
3. CABLES MUST BE AS SHORT AS POSSIBLE WITH A MINIMUM NUMBER OF LARGE RADIUS BENDS. MAXIMUM LENGTH OF CABLE FROM THE BUS TAPS TO THE DISCONNECT SHALL NOT EXCEED 8 FEET. ALL CONDUCTORS INCLUDING PHASES, NEUTRAL, & GROUND MUST BE TWISTED TOGETHER 1 TIME EVERY 2 FEET FOR AS LONG AS POSSIBLE ALONG THEIR ROUTING WITHIN THE SWITCHBOARD. MAXIMUM NUMBER OF BENDS SHALL NOT EXCEED 4 AND MINIMUM BEND RADIUS SHALL BE 3 INCHES. CABLES MUST BE SECURELY FASTENED THROUGHOUT THEIR LENGTH. ROUTE CABLES OUT HOLE IN INSTRUMENT COMPARTMENT IF BUS TAPS ARE AT BOTTOM.
4. FOR EQUIPMENT BUILT TO ANSI C37.20.1 OR CSA C22.2 No. 31–M89, SINGLE CONDUCTOR CABLE MAY BE TYPE SIS AND COLOR CODES MAY BE DISREGARDED FOR SINGLE CONDUCTORS.
5. CONNECT THE SPD NEUTRAL LUG TO THE GROUND BUS WHEN THE SYSTEM IS 3 PHASE, 4 WIRE AND THE NEUTRAL BUS IS NOT PRESENT WITHIN THE EQUIPMENT.
6. LEGACY–WHEN THE SPD IS MOUNTED IN A 19.5" METERING COMPARTMENT, CONNECT THE GROUND WIRE TO THE GROUND BUS EXTENSION ASSEMBLY THAT IS MOUNTED ON THE RIGHT SIDE OF THE SECTION.
7. SERIES 2–ROUTE NEUTRAL AND GROUND CABLE OUT THE CLOSEST GROMMET. LEAVE ADEQUATE SLACK IN THE WIRING TO ALLOW THE TVSS UNIT TO PULL FORWARD.

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SURGE PROTECTIVE DEVICE (SPD)

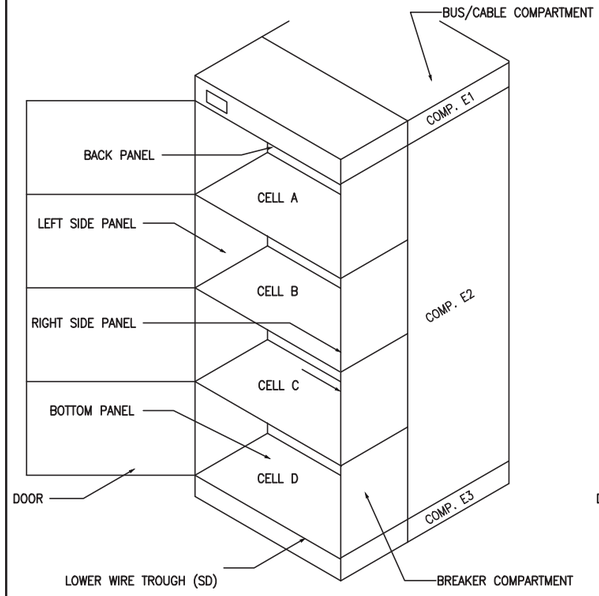
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JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ELEMENTARY DIAGRAMS
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# E45121461–001–09	PG 1 OF 1 REV A

Pour Approbation

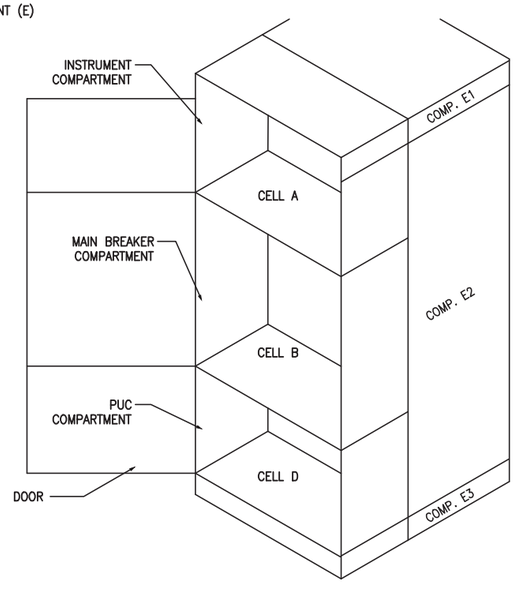
C/O #01
01-Jun-2023

REV	DESCRIPTION	BY	DATE
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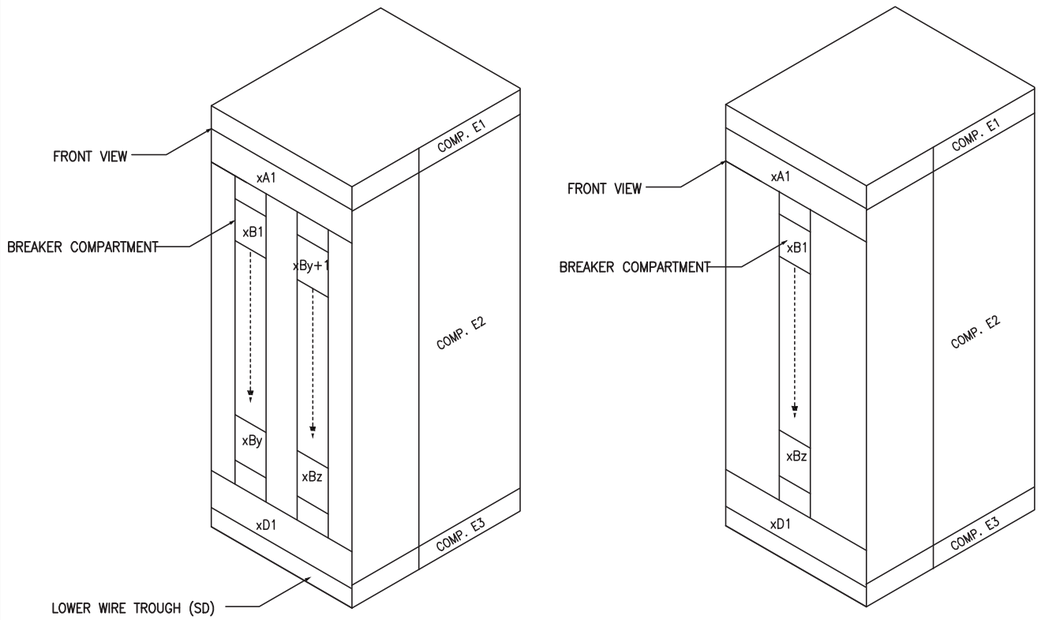
STANDARD LAYOUT FOR TYPICAL FOUR HIGH STACK SWITCHBOARD



STANDARD LAYOUT FOR TYPICAL MAIN/ SUBMAIN SECTION



TYPICAL I–LINE PANEL



DEVICE LOCATOR DESIGNATIONS

BPz = ANY DEVICE LOCATED ON COMPARTMENT BACK MOUNTING PANEL.
BPTz = TERMINAL BLOCK LOCATED ON COMPARTMENT BACK MOUNTING PANEL.
BKR = CIRCUIT BREAKER.
D##z = DEVICES LOCATED ON DOOR.
Lz = ANY DEVICE LOCATED ON LEFT SIDE PANEL OF A COMPARTMENT.
LTz = TERMINAL BLOCK LOCATED ON LEFT SIDE PANEL OF A COMPARTMENT.
Rz = ANY DEVICE LOCATED ON RIGHT SIDE PANEL OF A COMPARTMENT.
RTz = TERMINAL BLOCK LOCATED ON RIGHT SIDE PANEL OF A COMPARTMENT.
xSD = SHIPPING SPLIT LOCATED IN CELL D OR E3 COMPARTMENT.
XTz = TERMINAL BLOCK LOCATED ON BOTTOM PANEL OF A COMPARTMENT.
Xz = ANY DEVICE LOCATED ON BOTTOM PANEL OF A COMPARTMENT.

[XYZ] SECTION/CELL LOCATION

COMPARTMENT OR CELL SUBDIVISION
1–3 = EACH COMPARTMENT OR CELL MAY BE SUBDIVIDED (SEE LAYOUT).

SECTION LOCATION = A,B,C,D,E,
A = TOP CELL
B = SECOND TO TOP CELL
C = SECOND TO BOTTOM CELL
D = BOTTOM CELL
E = BUS / CABLE COMPARTMENT

SECTION NUMBER
WHEN VIEWING LINE UP FROM THE FRONT, THE LEFT MOST VERTICAL SECTION IS SECTION 1.

SPECIAL SPECIFIC DEVICE DESIGNATIONS

SSTz_x = SHIPPING SPLIT TERMINAL BLOCK.
STz = CURRENT TRANSFORMER SHORTING TERMINAL BLOCK.
EHz = HEATER ELEMENTS
THz = THERMOSTATS
GNDz = SECTION GROUND BUS CONNECTION
PHTT = PHASE TAP TOP
PHTB = PHASE TAP BOTTOM
TBUS = THRU–BUS TAP
TBUSL = THRU–BUS LEFT (TIE)
TBUSR = THRU–BUS RIGHT (TIE)
NBUS = NEUTRAL TAP (I–LINE)

SST1_1 : 120Vac/Vdc
SST2_1 : 24Vdc
SST6_1 : MDGF Wiring

[XYZW] SECTION/CELL LOCATION BACK TO BACK

SECTION NUMBER
WHEN VIEWING LINE UP FROM THE FRONT, THE LEFT MOST VERTICAL SECTION IS SECTION 1.
F = FRONT
R = REAR

FROM/TO WIRING INFORMATION

`1=BKR–914#16,BRK–913`

- 1 = TERMINAL NUMBER
- BKR = DEVICE AT OTHER END OF WIRE
- 914 = CONNECTION ON DEVICE AT OTHER END OF WIRE.
- #16 = WIRE AWG
- BRK = DEVICE AT OTHER END OF WIRE
- 913 = CONNECTION ON DEVICE AT OTHER END OF WIRE.

EXPLANATION
WIRE CONNECTS TO THIS DEVICE, TERMINAL 1. THE OTHER END OF THE WIRE CONNECTS TO DEVICE "BKR", TERMINAL "914". THE WIRE TYPE IS 16 AWG, SIS. THE WIRE ALSO CONNECTS TO DEVICE "BKR", TERMINAL 913. WIRE TYPE OF THE SECOND CONNECTION IS TYPE IS 14 AWG, SIS.

`10=[1D1]BKR–Z1#18`

- 10 = TERMINAL NUMBER
- [1D1] = SECTION/CELL LOCATION
- BKR = DEVICE AT OTHER END OF WIRE
- Z1 = CONNECTION ON DEVICE AT OTHER END OF WIRE.
- #18 = WIRE AWG

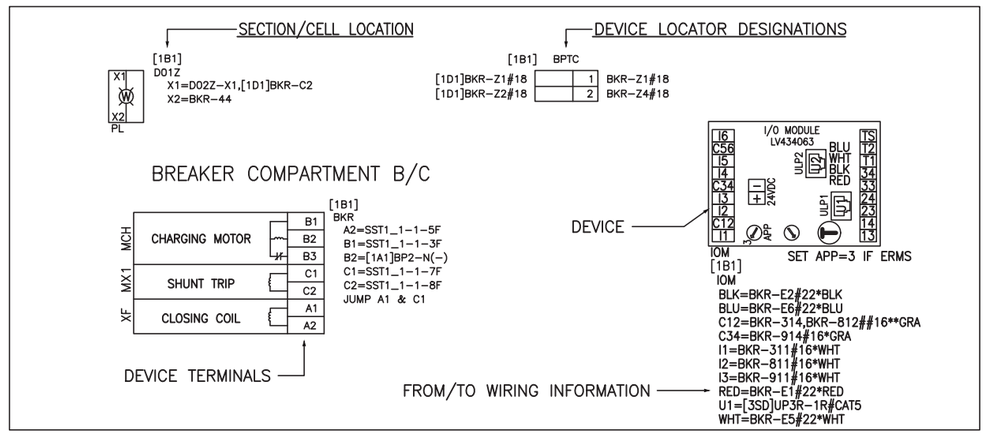
EXPLANATION
WIRE CONNECTS TO THIS DEVICE, TERMINAL 10. THE OTHER END OF THE WIRE CONNECTS TO DEVICE "BKR", IN COMPARTMENT "1D1", TERMINAL "Z1". TYPE IS 18 AWG, SIS.

WIRE AWG
IF NO WIRE SIZE IS GIVEN, WIRE IS 14 AWG, TYPE SIS.

SECTION/CELL LOCATION
IF NO SECTION/CELL LOCATION IS GIVEN, WIRE WILL STAY WITHIN THE CURRENT CELL.

TYPICAL WIRE SLEEVE MARKER

FROM [1B1]BKR–F2+
TO [2D1]BKR–F2+



ELEMENTARY & WIRING DIAGRAM LAYOUT INFORMATION (NOT TO SCALE)

JOB NAME:	IQALUIT WASTE TRANSFER STATION	EQUIPMENT DESIGNATION:	SWITCHBOARD CBD–1
JOB LOCATION:	IQALUIT NU	EQUIPMENT TYPE:	QED–2 SWITCHBOARD
DRAWN BY:	MIGUEL ANGEL LOPEZ	DRAWING TYPE:	ISOMETRIC VIEW/COMPARTMENT DESIGNATION
VERIFIED BY:	MAL		
DATE:	APRIL 14 2023		
DRAWING STATUS:	APPROVAL	DWG# I45121461–001–01	PG 1 OF 1 REV –

45121461001001

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 16/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 004 R1 **Referencing** 262417 + 262821
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Schneider

Descriptions / comments

PANELBOARD : PNL-1, PNL-2E, PNL-3, PNL-A-E, PNL-B
-- for reapproval (panel PNL-C and PNL-D by other)

Comments of Professionnal :

- See comments about cable entry and SPD's

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb 17, 2023

DILLON CONSULTING

Article	Quant.	Numéro de catalogue / détails
1	1	**Désignation:**PNL-1 **Détails du produit :** 1-ILINE ML PNLB (INT BOX TRIM)-I-Line Panelboard Consisting of 600Y/347V 3Ph 4W 60Hz SCCR: 35kA Feeders Series Rated w/ PK Circuit Breaker SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 1200A Incoming Conductors: 1 - (4) 3/0 - 500kcmil Bus: 1200A Rated Copper: Tin Plated CU Ground Bar 63" of Mounting Inches Type 2 (Driphood)Box: 80H x 42W x 9.5D Incoming: Bottom Trim: Surface with Door Box Cat No: HC4268DBEXBSEXTSH Front Cat No: HCW68TSD Ref. Drawing: PBA419 Type: HCP Feeders: 1 - 20A/3P HJ 2 - 35A/3P HJ 1 - 400AS/300AT/3P LL Ammeter LSI 80% 1 - 600AS/600AT/3P LL Ammeter LSIG 80% 1 - 60A/3P HJ 1 - 100A/3P HJ 1 - 150AS/110AT/3P HJ Ammeter LSI 80% Optional Features: Ship Completely Assembled,Increase Bottom Gutter 12",Copper Solid Neutral,Drip Hood,Temporary Fully Assembled Lead Time Extension,Copper Ground Bar **Jours estimés pour expédier, excluant le transit:** 226 jours ouvrables après relâche pour fabrication du client. Voir les clauses et conditions de cette soumission.

Article	Quant.	Numéro de catalogue / détails
2	1	**Désignation:**PNL-2-E **Détails du produit :** 1-NF SPD Panel (INTERIOR)-NF Panelboard Consisting of 600Y/347V 3Ph 4W 60Hz SCCR: 35kA Feeders Series Rated w/ LL Circuit Breaker SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 400A Incoming Conductors: 1 - 1/0 - 750, (2) 1/0 - 350 kcmil Bus: 400A Rated Copper: Silver/Tin Plated CU Ground Bar 42 Circuit Interior Type 2 (Driphood)Box: 68H x 20W x 5.75D Incoming: Bottom Trim: Surface with Door Box Cat No: MH68H Front Cat No: NC68VS Ref. Drawing: PBA551T Feeders: 1 - 90A/3P EJB 2 - 60A/3P EJB 2 - 50A/3P EJB 7 - 15A/3P EJB 1 - 20A/3P EJB Optional Features: Standard Panel (Box Ahead),Copper Solid Neutral,Drip Hood,Copper Ground Bar 1-MH68H-MH BOX 68 IN LONG WITH DRIPHOOD 1-NC68VS-20" X 68" SURFACE TRIM

top fed, top exit

Jours estimés pour expédier, excluant le transit: 98 jours ouvrables après relâche pour fabrication du client. Voir les clauses et conditions de cette soumission.

Article	Quant.	Numéro de catalogue / détails
3	1	**Désignation:**PNL-3 **Détails du produit :** 1-ILINE ML PNLB (INT BOX TRIM)-I-Line Panelboard Consisting of 480Y/277V 3Ph 4W 60Hz SCCR: 35kA Fully Rated Main Lug Only: 800A Incoming Conductors: 1 - (3) 3/0 - 500 kcmil AL Ground Bar Bus: 800A Rated Copper: Tin Plated 45" of Mounting Inches Type 2 (Driphood)Box: 59H x 42W x 9.5D Incoming: Top Trim: Surface with Door Box Cat No: HC4259DBH Front Cat No: HCW59TSD Ref. Drawing: PBA418 Type: HCP Feeders: 1 - 250A/3P JG 2 - 100A/3P BG Prepared Space 2 - 80A/3P BG 1 - 400AS/300AT/3P LG Ammeter LSI 80% 1 - 25A/3P BG Optional Features: Ship Completely Assembled,Drip Hood,Standard Solid Neutral,Temporary Fully Assembled Lead Time Extension,Standard Ground Bar **Jours estimés pour expédier, excluant le transit:** 75 jours ouvrables après relâche pour fabrication du client. Voir les clauses et conditions de cette soumission.

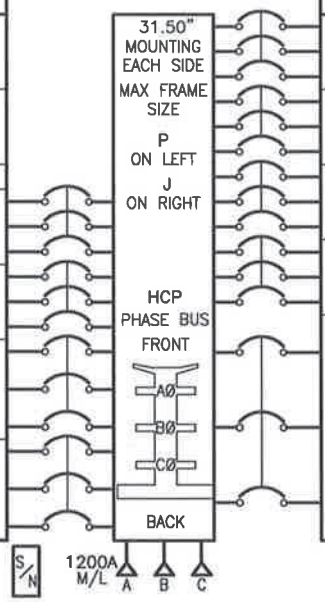
Article	Quant.	Numéro de catalogue / détails
4	1	**Désignation:**PNL-A-E **Détails du produit :** 1-NQ SPD Panel (INTERIOR)-NQ Panelboard Consisting of 208Y/120V 3Ph 4W 60Hz SCCR: 10kA Fully Rated SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 225A Incoming Conductors: 1 - #6 - 350 kcmil Bus: 225A Rated Copper: Silver/Tin Plated CU Ground Bar 54 Circuit Interior Type 2 (Driphood)Box: 38H x 20W x 5.75D Incoming: Bottom Trim: Surface with Door Box Cat No: MH38H Front Cat No: NC38S Ref. Drawing: PBA701A Feeders: 1 - 30A/3P QOB 4 - 20A/2P QOB 2 - 20A/1P QOB 25 - 15A/1P QOB 4 - 15A/1P QOB Prepared Space Optional Features: Standard Panel (Box Ahead),Copper Solid Neutral,Drip Hood,SPD Model SBA,Copper Ground Bar 1-MH38H-MH BOX 38 IN LONG WITH DRIPHOOD 1-NC38S-20 X 38 SURFACE TRIM **Jours estimés pour expédier, excluant le transit:** 45 jours ouvrables après relâche pour fabrication du client. Voir les clauses et conditions de cette soumission.

Article	Quant.	Numéro de catalogue / détails
5	1	**Désignation:**PNL-B **Détails du produit :** 1-NQ SPD Panel (INTERIOR)-NQ Panelboard

Consisting of
208Y/120V 3Ph 4W 60Hz SCCR: 10kA
Fully Rated
SPD 240kA per Phase/120kA per Mode
SPD line to grd protect
w/SPD Surge Counter
w/SPD Dry Contacts
Main Lug Only: 400A
Incoming Conductors: 1 - 1/0 - 750, (2) 1/0 - 350 kcmil
Bus: 400A Rated Copper: Silver/Tin Plated
CU Ground Bar
84 Circuit Interior
Type 2 (Driphood)Box: 68H x 20W x 5.75D
Incoming: Bottom Trim: Surface with Door
Box Cat No: MH68H Front Cat No: NC68VS
Ref. Drawing: PBA709T
Feeders:
4 - 25A/3P QOB
1 - 20A/3P QOB
4 - 20A/2P QOB
21 - 20A/1P QOB
18 - 15A/1P QOB
10 - 15A/1P QOB Prepared Space
Optional Features:
Standard Panel (Box Ahead),Copper Solid Neutral,Drip Hood,SPD Model SBA,Copper Ground Bar
1-MH68H-MH BOX 68 IN LONG WITH DRIPHOOD
1-NC68VS-20" X 68" SURFACE TRIM
Jours estimés pour expédier, excluant le transit: 45 jours ouvrables après relâche pour fabrication du client. Voir les clauses et conditions de cette soumission.

REV	DESCRIPTION	BY	DATE
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–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P	PHASE BUS CONN
	4.50" BLANK			
	4.50" BLANK			
	1.50" BLANK			
1		HJ	20/3	A B C
3		HJ	35/3	A B C
5	Ammeter LSI 80%	LL	400AS 300AT/3	A B C
7	Ammeter LSIG 80%	LL	600AS 600AT/3	A B C



PHASE BUS CONN	RATING AMP/P	TYPE	ACCESSORIES	CKT NO
C B A	35/3	HJ		2
C B A	60/3	HJ		4
C B A	100/3	HJ		6
C B A	150AS 110AT/3	HJ	Ammeter LSI 80%	8
C	60A/3	HR	SPD	
B				
A				

top?

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: HCW68TSD
BOX CAT#: HC4268DBEXBSEXTSH

DIMENSIONS:
80"(2032mm)Hx42"(1067mm)Wx9.5"(241mm)D
PBA: 419
Tin Plated

OPTIONAL FEATURES:
SHIP COMPLETELY ASSEMBLED
DRIP HOOD
Copper GROUND BAR
INCREASE BOTTOM END GUTTER 12"
COPPER SOLID NEUTRAL
SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

ELECTRICAL DATA

SYSTEM: 600Y/347V 3Ph 4W 60Hz
System Ampacity: 1200A
35kA SYMS. SCCR
Series Rated w/ PK

MAIN: MAIN LUGS : 1200A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – (4) 3/0 – 500kcmil

----------BRANCH SUMMATION----------

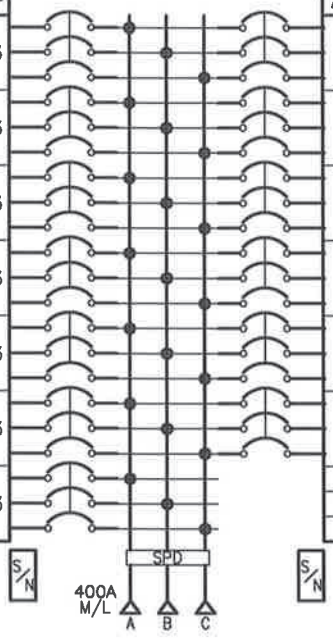
1 – 20A/3P HJ	2 – 35A/3P HJ
1 – 300A/3P LL AMM LSI	1 – 600A/3P LL AMM LSIG
1 – 60A/3P HJ	1 – 100A/3P HJ
1 – 110A/3P HJ AMM LSI	

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL-1
JOB LOCATION:		EQUIPMENT TYPE:	I-Line (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-3459378-97641928-01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P
1			
3		EJB	90/3
5			
7			
9		EJB	60/3
11			
13			
15		EJB	50/3
17			
19			
21		EJB	15/3
23			
25			
27		EJB	15/3
29			
31			
33		EJB	15/3
35			
37			
39		EJB	15/3
41			

RATING AMP/P	TYPE	ACCESSORIES	CKT NO
			2
60/3	EJB		4
			6
			8
50/3	EJB		10
			12
			14
20/3	EJB		16
			18
			20
15/3	EJB		22
			24
			26
15/3	EJB		28
			30
			32
15/3	EJB		34
			36
			38
			40
		BLANK	42



SPD

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: NC68VS
BOX CAT#: MH68H

DIMENSIONS:
68"(1727mm)Hx20"(508mm)Wx5.75"(146mm)D
PBA: 551T

BUSSING: 400A RATED COPPER BUS
Silver/Tin Plated

OPTIONAL FEATURES:
DRIP HOOD
Copper GROUND BAR
COPPER SOLID NEUTRAL
SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

ELECTRICAL DATA

SYSTEM: 600Y/347V 3Ph 4W 60Hz
System Ampacity: 400A
35kA SYMS. SCCR
Series Rated w/ LL

MAIN: MAIN LUGS : 400A
Bottom FEED

Top fed?

INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – 1/0 – 750, (2) 1/0 – 350 kcmil

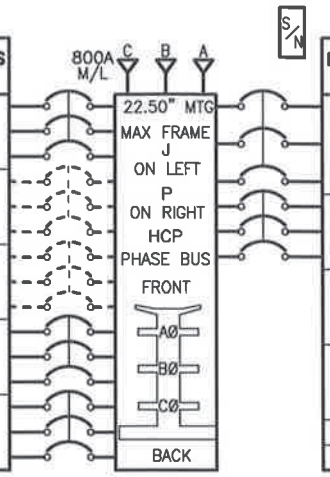
----------BRANCH SUMMATION----------

1 – 90A/3P EJB
2 – 50A/3P EJB
1 – 20A/3P EJB
2 – 60A/3P EJB
7 – 15A/3P EJB

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL-2-E
JOB LOCATION:		EQUIPMENT TYPE:	NF (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# 0Q-3459378-97642539-01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE				
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CKT NO	ACCESSORIES	TYPE	RATING AMP/P	PHASE BUS CONN
1		JG	250/3	A B C
3	PS 4.50" FP	BG	100/3	A B C
5	PS 4.50" FP	BG	100/3	A B C
7		BG	80/3	A B C
9		BG	80/3	A B C



PHASE BUS CONN	RATING AMP/P	TYPE	ACCESSORIES	CKT NO
C B A	400AS 300AT/3	LG	Ammeter LSI 80%	2
C B A	25/3	BG		4
			4.50" BLANK	
			4.50" BLANK	
			1.50" BLANK	
			1.50" BLANK	

SPD Missing

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: HCW59TSD
BOX CAT#: HC4259DBH
DIMENSIONS:
59''(1499mm)Hx42"(1067mm)Wx9.5''(241mm)D
PBA: 418
BUSSING: 800A RATED COPPER BUS
Tin Plated
OPTIONAL FEATURES:
SHIP COMPLETELY ASSEMBLED
DRIP HOOD
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR

ELECTRICAL DATA

SYSTEM: 480Y/277V 3Ph 4W 60Hz
System Ampacity: 800A
35kA SYMS. SCCR
Fully Rated
MAIN: MAIN LUGS : 800A
Top FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – (3) 3/0 – 500 kcmil

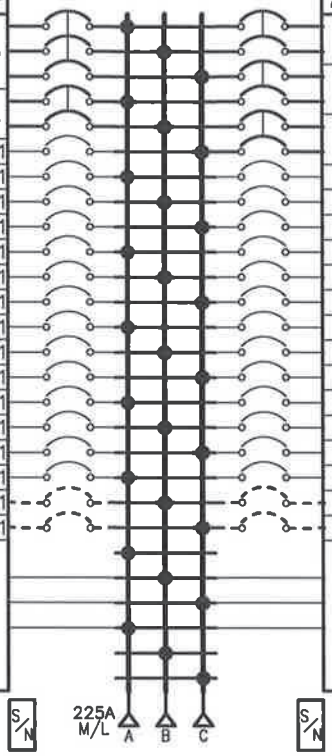
----------BRANCH SUMMATION----------

1 – 250A/3P JG
2 – 80A/3P BG
1 – 25A/3P BG
2 – 100A/3P–PS BG
1 – 300A/3P LG AMM LSI

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL–3
JOB LOCATION:		EQUIPMENT TYPE:	I–Line (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# OQ–3459378–97643199–01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE				
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P
1		QOB	30/3
3			
5			
7		QOB	20/2
9			
11		QOB	20/1
13		QOB	20/1
15		QOB	15/1
17		QOB	15/1
19		QOB	15/1
21		QOB	15/1
23		QOB	15/1
25		QOB	15/1
27		QOB	15/1
29		QOB	15/1
31		QOB	15/1
33		QOB	15/1
35		QOB	15/1
37		QOB	15/1
39	PREPARED SPACE	QOB	15/1
41	PREPARED SPACE	QOB	15/1
	Surge Counter Dry Contacts	SPD 240kA/3	



RATING AMP/P	TYPE	ACCESSORIES	CKT NO
20/2	QOB		2
			4
20/2	QOB		6
			8
20/2	QOB		10
			12
15/1	QOB		14
15/1	QOB		16
15/1	QOB		18
15/1	QOB		20
15/1	QOB		22
15/1	QOB		24
15/1	QOB		26
15/1	QOB		28
15/1	QOB		30
15/1	QOB		32
15/1	QOB		34
15/1	QOB		36
15/1	QOB		38
15/1	QOB	PREPARED SPACE	40
15/1	QOB	PREPARED SPACE	42
	SPD 240kA/3	Surge Counter Dry Contacts	

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: NC38S
BOX CAT#: MH38H

DIMENSIONS:
38''(965mm)Hx20"(508mm)Wx5.75''(146mm)D
PBA: 701A

BUSSING: 225A RATED COPPER BUS
Silver/Tin Plated

OPTIONAL FEATURES:
DRIP HOOD
Copper GROUND BAR
COPPER SOLID NEUTRAL
SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

ELECTRICAL DATA

SYSTEM: 208Y/120V 3Ph 4W 60Hz
System Ampacity: 225A
10kA SYMS. SCCR
Fully Rated

MAIN: MAIN LUGS : 225A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – #6 – 350 kcmil

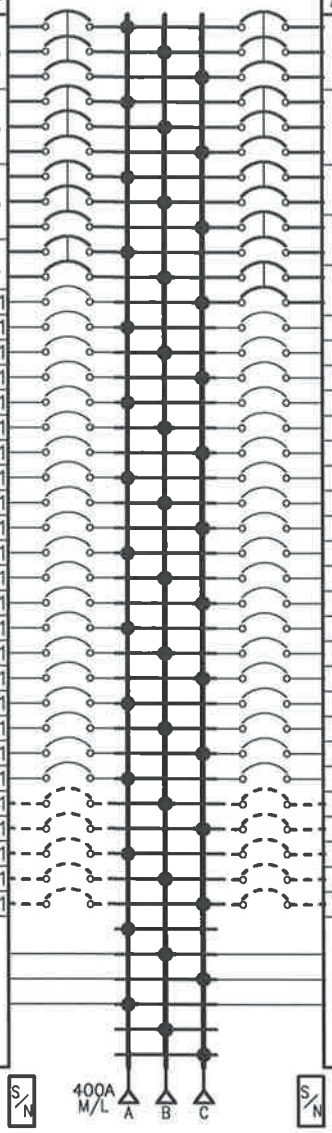
----------BRANCH SUMMATION----------

1 – 30A/3P QOB
2 – 20A/1P QOB
4 – 15A/1P–PS QOB
4 – 20A/2P QOB
25 – 15A/1P QOB

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL-A-E
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-3459378-97643822-01	PG 1 OF 1 REV –

REV	DESCRIPTION	BY	DATE	-	----	--	--/--/--
-	----	--	--/--/--	-	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P
1		QOB	25/3
3			
5			
7		QOB	25/3
9			
11			
13		QOB	20/3
15			
17			
19		QOB	20/2
21			
23		QOB	20/1
25		QOB	20/1
27		QOB	20/1
29		QOB	20/1
31		QOB	20/1
33		QOB	20/1
35		QOB	20/1
37		QOB	20/1
39		QOB	20/1
41		QOB	20/1
43		QOB	20/1
45		QOB	15/1
47		QOB	15/1
49		QOB	15/1
51		QOB	15/1
53		QOB	15/1
55		QOB	15/1
57		QOB	15/1
59		QOB	15/1
61		QOB	15/1
63	PREPARED SPACE	QOB	15/1
65	PREPARED SPACE	QOB	15/1
67	PREPARED SPACE	QOB	15/1
69	PREPARED SPACE	QOB	15/1
71	PREPARED SPACE	QOB	15/1
	Surge Counter Dry Contacts	SPD 240kA/3	



RATING AMP/P	TYPE	ACCESSORIES	CKT NO
25/3	QOB		2
			4
			6
25/3	QOB		8
			10
			12
20/2	QOB		14
			16
20/2	QOB		18
			20
20/2	QOB		22
			24
20/1	QOB		26
20/1	QOB		28
20/1	QOB		30
20/1	QOB		32
20/1	QOB		34
20/1	QOB		36
20/1	QOB		38
20/1	QOB		40
20/1	QOB		42
20/1	QOB		44
15/1	QOB		46
15/1	QOB		48
15/1	QOB		50
15/1	QOB		52
15/1	QOB		54
15/1	QOB		56
15/1	QOB		58
15/1	QOB		60
15/1	QOB		62
15/1	QOB	PREPARED SPACE	64
15/1	QOB	PREPARED SPACE	66
15/1	QOB	PREPARED SPACE	68
15/1	QOB	PREPARED SPACE	70
15/1	QOB	PREPARED SPACE	72
	SPD 240kA/3	Surge Counter Dry Contacts	

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: NC68VS
BOX CAT#: MH68H

DIMENSIONS:
68''(1727mm)Hx20"(508mm)Wx5.75''(146mm)D
PBA: 709T

BUSSING: 400A RATED COPPER BUS
Silver/Tin Plated

OPTIONAL FEATURES:
DRIP HOOD
Copper GROUND BAR
COPPER SOLID NEUTRAL

(Continued on next page.)

ELECTRICAL DATA

SYSTEM: 208Y/120V 3Ph 4W 60Hz
System Ampacity: 400A
10kA SYMS. SCCR
Fully Rated

MAIN: MAIN LUGS : 400A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – 1/0 – 750, (2) 1/0 – 350 kcmil

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL-B
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-3459378-97644187-01	PG 1 OF 2 REV -

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

PHYSICAL DATA CONTINUED

SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

----------BRANCH SUMMATION----------

4 – 25A/3P QOB	1 – 20A/3P QOB
4 – 20A/2P QOB	21 – 20A/1P QOB
18 – 15A/1P QOB	10 – 15A/1P–PS QOB

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	PNL–B
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	February 02 2023		
DRAWING STATUS:	QUOTE	DWG# OQ–3459378–97644187–01	PG 2 OF 2 REV –

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 03/04/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 004 R3 **Referencing** 262417 + 262821
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Schneider

Descriptions / comments

PANELBOARD : SPL-1 (CCN-001)

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. ELE-004 R3
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE April 3rd, 2023

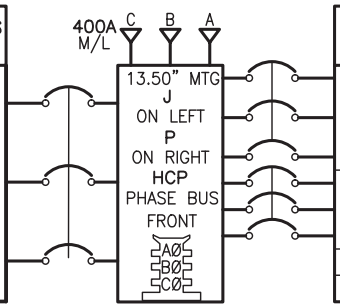
DILLON CONSULTING

Numéro Q2C: 45106021	**Numéro de soumission:** 1	**Numéro de révision, commande modifiée:** 2
Titre du projet: Iqaluit Waste Trasfer Station		**Titre de la soumission:** CHANGE PANEL

Article num.	Quant.	Numéro de catalogue / détails
019-00	1	**Désignation:** SPL-1 ILINE ML PNLB (INT BOX TRIM) I-Line Panelboard Consisting of 600V 3Ph 3W 60Hz Wye Grounded SCCR: 10kA Fully Rated SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 400A Incoming Conductors: 1 - (2) #4 - 600 kcmil Bus: 400A Rated Copper: Tin Plated CU Ground Bar 27" of Mounting Inches Type 2 (Driphood)Box: 50H x 42W x 9.5D Incoming: Top Trim: Surface with Door Box Cat No: HC4250DBH Front Cat No: HCW50TSD Ref. Drawing: PBA418 Type: HCP Feeders: 1 - 350A/3P LA 1 - 110A/3P BD Optional Features: Ship Completely Assembled,Drip Hood,Temporary Fully Assembled Lead Time Extension,Copper Ground Bar Branch User Placement

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P	PHASE BUS CONN
	SPD	HR	60/3	A B C



PHASE BUS CONN	RATING AMP/P	TYPE	ACCESSORIES	CKT NO
C B A	350/3	LA		2
C B A	110/3	BD		4
			1.50" BLANK	
			1.50" BLANK	

PHYSICAL DATA

ENCLOSURE Type 2
Surface with Door
FRONT CAT#: HCW50TSD
BOX CAT#: HC4250DBH

DIMENSIONS:
50''(1270mm)Hx42"(1067mm)Wx9.5''(241mm)D
PBA: 418

BUSSING: 400A RATED COPPER BUS
Tin Plated

OPTIONAL FEATURES:
SHIP COMPLETELY ASSEMBLED
DRIP HOOD
BRANCH USER PLACEMENT
Copper GROUND BAR
SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

ELECTRICAL DATA

SYSTEM: 600V 3Ph 3W 60Hz
System Ampacity: 400A
10kA SYMS. SCCR
Fully Rated

MAIN: MAIN LUGS : 400A
Top FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – (2) #4 – 600 kcmil

----------BRANCH SUMMATION----------

1 – 350A/3P LA
1 – 110A/3P BD

JOB NAME:	Iqaluit Waste Trasfer Station	EQUIPMENT DESIGNATION:	SPL-1
JOB LOCATION:	807	EQUIPMENT TYPE:	I-Line (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	March 29 2023		
DRAWING STATUS:	QUOTE	DWG# 045106021-01	PG 1 OF 1 REV –

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES
NAME: Sandra Rousseau
DATE: Nov 14, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 005 **Referencing** 262823
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Schneider

Descriptions / comments

Disconnect switch fuse and no fuse

Comments of Professionnal :

- No Elec. Comments

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Nov. 15, 2022

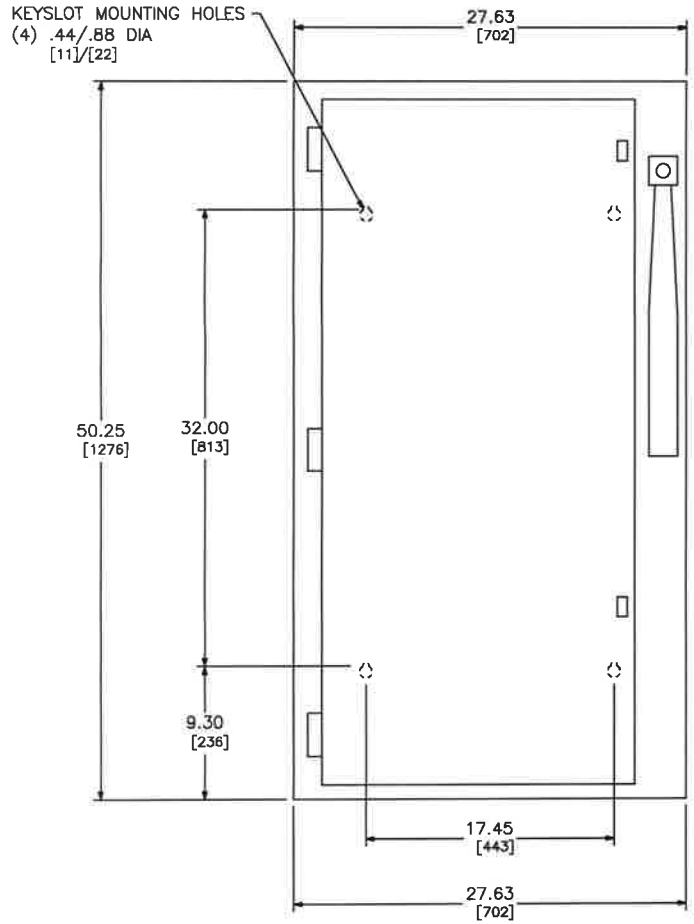
DILLON CONSULTING

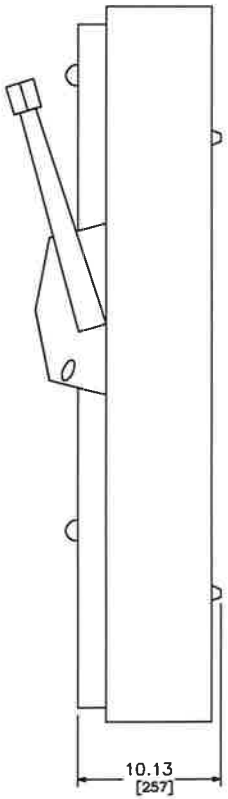
Article	Quant	Numéro de catalogue / détails
7	1	**Désignation :** **Détails du produit :** CH364AWK-HEAVY DUTY SAFETY SWITCH 200A

Article	Quant	Numéro de catalogue / détails
8	2	**Désignation :** **Détails du produit :** CHU363-HEAVY DUTY SAFETY SWITCH 100A

Article	Quant	Numéro de catalogue / détails
9	1	**Désignation :** **Détails du produit :** CHU364-HEAVY DUTY SAFETY SWITCH 200A

Article	Quant	Numéro de catalogue / détails
10	1	**Désignation :** **Détails du produit :** CHU365-HEAVY DUTY SAFETY SWITCH 400A





NEMA TYPE 1
NO KNOCKOUTS

WIRING DIAGRAMS	
FUSIBLE	NOT FUSIBLE
A B	C

TERMINAL LUGS DATA			
AMPERES	MAX. WIRE	MIN. WIRE	TYPE
400	(1) 750 KCMIL OR (2) 300 KCMIL	(1) #1/0 AWG OR (2) #1/0 AWG	AL OR CU

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG.	HORSEPOWER RATINGS					
			240VAC	480VAC		600VAC		250 VDC
			MAX.	STD.	MAX.	STD.	MAX.	
			3Ø	3Ø	3Ø	3Ø	3Ø	MAX.
CH365	600VAC;250VDC	A	–	100	250	125	350	50
CH365N	600VAC	B	–	100	250	125	350	–
CHU365	600VAC;250VDC	C	125	–	250	–	350	50

NOTES:
FINISH – GRAY BAKED ENAMEL
CSA CERTIFIED – FILE # LL-89067
ALL NEUTRALS – INSULATED GROUNDABLE
FUSIBLE SWITCHES ARE SUITABLE FOR USE AS SERVICE EQUIPMENT.
SHORT CIRCUIT CURRENT RATINGS:
10,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS H OR K FUSES
200,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS R FUSES HAVING CLASS R REJECTION KITS INSTALLED OR CLASS J FUSES.

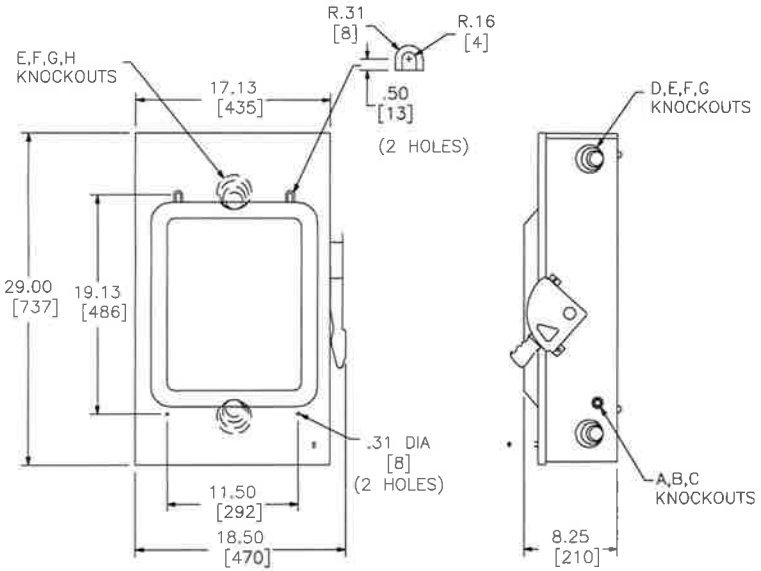
HEAVY DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
400 AMPERE
ENCLOSURE – NEMA TYPE 1 GENERAL PURPOSE

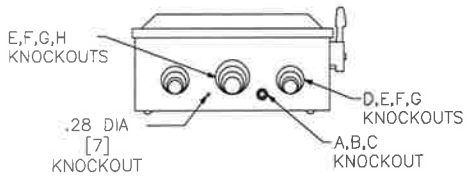
SQUARE D
Schneider Electric

DWG# NO. 1922C

APRIL 2009

REF DWG #1922



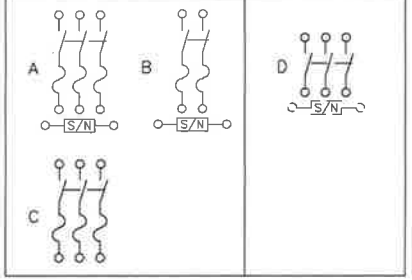


TYPICAL TOP AND BOTTOM ENDWALLS

NEMA TYPE 1

WIRING DIAGRAMS

FUSIBLE	NOT FUSIBLE



TERMINAL LUGS ‡			
AMPERES	MAX WIRE	MIN WIRE	TYPE
200	250 KCMIL	#6 AWG	AL OR CU

KNOCKOUTS				
SYMBOL	CONDUIT SIZE		DIAMETER	
	IN	MM	IN	MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	45
E	1.50	38	2.00	51
F	2.00	51	2.50	64
G	2.50	64	3.00	76
H	3.00	76	3.50	89

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER / NEMA TYPE 1	VOLTAGE RATINGS	WIRING DIAG	HORSEPOWER RATINGS													
			240VAC				480VAC				600VAC				250 VDC	600 VDC
			STD		MAX		STD		MAX		STD		MAX		STD	STD
			1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø		
CH224N	240VAC;250VDC	B	15	25#	-	60#	-	-	-	-	-	-	-	-	40	-
CH324N	240VAC,250VDC	A	15^	25#	-	60#	-	-	-	-	-	-	-	-	40	-
CH364	600VAC;600VDC	C	15^	25#	-	60&	25^	50&	50^	125&	30^	60	50^	150	40^	50^
CH364N	600VAC;600VDC	A	15^	25&	-	60#	25^	50#	50^	125#	30^	60	50^	150	40^	50^
CHU364	600VAC;600VDC	D	-	-	15^	60&	-	-	50^	125&	-	-	50^	150	40^ <	50^ <

NOTES:
FINISH – GRAY BAKED ENAMEL
cUL CERTIFIED – FILE E–2675
ALL NEUTRALS – INSULATED GROUNDABLE
FUSIBLE SWITCHES ARE SUITABLE FOR USE AS SERVICE EQUIPMENT.
SHORT CIRCUIT CURRENT RATINGS:
10,000 AMPERES WITH CLASS H OR K FUSES.
200,000 AMPERES WITH CLASS R FUSES HAVING CLASS R REJECTION KITS INSTALLED OR CLASS J FUSES.
ON 600V SWITCHES, 100,000 AMPERE MAX ON CORNER GROUNDED DELTA WHEN PROTECTED BY CLASS R OR J FUSES.L
WHEN MOUNTING THESE SWITCHES, ALLOW 4.00/[102] MIN CLEARANCE BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.
‡ LUGS SUITABLE FOR 75°c CONDUCTORS.
# IF CORNER GROUNDED DELTA, USE OUTER SWITCHING POLES FOR UNGROUNDED CONDUCTORS.
& IF CORNER GROUNDED DELTA, INSTALL NEUTRAL AND USE OUTER SWITCHING POLES FOR UNGROUNDED CONDUCTORS.
^ USE ANY TWO SWITCHING POLES.
< MAX RATING

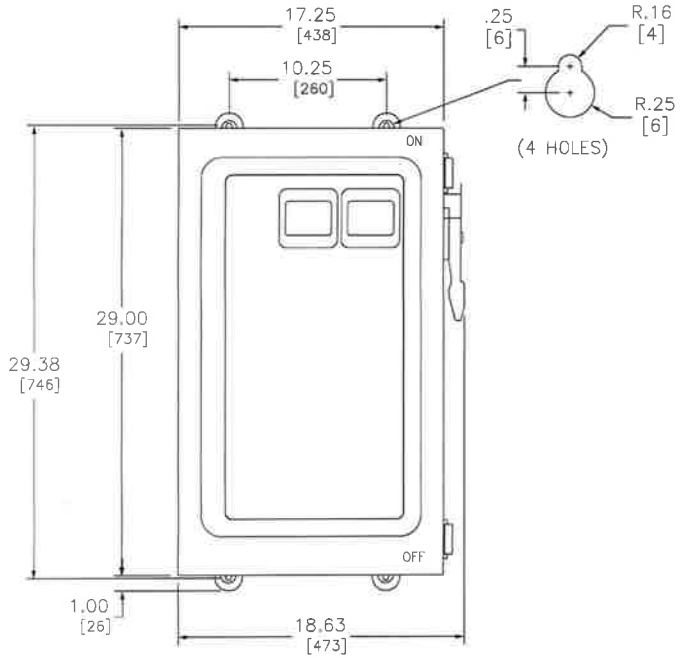
HEAVY DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
200 AMPERE – SERIES F5
ENCLOSURE – NEMA TYPE 1 GENERAL PURPOSE

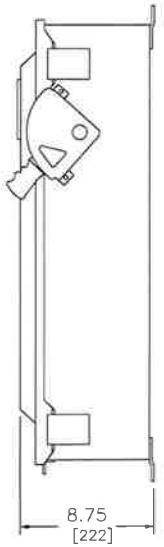
SQUARE D COMPANY

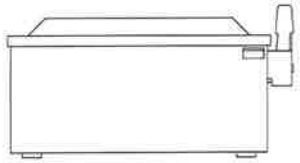
DWG# NO. 3229C

APRIL 2009

3229

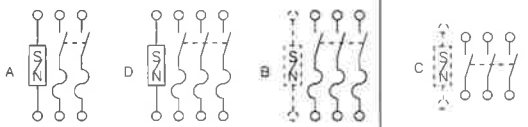






WIRING DIAGRAMS

FUSIBLE			NOT FUSIBLE
A	D	B	C



TERMINAL LUGS ▲			
AMPERES	MAX WIRE	MIN WIRE	TYPE
200	250 KCMIL	#6 AWG	CU/AL

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG	HORSEPOWER RATINGS													
			240VAC				480VAC				600VAC				250 VDC	600 VDC
			STD		MAX		STD		MAX		STD		MAX		STD	STD
			1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø	1Ø	3Ø		
*CH224NAWK	240VAC;250VDC	A	15	25&	–	60&	–	–	–	–	–	–	–	–	40^	–
*CH324NAWK	240VAC,250VDC	D	15^	25&	–	60&	–	–	–	–	–	–	–	–	40^	–
CH364AWK	600VAC;600VDC	B	15^	25&	–	60&	25^	50&	50^	125&	30^	60	50^	150	40^	50^
*CH364NAWK	600VAC;600VDC	D	15^	25#	–	60#	25^	50#	50^	125#	30^	60	50^	150	40^	50^
CHU364AWK	600VAC;600VDC	C	–	–	15^	60&	–	–	50^	125&	–	–	50^	150	40^	50^

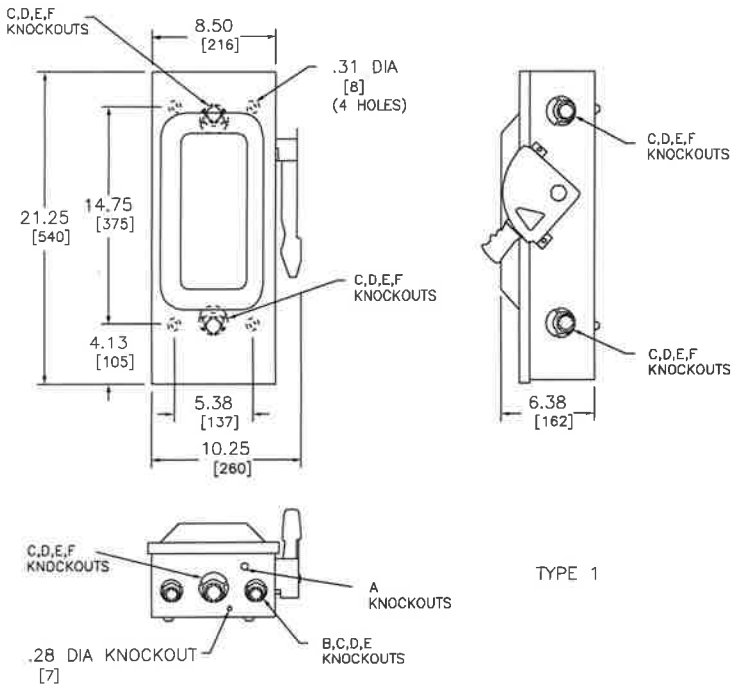
NOTES:
FINISH – GRAY BAKED ENAMEL
CSA CERTIFIED – FILE #LL 89067
ALL NEUTRAL – INSULATED GROUNDABLE
SHORT CIRCUIT CURRENT RATINGS:
10,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS H OR K FUSES.
200,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS R OR J FUSES.
ON 600V SWITCHES, 100,000 AMPERE, MAX ON CORNER GROUNDED DELTA WHEN PROTECTED BY CLASS R OR J FUSES.
WHEN MOUNTING THESE SWITCHES, ALLOW 4.00/[102] MIN CLEARANCE BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.
▲ LUGS SUITABLE FOR 75°C CONDUCTORS.
IF CORNER GROUNDED DELTA, USE OUTER SWITCHING POLES FOR UNGROUNDED CONDUCTORS.
& IF CORNER GROUNDED DELTA, INSTALL NEUTRAL AND USE OUTER SWITCHING POLE FOR UNGROUNDED CONDUCTORS.
^ USE ANY TWO SWITCHING POLES.
SUFFIX E1 OR E12 – FACTORY INSTALLED ELECTRICAL AUXILIARY INTERLOCK.
SUFFIX J1 – VOLTAGE MONITORS ON LOAD SIDE.
SUFFIX J2 – VOLTAGE MONITORS ON LOAD/LINE SIDE.
* SUITABLE FOR USE AS SERVICE EQUIPMENT IN CANADA.
TYPE 3R/12 SWITCHES ARE SUITABLE FOR TYPE 3R APPLICATION BY REMOVING THE DRAINSCREW FROM BOTTOM ENDWALL.

HEAVY DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
200 AMPERE – SERIES F6
ENCLOSURE – TYPE 3R/12 INDUSTRIAL

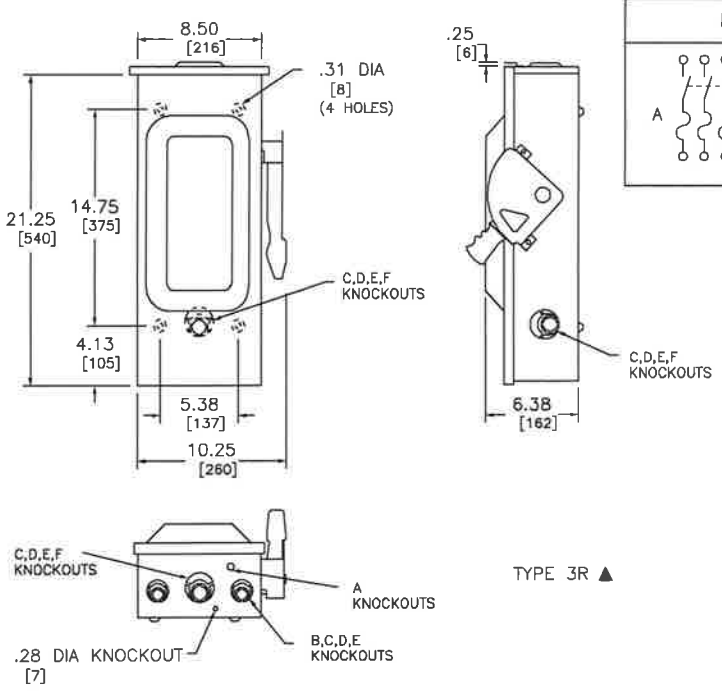
SQUARE D
by Schneider Electric

DWG# NO. 3233C

NOVEMBER 2015



TYPE 1



TYPE 3R ▲

WIRING DIAGRAMS

FUSIBLE	NOT FUSIBLE
A B	C

TERMINAL LUGS ‡			
AMPERES	MAX. WIRE	MIN. WIRE	TYPE
100	#1/0 AWG	#12 AWG	AL
	#1/0 AWG	#14 AWG	CU

KNOCKOUTS				
SYMBOL	CONDUIT SIZE		DIAMETER	
	IN	MM	IN	MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	45
E	1.50	38	2.00	51
F	2.00	51	2.50	64

DUAL DIMENSIONS: INCHES / MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG.	HORSEPOWER RATINGS									250 VDC.	600 VDC.
			240VAC			480VAC			600VAC				
			STD.	MAX.		STD.	MAX.		STD.	MAX.			
			3Ø	1Ø	3Ø	3Ø	1Ø	3Ø	3Ø	1Ø	3Ø	MAX.	MAX.
CH323N	240VAC,250VDC	B	15	–	30	–	–	–	–	–	–	20	–
CH323NRB	240VAC,250VDC	B	15	–	30	–	–	–	–	–	–	20	–
CH363	600VAC;600VDC	A	–	–	–	25	–	60	30	–	75	20	50
CH363RB	600VAC;600VDC	A	–	–	–	25	–	60	30	–	75	20	50
CH363N	600VAC,600VDC	B	–	–	–	25	–	60	30	–	75	–	50
CH363NRB	600VAC,600VDC	B	–	–	–	25	–	60	30	–	75	–	50
CHU363	600VAC;600VDC	C	–	20	40	–	40	75	–	40	100	20	50
CHU363RB	600VAC;600VDC	C	–	20	40	–	40	75	–	40	100	20	50

NOTES:
FINISH – GRAY BAKED ENAMEL
CSA CERTIFIED – FILE #LL-89067
ALL NEUTRALS – INSULATED GROUNDABLE
SHORT CIRCUIT CURRENT RATINGS:
10,000 AMPERES WITH CLASS H OR K FUSES.
200,000 AMPERES WITH CLASS R FUSES HAVING CLASS R REJECTION KITS INSTALLED OR CLASS J FUSES.
WHEN MOUNTING THESE SWITCHES, ALLOW 4.00/[102] MIN. CLEARANCE BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.
▲ TYPE 3R SWITCHES HAVE PROVISIONS FOR MAXIMUM 2.50 IN / 64 MM BOLT-ON B-HUB.
‡ LUGS SUITABLE FOR 60°C OR 75°C COPPER OR ALUMINUM CONDUCTORS.
SUFFIX EI – ELECTRICAL INTERLOCK INSTALLED: 1 N.O., 1 N.C. CONTACTS
SUFFIX EI2 – ELECTRICAL INTERLOCK INSTALLED: 2 N.O., 2 N.C. CONTACTS

HEAVY DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
100 AMPERE
ENCLOSURE – TYPE 1 GENERAL PURPOSE
TYPE 3R RAINPROOF

SQUARE D
Schneider Electric

DWG# NO. 1905C

OCTOBER 2006

REF DWG #1905C

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES
NAME: Sandra Rousseau
DATE: Nov 10, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 006 **Referencing** 262823
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Mersen

Descriptions / comments

Motor disconnect (max 40HP)

Comments of Professionnal :

- No Electrical Comments.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Nov. 14, 2022

DILLON CONSULTING

EJM Series
Enclosed Manual Motor Controllers

EJM30BSx, EJM60Bxx, EJM80BPx

Document no. 34EJM30-80-A

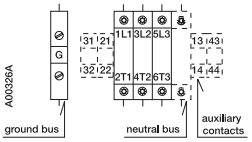
Installation instructions

Applications

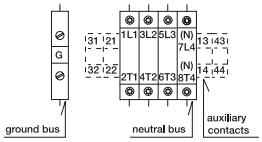
The EJM series of enclosed manual motor controllers are rotary operated, 3 or 4 pole, up to 600V HP rated switches, housed in thermoplastic enclosures suitable for humid and corrosive environments. Rated NEMA 4X may be used for both indoor and outdoor applications. Products are properly installed on the load side of a branch circuit protective device and are suitable for use as motor disconnects.

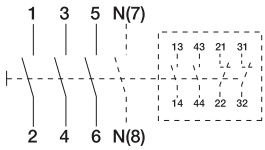
WARNING
To avoid hazard of electric shock, turn off and lock out all power sources before installing or performing maintenance on this equipment.

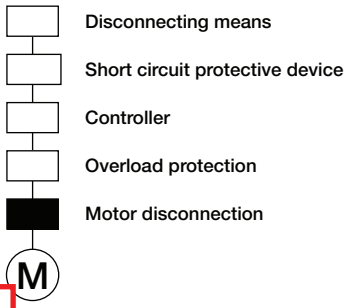
16-63 Amp Non-Fused
Disconnect up to 600 VAC 3ph



16-63 Amp Non-Fused
Disconnect up to 600 VAC 3ph
+ neutral pole







Ratings

P/N	AMPS	Enclosure size	VAC	200V	208V	240V	480V	600V
EJM30BSx	40A	Size 1	HP	10	10	10	20	25
EJM60Bxx	60A	Size 2	HP	15	15	15	30	30
EJM80BPx	80A	Size 3	HP	20	20	20	40	40

Wire connections

EJM30BSx:

Switch wire range: #18-8 AWG, 60-75 °C, Cu only, solid or stranded
Torque: 7 lb.in, use Pozi-drive #2 or flat blade screwdriver

EJM60-80BSx:

Switch wire range: #14-4 AWG, 60-75 °C, Cu only, solid or stranded
Torque: 18 lb.in, use Pozi-drive #2 or flat blade screwdriver

Auxiliary contacts, 10A, 600V, A600-R300

Switch wire range: #18-14 AWG, 60-75 °C, Cu only, solid or stranded
Torque: 7 lb.in, use Pozi-drive #2 or flat blade screwdriver



Optional Power Poles

EJM30BSx:		EJM60-80Sx:	
4P40	4th pole	4P80	4th pole
NP40	Solid neutral pole	NP80	Solid neutral pole

Optional Auxiliary contacts

OA1G10 (1 N.O.)	Install on right side of switch. Max. 2 pcs on 3-pole switch, 1 pcs on 4-pole switch (EJM30BSx).
OA1G01 (1 N.C.)	Install on left side of switch. Max. 2 pcs.
OA2G11 (1 N.O. + 1 N.C.)	Install on right side of switch.

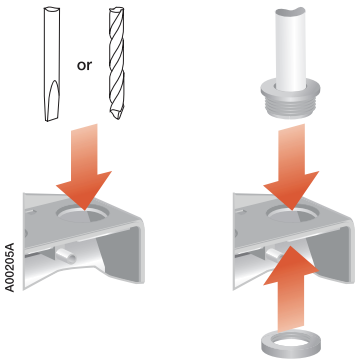
Installation

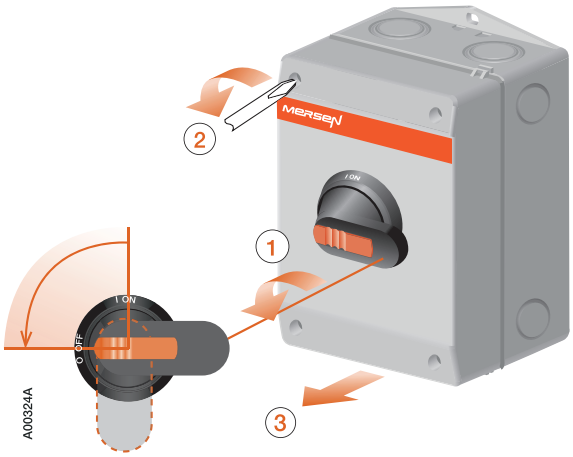
Operate switch to the OFF position and loosen the cover screws, remove the cover.

EJM30BSx
Two concentric 1/2" & 3/4" K.O.s are provided in the top and bottom of the enclosure (size 1).

EJM60Bxx
Two concentric 3/4" & 1" K.O.s are provided in the top and bottom of the enclosure (size 2).

EJM80BPx
Two concentric 1" & 1 1/4" K.O.s are provided in the top and bottom of the enclosure (size 3).





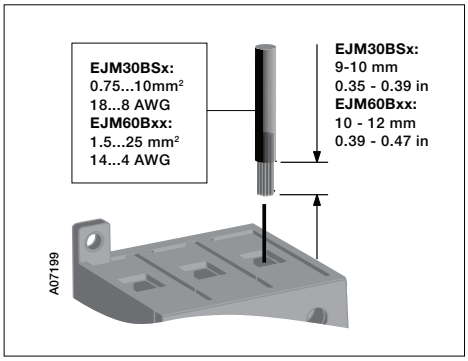
An internal metallic plate bonds together all conduit hubs installed, without the need for additional bonding jumpers.

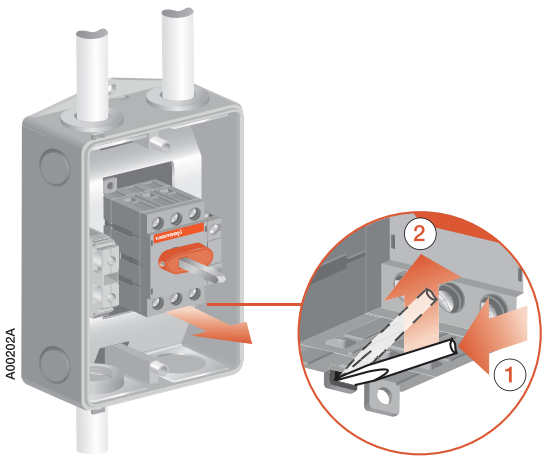
- Drill proper holes for conduit hubs or use K.O.s
- Install conduit hubs
- Install enclosure size 1 and 2 using (2) #8 or M4 screws
- Install enclosure size 3 using (4) 1/4" or M6 screws

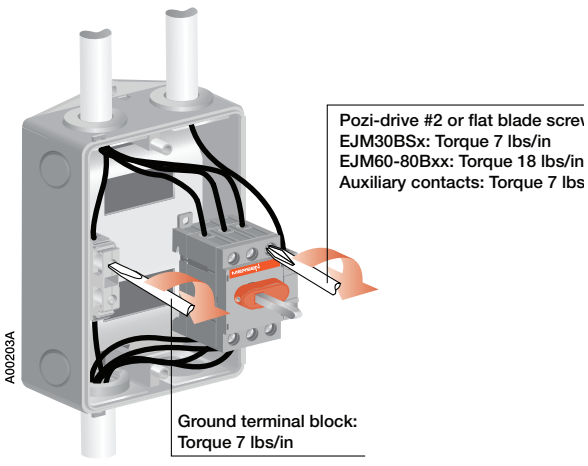
Wiring

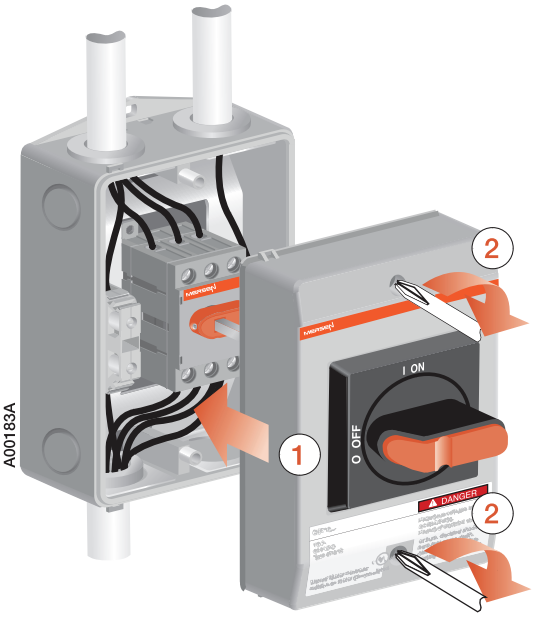
For ease of wiring, it is recommended to remove the switch from the enclosure before pulling the wire. A small flat blade screwdriver may be used to release the DIN rail clip at the bottom of the switch, allowing it to be removed.

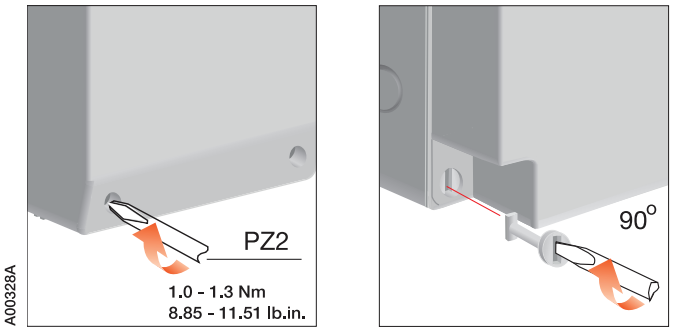
Connect power wires to switch terminal and attach ground wire to the ground terminal block inside the enclosure. Reinstall the switch in the enclosure. Reference the National Electric Code and all local codes for appropriate wire size and grounding requirements.







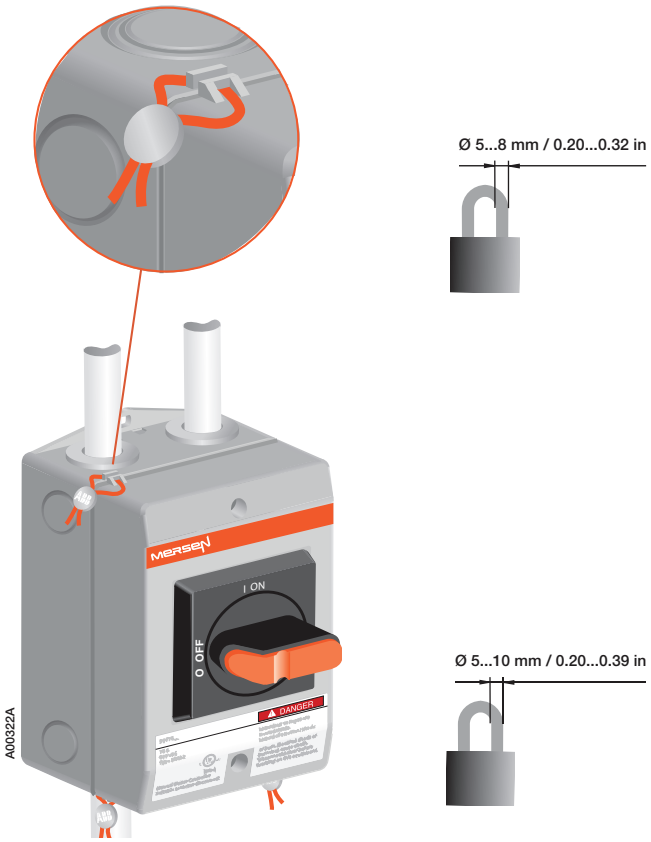




Reinstall enclosure cover, note that both the switch and the operating handle on the cover must be in the OFF-position. Tighten the cover screws.

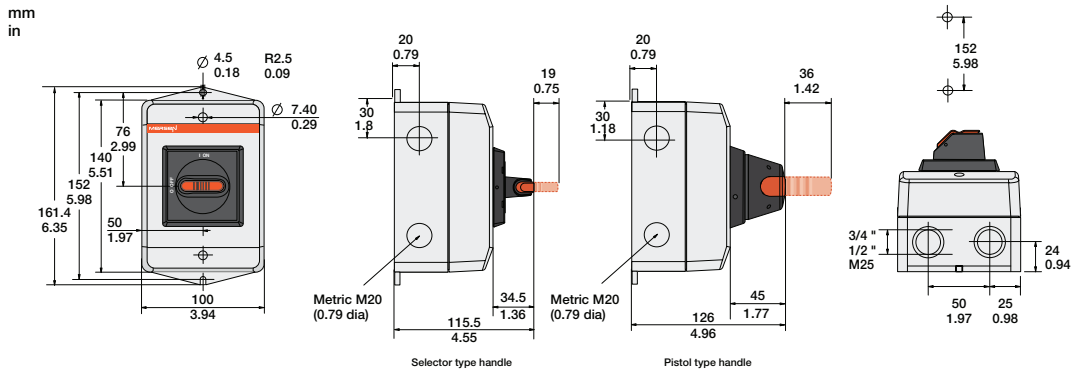
Operating handle

Operating handle may be padlocked in the OFF-position with up to three padlocks. When locked, the enclosure cover is interlocked and can not be removed. All padlocks must be opened to gain entry to the enclosure.

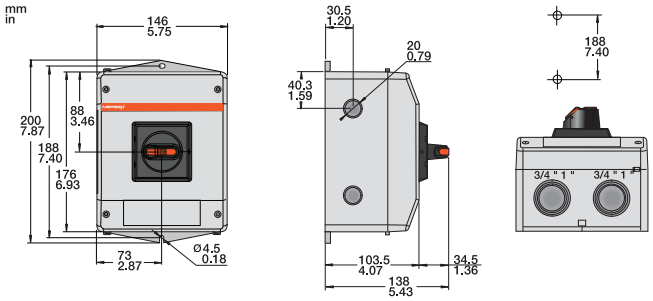




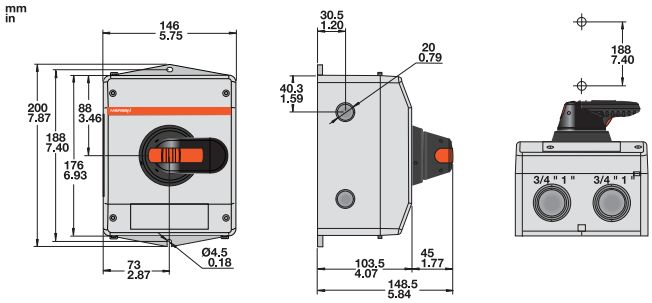
EJM30BSx (enclosure size 1)



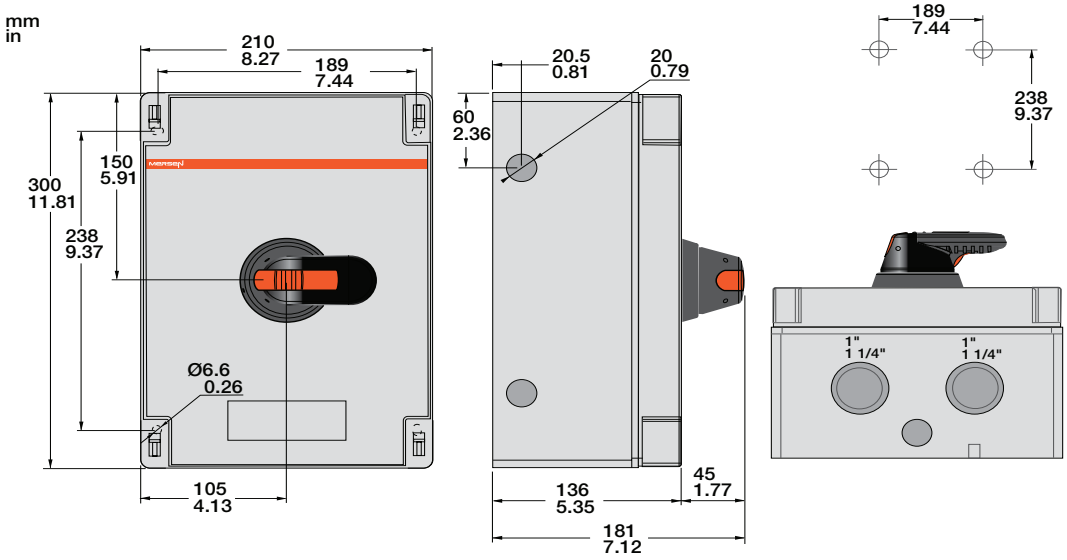
EJM60BSx (enclosure size 2)



EJM60BPx (enclosure size 2)



EJM80BPx (enclosure size 3)



REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
NAME: Sandra Rousseau
DATE: Nov 16, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 007 **Referencing** 261217
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : DELTA

Descriptions / comments

Transformers

Comments of Professionnal :

- No Elec. Comments

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Nov. 14, 2022

DILLON CONSULTING

DISTRIBUTION PRODUCTS / PRODUITS DISTRIBUTION

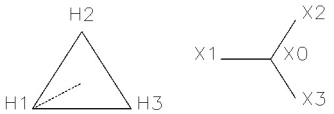
DRY TYPE GENERAL PURPOSE TRANSFORMER / TRANSFORMATEUR DAPPLICATION GÉNÉRALE DE TYPE SEC

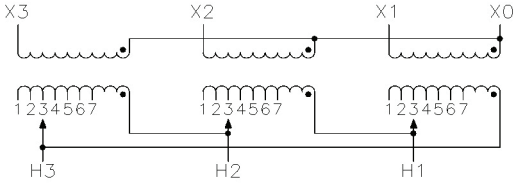
T4

CAT.	CD6C0015VHA6XXBD
KVA	15
PHASE	3 — 60 Hz
TEMP. RISE / ÉLEV. TEMP.	150 °C
TAPS / PRISES	4 - 2.5 % 2A, 2B
ENCLOS. / BOITIER	3R — 102 Kg

PRIMARY / PRIMAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	600	#14 to/à #2

SECONDARY / SECONDAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	208Y/120	#14 to/à #2





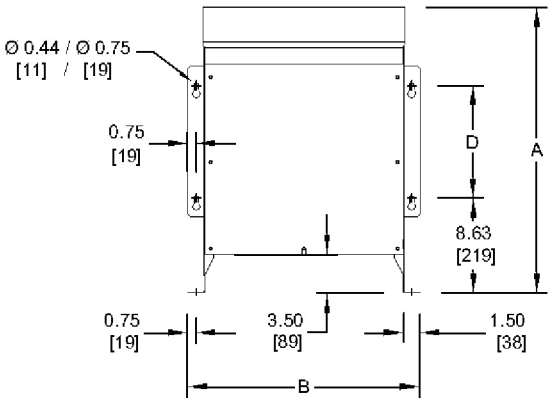
DIMENSIONS		
	IN / PO	MM
A	26	(660)
B	21.25	(540)
C	14.5	(368)
D	10.25	(260)
E	--	(--)

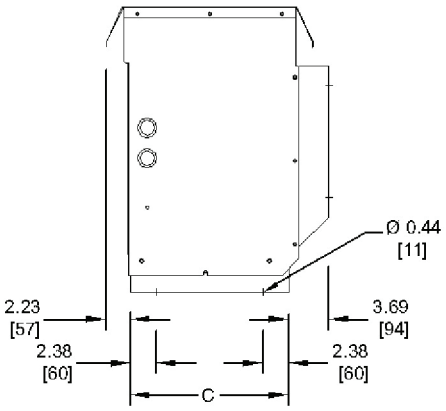
IMPEDANCE / IMPÉDANCE *	STD	(%)
NO LOAD LOSSES / PERTES À VIDE *	54.1	WATTS
LOAD LOSSES / PERTES EN CHARGE * (170 °C)	579.8	WATTS
TOTAL LOSSES / PERTES TOTALES *	633.9	WATTS
EXCITING CURRENT / COURANT DEXCIT. *	0.72	(%)
NOISE LEVEL / NIVEAU DE BRUIT *	45	(dBA)
X/R RATIO / RATIO X/R *	0.63	

% REGULATION (170 °C) * (FULL LOAD) (PLEINE CHARGE)			% EFFICIENCY / % EFFICACITÉ (170 °C) *				(75 °C)**
1.0 P.F.	0.9 P.F.	0.8 P.F.	100%	75%	50%	25%	35%
3.90	4.54	4.55	95.95	96.73	97.41	97.65	97.97

INSULATION CLASS / CLASSE DISOLATION 220
* ESTIMATED VALUES / VALEURS ESTIMÉES
** EFFICIENCY / EFFICACITÉ :
MEETS OR EXCEEDS / ÉGALE OU DÉPASSE
- CSA : CSA C802.2-18
- CANADA : SOR/DORS/2018-201
- QUEBEC : O.C./DÉCRET/1394-2018
- ONTARIO : REGULATION 509/18
- USA : DOE 10 CFR PART 431:2016-01

3 PHASE / 3 COIL / COPPER
3 PHASES / 3 BOBINES / CUIVRE





153973

MOUNTING : WALL / FLOOR
ANCRAGE : MUR / PLANCHER

FOR PROPER VENTILATION FOR FLOOR INSTALLATION KEEP AT LEAST 6 INCHES FROM ADJACENT WALLS
POUR UNE BONNE VENTILATION LORSQUE INSTALLÉ AU SOL PLACEZ À AU MOINS 6 POUCES DES MURS ADJACENTS

CUSTOMER / CLIENT	**SPECIAL INSTN / INSTR. SPÉCIALE**
PO / BC	
CONTR. / PROJ.	

WO / FT	DRAWING / DESSIN	CD6C0015VHA6XXBD R01	
DRAW. / DESS.	ML	Date 2019/04/02	Ref. No 13370
APPD. / APP.		Date	V0003

DELTA TRANSFORMERS / TRANSFORMATEURS
Tel : 1-800-663-3582
Fax : 1-877-449-9115

VF

Subject to change without notice / Sujet à changement sans préavis

DISTRIBUTION PRODUCTS / PRODUITS DISTRIBUTION

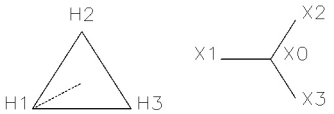
DRY TYPE GENERAL PURPOSE TRANSFORMER / TRANSFORMATEUR DAPPLICATION GÉNÉRALE DE TYPE SEC

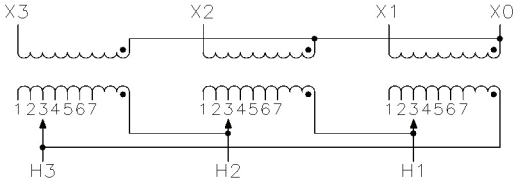
T2 & T3

CAT.	CD6C0045VHA6XXBD
KVA	45
PHASE	3 — 60 Hz
TEMP. RISE / ÉLEV. TEMP.	150 °C
TAPS / PRISES	4 - 2.5 % 2A, 2B
ENCLOS. / BOITIER	3R — 194 Kg

PRIMARY / PRIMAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	600	#14 to/à #2

SECONDARY / SECONDAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	208Y/120	1 of/de 250 MCM





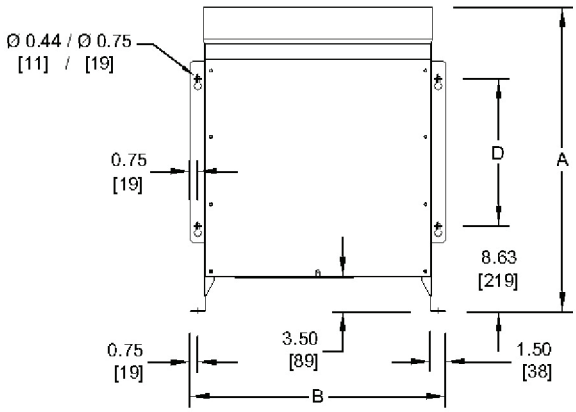
DIMENSIONS		
	IN / PO	MM
A	30.5	(775)
B	25.75	(654)
C	17.5	(444)
D	14.75	(375)
E	--	(--)

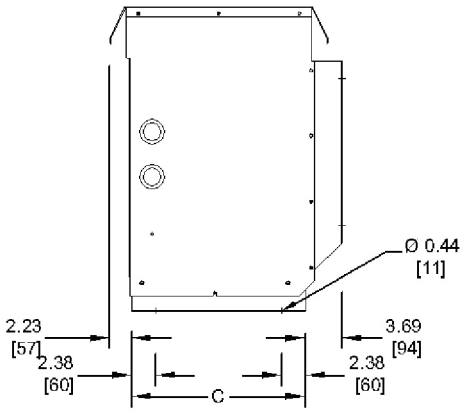
IMPEDANCE / IMPÉDANCE *	3.93	(%)
NO LOAD LOSSES / PERTES À VIDE *	117.4	WATTS
LOAD LOSSES / PERTES EN CHARGE * (170 °C)	1274.8	WATTS
TOTAL LOSSES / PERTES TOTALES *	1392.2	WATTS
EXCITING CURRENT / COURANT DEXCIT. *	0.55	(%)
NOISE LEVEL / NIVEAU DE BRUIT *	45	(dBA)
X/R RATIO / RATIO X/R *	0.96	

% REGULATION (170 °C) * (FULL LOAD) (PLEINE CHARGE)			% EFFICIENCY / % EFFICACITÉ (170 °C) *				(75 °C)**
1.0 P.F.	0.9 P.F.	0.8 P.F.	100%	75%	50%	25%	35%
2.87	3.74	3.90	97.00	97.59	98.10	98.28	98.51

INSULATION CLASS / CLASSE DISOLATION 220
* ESTIMATED VALUES / VALEURS ESTIMÉES
** EFFICIENCY / EFFICACITÉ :
MEETS OR EXCEEDS / ÉGALE OU DÉPASSE
- CSA : CSA C802.2-18
- CANADA : SOR/DORS/2018-201
- QUEBEC : O.C./DECRET/1394-2018
- ONTARIO : REGULATION 201/19
- USA : DOE 10 CFR PART 431:2016-01

3 PHASE / 3 COIL / COPPER
3 PHASES / 3 BOBINES / CUIVRE





EV
153973

MOUNTING : WALL / FLOOR
ANCRAGE : MUR / PLANCHER

FOR PROPER VENTILATION FOR FLOOR INSTALLATION KEEP AT LEAST 6 INCHES FROM ADJACENT WALLS
POUR UNE BONNE VENTILATION LORSQUE INSTALLÉ AU SOL PLACEZ À AU MOINS 6 POUCES DES MURS ADJACENTS

CUSTOMER
CLIENT
PO / BC

CONTR.
PROJ.

SPECIAL INSTN / INSTR. SPÉCIALE

WO
FT

DRAWING
DESSIN
CD6C0045VHA6XXBD Rev. 05

DRAW.
DESS. S. Roy Date 2022/06/20

APPD.
APP. Date

Ref. No 13370
V0005

DELTA TRANSFORMERS TRANSFORMATEURS
Tel : 1-800-663-3582
Fax : 1-877-449-9115

VF

Subject to change without notice / Sujet à changement sans préavis

DISTRIBUTION PRODUCTS / PRODUITS DISTRIBUTION

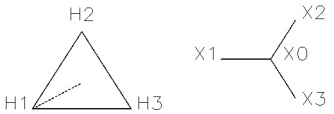
DRY TYPE GENERAL PURPOSE TRANSFORMER / TRANSFORMATEUR DAPPLICATION GÉNÉRALE DE TYPE SEC

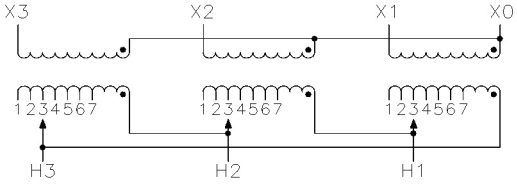
T1

CAT.	CD6C0075VHA6XXBD
KVA	75
PHASE	3 — 60 Hz
TEMP. RISE / ÉLEV. TEMP.	150 °C
TAPS / PRISES	4 - 2.5 % 2A, 2B
ENCLOS. / BOITIER	3R — 277 Kg

PRIMARY / PRIMAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	600	#14 to/à #1/0

SECONDARY / SECONDAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	208Y/120	1 of/de 500 MCM





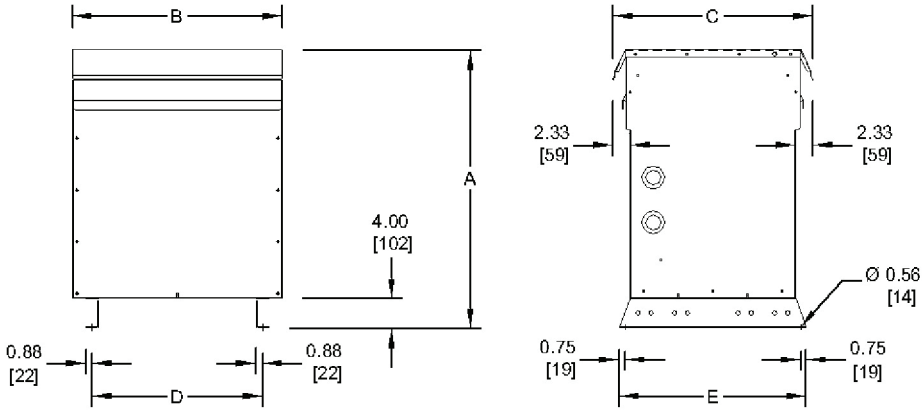
DIMENSIONS		
	IN / PO	MM
A	37	(940)
B	28.01	(711)
C	26.72	(679)
D	22.75	(578)
E	25	(635)

IMPEDANCE / IMPÉDANCE *	STD	(%)
NO LOAD LOSSES / PERTES À VIDE *	174	WATTS
LOAD LOSSES / PERTES EN CHARGE * (170 °C)	1826.2	WATTS
TOTAL LOSSES / PERTES TOTALES *	2000.2	WATTS
EXCITING CURRENT / COURANT DEXCIT. *	0.41	(%)
NOISE LEVEL / NIVEAU DE BRUIT *	50	(dBA)
X/R RATIO / RATIO X/R *	1.03	

% REGULATION (170 °C) * (FULL LOAD) (PLEINE CHARGE)			% EFFICIENCY / % EFFICACITÉ (170 °C) *				(75 °C)**
1.0 P.F.	0.9 P.F.	0.8 P.F.	100%	75%	50%	25%	35%
2.46	3.28	3.45	97.40	97.91	98.35	98.49	98.7

INSULATION CLASS / CLASSE DISOLATION 220
* ESTIMATED VALUES / VALEURS ESTIMÉES
** EFFICIENCY / EFFICACITÉ :
MEETS OR EXCEEDS / ÉGALE OU DÉPASSE
- CSA : CSA C802.2-18
- CANADA : SOR/DORS/2018-201
- QUEBEC : O.C./DÉCRET/1394-2018
- ONTARIO : REGULATION 509/18
- USA : DOE 10 CFR PART 431:2016-01

3 PHASE / 3 COIL / COPPER
3 PHASES / 3 BOBINES / CUIVRE



153973

MOUNTING : FLOOR
ANCRAGE : PLANCHER

FOR PROPER VENTILATION FOR FLOOR INSTALLATION KEEP AT LEAST 6 INCHES FROM ADJACENT WALLS
POUR UNE BONNE VENTILATION LORSQUE INSTALLÉ AU SOL PLACEZ À AU MOINS 6 POUCES DES MURS ADJACENTS

CUSTOMER / CLIENT	**SPECIAL INSTN / INSTR. SPÉCIALE**
PO / BC	
CONTR. / PROJ.	

WO / FT	DRAWING / DESSIN	CD6C0075VHA6XXBD Rev. 05	
DRAW. / DESS.	S. Roy	Date 2019/05/15	Ref. No 13370
APPD. / APP.		Date	V0010

DELTA TRANSFORMERS / TRANSFORMATEURS

Tel : 1-800-663-3582
Fax : 1-877-449-9115

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DISTRIBUTION PRODUCTS / PRODUITS DISTRIBUTION

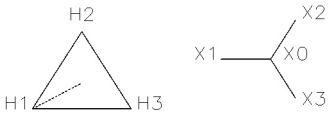
DRY TYPE GENERAL PURPOSE TRANSFORMER / TRANSFORMATEUR DAPPLICATION GÉNÉRALE DE TYPE SEC

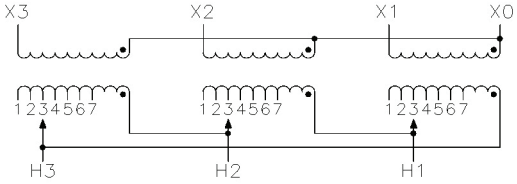
T5

CAT.	CD6C0500VRA6XXBD
KVA	500
PHASE	3 — 60 Hz
TEMP. RISE / ÉLEV. TEMP.	150 °C
TAPS / PRISES	4 - 2.5 % 2A, 2B
ENCLOS. / BOITIER	3R — 1522 Kg

PRIMARY / PRIMAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	600	Bar 1.0" x 1/4"

SECONDARY / SECONDAIRE		
	VOLTAGE / TENSION	CONNECTORS / CONNECTEURS
	480Y/277	Bar 1.5" x 1/4"





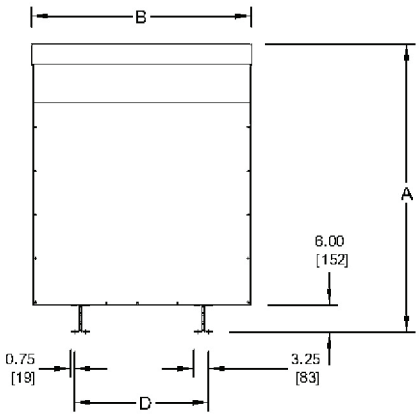
DIMENSIONS		
	IN / PO	MM
A	64	(1626)
B	49.03	(1245)
C	41.53	(1055)
D	30	(762)
E	39	(991)

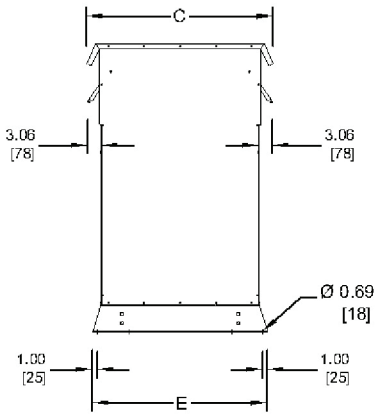
IMPEDANCE / IMPÉDANCE *	STD	(%)
NO LOAD LOSSES / PERTES À VIDE *	664.8	WATTS
LOAD LOSSES / PERTES EN CHARGE * (170 °C)	7782.9	WATTS
TOTAL LOSSES / PERTES TOTALES *	8447.7	WATTS
EXCITING CURRENT / COURANT DEXCIT. *	0.24	(%)
NOISE LEVEL / NIVEAU DE BRUIT *	60	(dBA)
X/R RATIO / RATIO X/R *	3.43	

% REGULATION (170 °C) * (FULL LOAD) (PLEINE CHARGE)			% EFFICIENCY / % EFFICACITÉ (170 °C) *				(75 °C)**
1.0 P.F.	0.9 P.F.	0.8 P.F.	100%	75%	50%	25%	35%
1.70	3.82	4.51	98.34	98.67	98.97	99.09	99.18

INSULATION CLASS / CLASSE DISOLATION 220
* ESTIMATED VALUES / VALEURS ESTIMÉES
** EFFICIENCY / EFFICACITÉ :
MEETS OR EXCEEDS / ÉGALE OU DÉPASSE
- CSA : CSA C802.2-18
- CANADA : SOR/DORS/2018-201
- QUEBEC : O.C./DECRET/1394-2018
- ONTARIO : REGULATION 201/19
- USA : DOE 10 CFR PART 431:2016-01

3 PHASE / 3 COIL / COPPER
3 PHASES / 3 BOBINES / CUIVRE





153973

MOUNTING : FLOOR
ANCRAGE : PLANCHER

FOR PROPER VENTILATION KEEP AT LEAST 12 INCHES FROM ADJACENT WALLS
POUR UNE BONNE VENTILATION PLACEZ À AU MOINS 12 POUCES DES MURS ADJACENTS

CUSTOMER
CLIENT
PO / BC

CONTR.
PROJ.

SPECIAL INSTN / INSTR. SPÉCIALE

Cable In Cable Out Lugs not Included // Entrée et Sortie par Câbles Connecteurs Non Inclus

WO
FT

DRAWING
DESSIN
CD6C0500VRA6XXBD Rev. 00

DRAW.
DESS. S. Roy Date 2019/11/12

APPD.
APP. Date

Ref. No 13370
V0001

DELTA TRANSFORMERS TRANSFORMATEURS

Tel : 1-800-663-3582
Fax : 1-877-449-9115

VF

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑐᓕᕆᔨᒃ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 31/01/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 008 **Referencing** 265000
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : LITHONIA LIGHTING

Descriptions / comments

Lighting

Comments of Professionnal :

- Lighting Type "G" also required for office lighting.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Jan 31. 2023

DILLON CONSULTING

Project 22-48097-6
IQALUIT WASTE TRANSFER STATION

Submitted By
ECLAIRAGE DIMENSION PLUS INC

Type	Manufacturer/Brand	Catalog Number
A	ABL-Lithonia Lighting	JEBL 24L 40K 80CRI WH
B	ABL-Lithonia Lighting	KAXW LED P1 40K R3 120 PER DDBXD
C	ABL-Lithonia Lighting	DSXW1 LED 20C 1000 40K T4M MVOLT DDBXD
D	ABL-Lithonia Lighting	ZL1N L48 7000LM FST MVOLT 40K 80CRI WH

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: JEBL 24L 40K 80CRI WH Note:	Type A

Catalog Number	
Notes	
Type	

Contractor Select™

JEBL

LED High Bay Light



The JEBL is built to last with 6kV surge protection standard, 55°C ambient temperature rating, and IP65 rated for elimination of dust, moisture and airborne contaminants. Designed for applications including warehousing, gymnasiums, manufacturing and outdoor canopies.

FEATURES:

- Robust 6kV surge protection standard, meeting the ANSI standard for Industrial environments
- Listed for wet locations and IP65 rated to help protect against dust, and airborne contaminants from indoor and outdoor environments

Catalog Number	UPC	Description	Replaces up to	Lumens	Input Watts	CCT	Voltage	Distribution	Pallet Qty.
JEBL 12L 40K 80CRI WH	00191848153840	JEBL LED High Bay	4-lamp T5HO, 6-lamp T8	13,630	95W	4000K	120-277	General	54
JEBL 12L 50K 80CRI WH	00191848153901	JEBL LED High Bay	4-lamp T5HO, 6-lamp T8	13,790	95W	5000K	120-277	General	54
JEBL 18L 40K 80CRI WH	00191848153895	JEBL LED High Bay	6-lamp T5HO, 8-lamp T8, 400W HID	19,303	135W	4000K	120-277	General	54
JEBL 18L 50K 80CRI WH	00191848153888	JEBL LED High Bay	6-lamp T5HO, 8-lamp T8, 400W HID	19,529	135W	5000K	120-277	General	54
JEBL 24L 40K 80CRI WH	00191848153918	JEBL LED High Bay	6-lamp T5HO, 8-lamp T8, 400W HID	24,181	174W	4000K	120-277	General	42
JEBL 24L 50K 80CRI WH	00191848153956	JEBL LED High Bay	6-lamp T5HO, 8-lamp T8, 400W HID	24,464	174W	5000K	120-277	General	42
JEBL 30L 40K 80CRI WH	00191848153925	JEBL LED High Bay	10-lamp T5HO, 575W HID	30,263	215W	4000K	120-277	General	42
JEBL 30L 50K 80CRI WH	00191848153932	JEBL LED High Bay	10-lamp T5HO, 575W HID	30,618	215W	5000K	120-277	General	42

OPERATIONAL DATA

Lumen Package	Color Temperature	Color Rendering Index	Lumens	Wattage	Comparable Light Source:	Product Weight	Package Weight	Ambient temperature
12000LM	40K	80CRI	13,630	95	4-lamp T5HO, 6-lamp T8	7.53 lbs	9.7 lbs	-40° C to 55° C
	50K		13,790					
18000LM	40K	80CRI	19,303	135	6-lamp T5HO, 8-lamp T8, 400W HID	8.79 lbs	10.82 lbs	-40° C to 55° C
	50K		19,529					
24000LM	40K	80CRI	24,181	174	8-lamp T5HO, 400W HID	12.3 lbs	14.98 lbs	-40° C to 50° C
	50K		24,464					
30000LM	40K	80CRI	30,263	215	10-lamp T5HO, 575W HID	12.3 lbs	14.98 lbs	-40° C to 45° C
	50K		30,618					

Accessories next page

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: JEBL 24L 40K 80CRI WH Note:	Type A

CS CONTRACTOR SELECT™

LITHONIA LIGHTING®

Specifications

INTENDED USE:

The Lithonia Lighting JEBL LED High bay is an affordable LED solution for users who prefer a luminaire with the look and feel of a round form factor. The JEBL delivers comfortable and uniform lighting for a variety of applications. **Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.**

Certain airborne contaminants may adversely affect the functioning of LEDs and other electronic components, depending on various factors such as concentrations of the contaminants, ventilation, and temperature at the end-user location. **Click here for a list of substances that may not be suitable for interaction with LEDs and other electronic components.**

CONSTRUCTION:

JEBL features a white die-cast aluminum housing. Powder coat corrosion resistant finish provides 500 hours salt fog rating. Optional clear polycarbonate or diffuse aluminum reflectors available separately. Corrosion resistant external hardware standard.

OPTICS:

A .16" thick clear tempered glass lens protects LEDs. Placement, spacing, and aperture of LEDs provides a 120 degree spread of light.

ELECTRICAL:

High-efficiency LEDs. 0-10V dimming standard for a dimming range of 100% to 10%.

Input voltage is MVOLT (120-277V). Suitable for 50/60Hz. Luminaire Surge Protection Level: Designed to withstand up to 6kV/3kA per ANSI C82.77-5-2015.

L90 > 54,000 hours.

CONTROLS:

Sensors may be field installed utilizing the wiring box accessory that is attached to the top of the fixture in the field. Recommended Acuity Brands sensors: SBOR and rSBOR.

INSTALLATION:

Corrosion resistant 1/4" NPT eye bolt with 1/2" thick loop and 6' cord with dimming lead provided for easy installation. 3/4" reducer available for stem or hook mounting. Optional surface mount bracket allows flexibility by adjusting in 15 degree increments for a total range of 150 degrees. Also capable of accepting 3/4" stem or hook. Recommended hooks include HKMG and HKF.

LISTINGS:

CSA certified to US and Canadian safety standards. Wet location listed. For use under covered ceilings. See Operational Data Chart for temperature ratings. IP65 rated. Certified to meet NSF Splash Zone 2.

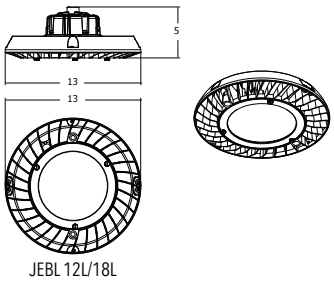
DesignLights Consortium® (DLC) Premium qualified product.

WARRANTY:

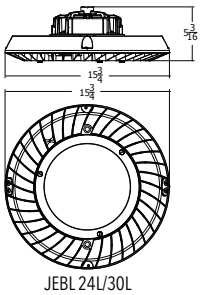
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Dimensions



JEBL 12L/18L



JEBL 24L/30L

All dimensions are inches (centimeters) unless otherwise indicated.

Accessories: *Order as separate catalog number.*

JEBLPCLR1 M4	Polycarbonate clear reflector for 12L and 18L
JEBLDALR1 M4	Diffuse Aluminum reflector for 12L and 18L
JEBLPCLR2 M4	Polycarbonate clear reflector for 24L and 30L
JEBLDALR2 M4	Diffuse Aluminum reflector for 24L and 30L
JEBLMTG ADAPTER M12	3/4" reducer
JEBLSMB1 M6	Surface mount bracket for 12L and 18L
JEBLSMB2 M6	Surface mount bracket for 24L and 30L
JCBLSC120	Safety cable 120"
JCBLSC240	Safety cable 240"
JEBLWBK18 M6	Wiring box kit for sensor attachment for use with 12L/18L fixtures
JEBLWBK M6	Wiring box kit for sensor attachment for use with 24L and 30L fixtures
JEBLWG1 M6	Lens wireguard for 12L and 18L [1]
JEBLWG2 M6	Lens wireguard for 24L and 30L [1]
HKF	Female aluminum hook
HKMG	Male grommeted aluminum hook

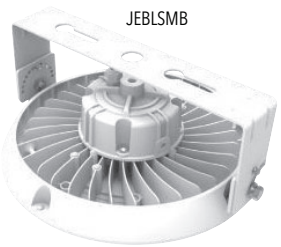
NOTES

1. Compatible with optional reflectors.

JEBLPCLR



JEBLSMB



JEBLDALR



JEBLMTG Adapter



edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: KAXW LED P1 40K R3 120 PER DDBXD Note:	Type B



KAXW
LED Wall Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

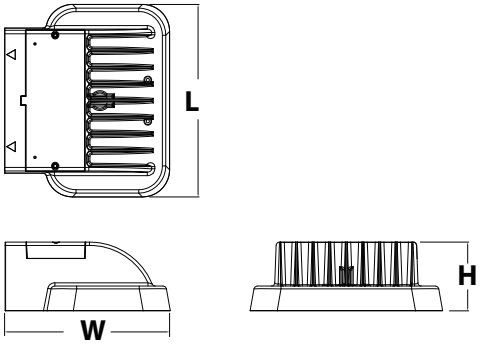
Specifications

Length: 14" (35.6 cm)

Width: 12" (35.6 cm)

Height: 5" (12.7 cm)

Weight (max): 19.7 lbs (8.9 kg)



A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability1
- This luminaire is part of an A+ Certified solution for ROAM® or XPoint™ Wireless control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background[1]

To learn more about A+, visit www.acuitybrands.com/aplus.

1. See ordering tree for details.

A+ Capable options indicated by this color background.

Ordering Information

EXAMPLE: KAXW LED P3 40K R3 MVOLT DDBXD

KAXW LED

Series	Performance package	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish *(required)*
KAXW LED	P1	30K 3000 K	R3 Type 3	MVOLT [1]	**Shipped included**	**Shipped installed**	**Shipped installed**	DDBXD Dark bronze
	P2	40K 4000 K	R4 Type 4	120 [1]	(blank) Surface mounting bracket	PER NEMA twist-lock receptacle only (controls ordered separate)[3,4]	SF Single fuse (120, 277 or 347V)[8]	DBLXD Black
	P3	50K 5000 K		208 [1]		PER5 Five-wire receptacle only (controls ordered separate)[4,5]	DF Double fuse (208, 240 or 480V)[9]	DNAXD Natural aluminum
				240 [1]		PER7 Seven-wire receptacle only (controls ordered separate)[4,5]	HS House-side shield [10]	DWHXD White
				277 [1]		PIR 180° motion/ambient light sensor, <15' mtg ht [6]	LCE Left Conduit Entry [11]	DSSXD Sandstone
				347 [2]		FAO Field adjustable output[7]	RCE Right Conduit Entry [11]	DDBTXD Textured dark bronze
				480 [2]		PIRH Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc [6]	**Shipped separately**	DBLBXD Textured black
						PIR1FC3V Bi-level, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc [6]	BSW Bird-deterrent spikes[10]	DNATXD Textured natural aluminum
						PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc [6]	EGS External glare shield[10]	DWHGXD Textured white
								DSSTXD Textured sandstone

NOTES

1 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
2 Not available in the P1 performance package.
3 Not available with ROAM®. See PER5 or PER7 option.
4 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See Accessories information.
5 If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls.
6 Specifies the Sensor Switch MSOD-7-ODP control; see Outdoor Control Technical Guide for details. Dimming driver standard. Not available with PER5 or PER7. Must specify 120V or 277V. Requires PER or separate on/off.
7 Not available with PER5 or PER7 options.
8 Must specify 120, 277, or 347V option.
9 Must specify 208, 240, or 480V option.
10 Also available as a separate accessory; see Accessories information.
11 Requires a contractor supplied ½" EMT raintight fitting.
12 Requires luminaire to be specified with PER, PER5 or PER7 option. Ordered and shipped as a separate line item from Acuity Brands Controls.

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [12]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [12]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [12]
DSHORT SBK U	Shorting cap
KAXWHS U	House-side shield
KAXWBSW U	Bird-deterrent spikes
KAXWEGS U	External glare shield

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: KAXW LED P1 40K R3 120 PER DDBXD Note:	Type B

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	29W	R3	3,322	1	0	1	115	3,545	1	0	1	122	3,607	1	0	1	124
		R4	3,415	1	0	1	118	3,643	1	0	1	126	3,707	1	0	1	128
P2	49W	R3	5,731	1	0	1	117	6,115	1	0	1	125	6,222	1	0	1	127
		R4	5,891	1	0	1	120	6,285	1	0	1	128	6,396	1	0	1	131
P3	79W	R3	8,852	1	0	1	112	9,445	2	0	2	120	9,611	2	0	2	122
		R4	9,099	2	0	2	115	9,708	2	0	2	123	9,879	2	0	2	125

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).
* Shaded cells include active dynamic temperature sensing.

Ambient	Lumen Multiplier		
	P1	P2	P3
0°C	1.05	1.05	1.05
10°C	1.03	1.03	1.03
20°C	1.01	1.01	1.01
25°C	1	1	1
30°C	0.99	0.99	0.99
40°C	0.97	0.97	0.93
45°C	0.96	0.96	0.84
50°C	0.95	0.95	0.74

Electrical Load

Package		120V	208V	240V	277V	347V	480V
P1	Current (A)	0.24A	0.14A	0.13A	0.11A		
	System Watts	29W	29W	29W	29W		
P2	Current (A)	0.41A	0.24A	0.21A	0.18A	0.14A	0.11A
	System Watts	49W	48W	48W	48W	47W	47W
P3	Current (A)	0.66A	0.38A	0.33A	0.29A	0.23A	0.17A
	System Watts	79W	78W	78W	78W	77W	76W

Projected LED Lumen Maintenance

Operating Hours	25,000	50,000	100,000
Lumen Maintenance Factor	>0.94	>0.89	>0.80

Values calculated according to IESNA TM-21-11 methodology and valid up to 40°C.

PER Table

Control	PER (3 wire)	PER5 (5 wire)		PER7 (7 wire)		
			Wire 4/Wire5		Wire 4/Wire5	Wire 6/Wire7
Photocontrol Only (On/Off)	✔	⚠	Wired to dimming leads on driver	⚠	Wired to dimming leads on driver	Wires Capped inside fixture
ROAM	⊘	✔	Wired to dimming leads on driver	⚠	Wired to dimming leads on driver	Wires Capped inside fixture
ROAM with Motion (ROAM on/off only)	⊘	⚠	Wires Capped inside fixture	⚠	Wires Capped inside fixture	Wires Capped inside fixture
Future-proof*	⊘	⚠	Wired to dimming leads on driver	✔	Wired to dimming leads on driver	Wires Capped inside fixture
Future-proof* with Motion	⊘	⚠	Wires Capped inside fixture	✔	Wires Capped inside fixture	Wires Capped inside fixture

✔ Recommended
⊘ Will not work
⚠ Alternate

*Future-proof means: Ability to change controls in the future.

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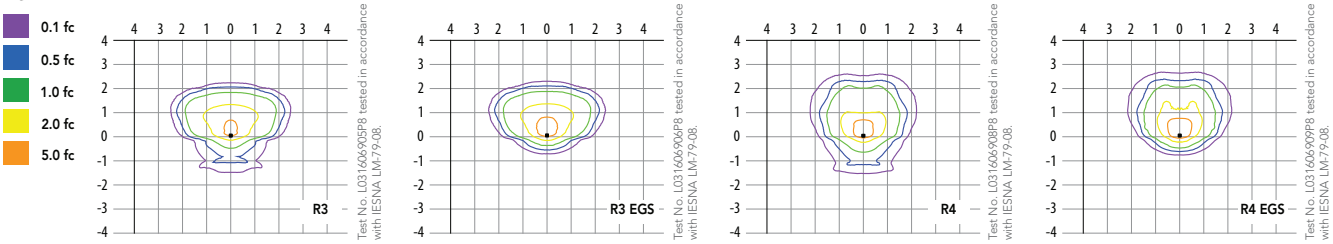
edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: KAXW LED P1 40K R3 120 PER DDBXD Note:	Type B

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's KAXW homepage.

Isofootcandle plots for the KAXW LED P3 40K. Distances are in units of mounting height (20').

LEGEND



FEATURES & SPECIFICATIONS

INTENDED USE
This feature-rich luminaire embodies the highest level of functionality with extraordinary efficacy which maximizes your application efficiency providing high levels of light for minimal cost specifically for building-mounted doorway and pathway illumination on nearly any type of facility.

CONSTRUCTION
The die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. This modular design allows for ease of maintenance and future light engine upgrades. The LED driver is installed in a separate compartment to thermally isolate it from the light engines for low operating temperature and long life. The housing is completely sealed against moisture and environmental contaminants (IP65).

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Individually formed acrylic lenses are engineered for superior application efficiency which maximizes the light in the areas where it is most needed. Light engines are available in 3000 K, 4000 K or 5000 K (minimum 70 CRI) configurations. The KAXW has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to >L80/100,000 hours). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours.

INSTALLATION
Included wall mount plate facilitates a quick and easy installation. Mounting bolts feature a 1000-hour salt fog finish. Optional bi-level motion sensor and NEMA 3, 5 or 7 pin twist lock photocontrol receptacle are also available.

LISTINGS
CSA Listed for wet locations. Light engines and electrical compartment are IP66 rated. Rated for temperatures as low as -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSXW1 LED 20C 1000 40K T4M MVOLT DDBXD Note:	Type C



D-Series Size 1
LED Wall Luminaire

Buy American

d#series

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

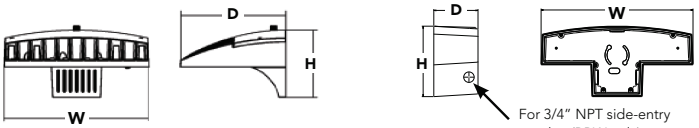
Specifications

Luminaire

Width:	13-3/4" (34.9 cm)	**Weight:**	12 lbs (5.4 kg)
Depth:	10" (25.4 cm)		
Height:	6-3/8" (16.2 cm)		

Back Box (BBW, E20WC)

Width:	13-3/4" (34.9 cm)	**BBW Weight:**	5 lbs (2.3 kg)
Depth:	4" (10.2 cm)	**E20WC Weight:**	10 lbs (4.5 kg)
Height:	6-3/8" (16.2 cm)		



Introduction

The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW1 LED 20C 1000 40K T3M MVOLT DDBTXD

DSXW1 LED

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	10C 10 LEDs (one engine) 20C 20 LEDs (two engines) [1]	350 350 mA 530 530 mA 700 700 mA 1000 1000 mA (1 A) [1]	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted	T2S Type II Short T2M Type II Medium T3S Type III Short T3M Type III Medium T4M Type IV Medium TFTM Forward Throw Medium	MVOLT [2] 120 [3] 208 [3] 240 [3] 277 [3] 347 [3,4] 480 [3,4]	**Shipped included** (blank) Surface mounting bracket BBW Surface-mounted back box (for conduit entry) [5]	**Shipped installed** PE Photoelectric cell, button type [6] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) PIR 180° motion/ambient light sensor, <15' mtg ht [1,7] PIRH 180° motion/ambient light sensor, 15-30' mtg ht [1,7] PIR1FC3V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc [1,7] PIRH1FC3V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc [1,7] E20WC Emergency battery backup (includes external component enclosure), CA Title 20 compliant [8,9]

Other Options

Shipped installed

SF	Single fuse (120, 277 or 347V) [3,10]
DF	Double fuse (208, 240 or 480V) [3,10]
HS	House-side shield [11]
SPD	Separate surge protection [12]

Shipped separately [11]

BSW	Bird-deterrent spikes
VG	Vandal guard
DDL	Diffused drop lens

Finish *(required)*

DDBXD	Dark bronze	DSSXD	Sandstone	DWHGXD	Textured white
DBLXD	Black	DDBTXD	Textured dark bronze	DSSTXD	Textured sandstone
DNAXD	Natural aluminum	DBLBXD	Textured black		
DWHXD	White	DNATXD	Textured natural aluminum		

Accessories

Ordered and shipped separately.

DSXWHS U	House-side shield (one per light engine)
DSXWBSW U	Bird-deterrent spikes
DSXW1VG U	Vandal guard accessory

NOTES

1. 20C 1000 is not available with PIR, PIRH, PIR1FC3V or PIRH1FC3V.
2. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
3. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
4. Only available with 20C, 700mA or 1000mA. Not available with PIR or PIRH.
5. Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory.
6. Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
7. Reference Motion Sensor table on page 3.
8. Same as old ELCW. Cold weather (-20C) rated. Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with fusing. Not available with 347 or 480 voltage options. Emergency components located in back box housing. Emergency mode IES files located on product page at www.lithonia.com
9. Not available with SPD.
10. Not available with E20WC.
11. Also available as a separate accessory; see Accessories information.
12. Not available with E20WC.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSXW1 LED 20C 1000 40K T4M MVOLT DDBXD Note:	Type C

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Contact factory for performance data on any configurations not shown here.

LEDs	Drive Current (mA)	System Watts	Dist. Type	30K (3000 K, 70CRI)					40K (4000 K, 70CRI)					50K (5000 K, 70CRI)					AMBPC (Amber Phosphor Converted)				
				Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
10C (10 LEDs)	350mA	13W	T2S	1,415	0	0	1	109	1,520	0	0	1	117	1,530	0	0	1	118	894	0	0	1	69
			T2M	1,349	0	0	1	104	1,448	0	0	1	111	1,458	0	0	1	112	852	0	0	1	66
			T3S	1,399	0	0	1	108	1,503	0	0	1	116	1,512	0	0	1	116	884	0	0	1	68
			T3M	1,385	0	0	1	107	1,488	0	0	1	114	1,497	0	0	1	115	876	0	0	1	67
			T4M	1,357	0	0	1	104	1,458	0	0	1	112	1,467	0	0	1	113	858	0	0	1	66
			TFTM	1,411	0	0	1	109	1,515	0	0	1	117	1,525	0	0	1	117	892	0	0	1	69
	530 mA	19W	T2S	2,053	1	0	1	108	2,205	1	0	1	116	2,220	1	0	1	117	1,264	0	0	1	67
			T2M	1,957	1	0	1	103	2,102	1	0	1	111	2,115	1	0	1	111	1,205	0	0	1	63
			T3S	2,031	1	0	1	107	2,181	1	0	1	115	2,194	1	0	1	115	1,250	0	0	1	66
			T3M	2,010	1	0	1	106	2,159	1	0	1	114	2,172	1	0	1	114	1,237	0	0	1	65
			T4M	1,970	1	0	1	104	2,115	1	0	1	111	2,129	1	0	1	112	1,212	0	0	1	64
			TFTM	2,047	0	0	1	108	2,198	1	0	1	116	2,212	1	0	1	116	1,260	0	0	1	66
	700 mA	26W	T2S	2,623	1	0	1	101	2,816	1	0	1	108	2,834	1	0	1	109	1,544	0	0	1	59
			T2M	2,499	1	0	1	96	2,684	1	0	1	103	2,701	1	0	1	104	1,472	0	0	1	57
			T3S	2,593	1	0	1	100	2,785	1	0	1	107	2,802	1	0	1	108	1,527	0	0	1	59
			T3M	2,567	1	0	1	99	2,757	1	0	1	106	2,774	1	0	1	107	1,512	0	0	1	58
			T4M	2,515	1	0	1	97	2,701	1	0	1	104	2,718	1	0	1	105	1,481	0	0	1	57
			TFTM	2,614	1	0	1	101	2,808	1	0	1	108	2,825	1	0	1	109	1,539	0	0	1	59
	1000 mA	39W	T2S	3,685	1	0	1	94	3,957	1	0	1	101	3,982	1	0	1	102	2,235	1	0	1	57
			T2M	3,512	1	0	1	90	3,771	1	0	1	97	3,794	1	0	1	97	2,130	1	0	1	55
			T3S	3,644	1	0	1	93	3,913	1	0	1	100	3,938	1	0	1	101	2,210	1	0	1	57
			T3M	3,607	1	0	1	92	3,873	1	0	1	99	3,898	1	0	1	100	2,187	1	0	1	56
			T4M	3,534	1	0	2	91	3,796	1	0	2	97	3,819	1	0	2	98	2,143	1	0	1	55
			TFTM	3,673	1	0	1	94	3,945	1	0	1	101	3,969	1	0	1	102	2,228	1	0	1	57
20C (20 LEDs)	350mA	23W	T2S	2,820	1	0	1	123	3,028	1	0	1	132	3,047	1	0	1	132	1,777	1	0	1	77
			T2M	2,688	1	0	1	117	2,886	1	0	1	125	2,904	1	0	1	126	1,693	1	0	1	74
			T3S	2,789	1	0	1	121	2,994	1	0	1	130	3,014	1	0	1	131	1,757	0	0	1	76
			T3M	2,760	1	0	1	120	2,965	1	0	1	129	2,983	1	0	1	130	1,739	1	0	1	76
			T4M	2,704	1	0	1	118	2,905	1	0	1	126	2,922	1	0	1	127	1,704	1	0	1	74
			TFTM	2,811	1	0	1	122	3,019	1	0	1	131	3,038	1	0	1	132	1,771	0	0	1	77
	530 mA	35W	T2S	4,079	1	0	1	117	4,380	1	0	1	125	4,407	1	0	1	126	2,504	1	0	1	72
			T2M	3,887	1	0	1	111	4,174	1	0	1	119	4,201	1	0	1	120	2,387	1	0	1	68
			T3S	4,033	1	0	1	115	4,331	1	0	1	124	4,359	1	0	1	125	2,477	1	0	1	71
			T3M	3,993	1	0	2	114	4,288	1	0	2	123	4,315	1	0	2	123	2,451	1	0	1	70
			T4M	3,912	1	0	2	112	4,201	1	0	2	120	4,227	1	0	2	121	2,402	1	0	1	69
			TFTM	4,066	1	0	2	116	4,366	1	0	2	125	4,394	1	0	2	126	2,496	1	0	1	71
	700 mA	46W	T2S	5,188	1	0	1	113	5,572	1	0	1	121	5,607	1	0	1	122	3,065	1	0	1	67
			T2M	4,945	1	0	2	108	5,309	1	0	2	115	5,343	1	0	2	116	2,921	1	0	1	64
			T3S	5,131	1	0	2	112	5,510	1	0	2	120	5,544	1	0	2	121	3,031	1	0	1	66
			T3M	5,078	1	0	2	110	5,454	1	0	2	119	5,487	1	0	2	119	3,000	1	0	1	65
			T4M	4,975	1	0	2	108	5,343	1	0	2	116	5,376	1	0	2	117	2,939	1	0	1	64
			TFTM	5,172	1	0	2	112	5,554	1	0	2	121	5,589	1	0	2	122	3,055	1	0	1	66
	1000 mA	73W	T2S	7,204	1	0	2	99	7,736	2	0	2	106	7,784	2	0	2	107	4,429	1	0	1	61
			T2M	6,865	1	0	2	94	7,373	2	0	2	101	7,419	2	0	2	102	4,221	1	0	1	58
			T3S	7,125	1	0	2	98	7,651	1	0	2	105	7,698	1	0	2	105	4,380	1	0	1	60
			T3M	7,052	1	0	2	97	7,573	2	0	2	104	7,620	2	0	2	104	4,335	1	0	2	59
			T4M	6,909	1	0	2	95	7,420	1	0	2	102	7,466	1	0	2	102	4,248	1	0	2	58
			TFTM	7,182	1	0	2	98	7,712	1	0	2	106	7,761	1	0	2	106	4,415	1	0	2	60

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSXW1 LED 20C 1000 40K T4M MVOLT DDBXD Note:	Type C

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	**77°F**	**1.00**
30°C	86°F	1.00
40°C	104°F	0.98

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXW1 LED 20C 1000** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.93	0.88

Electrical Load

LEDs	Drive Current (mA)	System Watts	Current (A) 120V	208V	240V	277V	347V	480V
10C	350	14 W	0.13	0.07	0.06	0.06	-	-
	530	20 W	0.19	0.11	0.09	0.08	-	-
	700	27 W	0.25	0.14	0.13	0.11	-	-
	1000	40 W	0.37	0.21	0.19	0.16	-	-
20C	350	24 W	0.23	0.13	0.12	0.10	-	-
	530	36 W	0.33	0.19	0.17	0.14	-	-
	700	47 W	0.44	0.25	0.22	0.19	0.15	0.11
	1000	74 W	0.69	0.40	0.35	0.30	0.23	0.17

Motion Sensor Default Settings

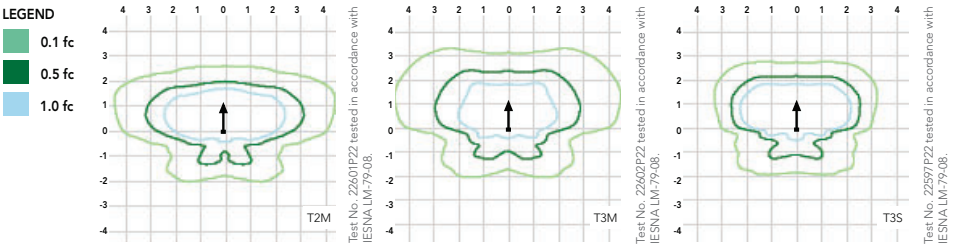
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*For use when motion sensor is used as dusk to dawn control

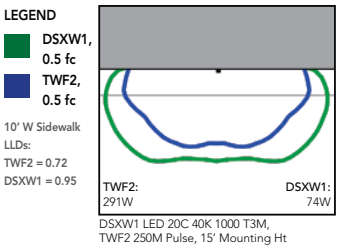
Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 1 homepage.

Isofootcandle plots for the DSXW1 LED 20C 1000 40K. Distances are in units of mounting height (15').



Distribution overlay comparison to 250W metal halide.



DSXW1 LED 20C 40K 1000 T3M, TWF2 250M Pulse, 15' Mounting Ht

Options and Accessories



T3M (left)



HS - House-side shields



BSW - Bird-deterrent spikes



VG - Vandal guard



DDL - Diffused drop lens

FEATURES & SPECIFICATIONS

INTENDED USE
The energy savings, long life and easy-to-install design of the D-Series Wall Size 1 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION
Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65).

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building mounted applications. Light engines are available in 3000 K (70 min. CRI), 4000 K (70 min. CRI) or 5000 K (70 min. CRI) configurations.

ELECTRICAL
Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L88/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 2.5KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION
Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS
CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

BUY AMERICAN
This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

WARRANTY
Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: ZL1N L48 7000LM FST MVOLT 40K 80CRI WH Note: Mounting to be confirmed. Accessories are required if the fixture are required suspended	Type D

LITHONIA LIGHTING®

Catalog Number
Notes
Type

FEATURES & SPECIFICATIONS

INTENDED USE — Built on the compact, low-profile Z strip channel, this LED strip offers long maintenance-free life, several color temperatures, lumen outputs and lengths. Ideal for new construction and retrofit applications in T5 and T8 lengths. Ideal for uplight and downlight in commercial, retail, manufacturing, warehouse, cove and display applications. **Certain airborne contaminants can diminish the integrity of acrylic and/or polycarbonate.** Click here for Acrylic-Polycarbonate Compatibility table for suitable uses.

CONSTRUCTION — Compact-design channel and cover are formed from code-gauge cold-rolled steel. Easy to install row aligner included for continuous row mounting.

Finish: Paint options include high-gloss, baked white enamel (WH), galvanized (GALV), matte black (MB) and smoke gray (SKGY). After fabrication, five-stage iron phosphate pre-treatment ensures superior paint adhesion and rust resistance.

OPTICS — Standard diffuse snap on/snap off lens eliminates pixels, improves uniformity and minimizes glare. L/LENS option available.

ELECTRICAL — L70>60,000hours. Utilizes high-output LEDs integrated on a two-layer circuit board, ensuring cool-running operation. Optional internal pluggable wiring harness for reduced labor cost in row mounting applications. (See PLR_ ordering information on page 2.) Electronic LED driver is rated for 75 input watts maximum (see Operational Data on page 4 for actual wattage consumption), **multi-volt input and 0-10V dimming standard**. This fixture is designed to withstand a maximum line surge of 2.5kV at 0.75kA combination wave for indoor locations, for applications requiring higher level of protection additional surge protection must be provided.

LEDs provide nominal 80 CRI at 3000 K, 3500 K,4000 K, or 5000 K.

Lumen output up to 2,000 lumens per foot. In 86°F (30°C) ambient environments. Luminaire should be installed in applications where ambient temperatures do not exceed 86°F (30°C).

INSTALLATION — Tool-less channel cover for easy installation.

Fixture may be surface mounted (with or without ZSPRG hanger), pendant or stem mounted with appropriate mounting options. Three-point aligner locks in place for easy continuous row mounting.

LISTINGS — CSA certified to US and Canadian safety standards. For use in damp locations between -40°F (-40°C) and 86°F (30°C).

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

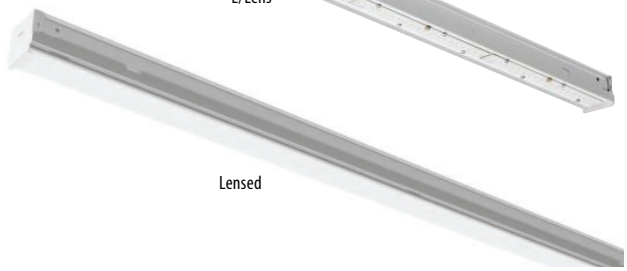
LED Striplight

ZL1N

24", 48" and 96" Lengths



L/Lens



Lensed

C US

Buy American

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: ZL1N L48 7000LM FST MVOLT 40K 80CRI WH Note: Mounting to be confirmed. Accessories are required if the fixture are required suspended	Type D

ZL1N LED Striplight

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: ZL1N L48 3000LM FST MVOLT 40K 80CRI WH

Series		Length		Reflectors‡		Nominal lumens‡		Diffuser		Voltage	
ZL1N	LED striplight	L24	24" ‡	(blank)	Less reflector	1500LM	1,500 lumens	FST	Snap on frosted, diffuse	MVOLT	120-277V
				SMR	Symmetric	2500LM	2,500 lumens	L/LENS	No diffuser	120	120V
						3500LM	3,500 lumens	SBL FST	Straight blade louver with snap on frosted, diffuse	208	208V
		L46	46"	(blank)	Less reflector	3000LM	3,000 lumens			240	240V
		L48	48"	ASR	Asymmetric (L48 only)	5000LM	5,000 lumens			277	277V
				SMR	Symmetric	7000LM	7,000 lumens			347	347V ‡
TZL1N	LED striplight‡	L92	92"	(blank)	Less reflector	6000LM	6,000 lumens			480	480V ‡
		L96	96"	SMR	Symmetric	10000LM	10,000 lumens				
						14000LM	14,000 lumens				

Color temperature		Color rendering index		Options			Paint finish	
30K	3000 K	80CRI	80 CRI	PLR__	Plug-in wiring‡	**Individual Controls‡**	WH	White
35K	3500 K	90CRI	90 CRI	PLR1LVG	Plug-in wiring-low voltage‡	LBOZU	GALV	Galvanized
40K	4000 K			E7W	Power Sentry® PS750L, 7 watt emergency battery, CA Title 20 non-compliant (LINK)‡	360° low mount LSXR PIR sensor, (7-15' mounting heights), ON/OFF occupancy, pre-wired (LINK) ‡	MB	Matte black
50K	5000 K			2E7W	Two Power Sentry® PS750L, 7 watt emergency batteries, CA Title 20 non-compliant (LINK)‡	LBH0SZU 360° low mount LSXR PIR sensor, (7-15' mounting heights), high/low occupancy dimming, pre-wired (LINK)‡	SKGY	Smoke gray
				E10WLCP	Power Sentry® PS1055LCP, 10 watt emergency battery, Certified in CA Title 20 MAEDBS (LINK)‡	LBPZU 360° low mount LSXR PIR sensor, (7-15' mounting heights), ON/OFF photocell, pre-wired (LINK) ‡		
				2E10WLCP	Two Power Sentry® PS1055LCP, 10 watt emergency batteries, Certified in CA Title 20 MAEDBS (LINK)‡	LBM0SZU 360° low mount LSXR PIR sensor, (7-15' mounting heights), dimming and switching photocell, pre-wired (LINK) ‡		
				E15WLCP	Power Sentry® PS1555LCP, 15 watt emergency battery, Certified in CA Title 20 MAEDBS (LINK)‡	**Cord sets:‡**		
				OUTEND	Cord set to exit endplate of fixture	CS1W Cord with NEMA 5-15P, 120V straight blade plug, 18 gauge, 3 conductors, white, 6ft		
				BAA	Buy America(n) Act Compliant	CS3W Cord with NEMA L5-15P, 120V twist lock plug, 18 gauge, 3 conductor, white, 6ft		
				nLight® Wireless ‡		CS7W Cord with NEMA 7-15P, 277V straight blade plug, 18 gauge, 3 conductors, white, 6ft		
				NLTAIR2 RLSXR10	nLight® Air Generation 2 enabled, 360° low mount sensor, (7 to 15' heights) (LINK)	CS11W Cord with NEMA L7-15P, 277V twist lock plug, 18 gauge, 3 conductors, white, 6ft		
				NLTAIR2 RLSXR10EM	nLight® Air Generation 2 enabled, 360° low mount sensor, (7 to 15' heights),UL 924 Emergency Operation, via power interrupt detection (not available with battery pack) (LINK)‡	CS25W Cord with NEMA L24-20P, 347V twist lock plug, 18 gauge, 3 conductors, white, 6ft		
						CS97W Cord with NEMA L8-20P, 480V twist lock plug, 18 gauge, 3 conductors, white, 6ft		
						CS93W Cord only (no plug), 18 gauge, 3 conductors, white, 6ft		

Accessories: *Order as separate catalog number.*

HC36 M12	Hanger chain, 36" (1 pair)	ZLR L24 SYM UPL WH	24" symmetric reflector with uplight, white finish
ZACVH M100	Adjustable 10' aircraft cable with Y hanger (1 pair)	ZLR L24 SYM WH	24" symmetric reflector, white finish
ZLANGBKT	Luma-tilt™ angle bracket for shelf or ledge mounting only	ZLR L46 SYM UPL WH	46" symmetric reflector with uplight, white finish
SQ_	Swivel stem hanger (specify length in 2" increments up to 48")	ZLR L46 SYM WH	46" symmetric reflector, white finish
NPP16D	nLight® wired power/relay pack, 0-10VDC dimming output (LINK)	ZLR L48 ASY WH	48" asymmetric reflector, white finish
RPP20D	nLight® air Generation 2 enabled, power/relay pack, 0-10V dimming output (LINK)	ZLR L48 SYM UPL WH	48" symmetric reflector with uplight, white finish
LSXR	Sensor Switch® LSXR occupancy sensor (LINK)	ZLR L48 SYM WH	48" symmetric reflector, white finish
ZSPRG J2	Tong and T-grid hanger, for 15/16" T-grid (Order quantity required in multiples of 2)	ZLR L92 SYM UPL WH	92" symmetric reflector with uplight, white finish
WGZ24	24" wireguard, white ‡	ZLR L92 SYM WH	92" symmetric reflector, white finish
WGZ48	48" wireguard, white ‡	ZLR L96 SYM UPL WH	96" symmetric reflector with uplight, white finish
		ZLR L96 SYM WH	96" symmetric reflector, white finish
		UNIVERSAL REFL ALIGNER	Universal reflector aligners, quantity 1

COMMERCIAL INDOOR: One Lithonia Way, Conyers, GA 30012 Phone: 800-705-SERV (7378) techsupport-commercialindoor@acuitybrands.com www.lithonia.com © 2013-2021 Acuity Brands Lighting, Inc. All rights reserved.

ZL1N LED Striplight

‡ Option Value Ordering Restrictions	
Option value	**Restriction**
2E7W	MVOLT required. Available with L92 or L96 only. Not available with L24, L46, L48, L92 6000LM, L96 6000LM or any cordset that includes a plug.
2E10WLCP	MVOLT required. Available with L92 or L96 with 10,000LM or 14000LM only. Not available with L24, L46, L48, L92 6000LM, L96 6000LM or any cordset that includes a plug.
347, 480	Utilizes step down transformer.
Cord Sets	Must specify voltage when plug is inlcuded. Cordsets exit back of fixture unless OUTEND option is specified.
E7W	MVOLT required. Available with L46, L48, L92 or L96 with 10000LM or 14000LM only. Not available with L24 or any cordset that includes a plug.
E10WLCP	MVOLT required. Available with L46, L48, L92 or L96 only. Not available with L24 or any cordset that includes a plug.
E15WLCP	MVOLT required. Available with L92 or L96 only. Not available with L24, L46, L48 or any cordset that inlcudes a plug.
HTZL1N	Tandem fixture ships as two L46 or L48 fixtures.
Individual Controls	Available with MVOLT, 347 or 480 only. See ordering information on page 6 for more configurations. This sensor configuration is suitable for minimum ambient temperature of 14°F (-10°C). See page 5 for low temperature option providing -4°F (-20°C) minimum ambient. When choosing Sensor and PLR for same fixture, consult the factory. Sensors come prewired, they must be snapped into place at time of installation.
L24	Not available with 347V, 480V or emergency batteries.
nLight® Wireless	See LINK in sensor description to RLSXR specification sheet for more configurations. When choosing a sensor and PLR for same fixture, consult the factory. Sensors come prewired, they must be snapped into place at time of installation.
NLTAIR2 RLSXR10EM	Not available with 347 or 480. MVOLT required.
Nominal Lumens	See Operational Data on page 2 for actual lumens.
PLR__	Not available with cordset options. See ordering information on page 5. When choosing a sensor and PLR for the same fixture, consult the factory.
PLR1LVG	Not available with cordset options.
Reflectors	Optional. Reflectors ship separately.
WGHZ24	Not available with ASR or SMR reflector options.
WGHZ48	Not available with ASR or SMR reflector options. Order a Qty of 2 for L92 or L96 tandem fixtures.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: ZL1N L48 7000LM FST MVOLT 40K 80CRI WH Note: Mounting to be confirmed. Accessories are required if the fixture are required suspended	Type D

ZL1N LED Striplight

OPERATIONAL DATA

	Nominal lumen package	Length (inches)	Delivered Lumens 3000 K CCT @ 77°F (25°C) ambient temperature		Delivered Lumens 3500 K CCT @ 77°F (25°C) ambient temperature		Delivered Lumens 4000 K CCT @ 77°F (25°C) ambient temperature		Delivered Lumens 5000 K CCT @ 77°F (25°C) ambient temperature		Wattage @ 120V/277V	Comparable Light Source
			80 CRI	90 CRI	80 CRI	90 CRI	80 CRI	90 CRI	80 CRI	90 CRI		
Lensed	1500LM	24	1738	1409	1777	1467	1804	1494	1871	1528	15	1-lamp 17W T8
	2500LM	24	2265	1846	2315	1900	2351	1947	2438	1991	19	1-lamp 17W T8
	3500LM	24	3586	2924	3666	3026	3723	3084	3860	3152	31	1-lamp 32W T8, 1-lamp 54W T5HO, 50W HID
	3000LM	46 or 48	3172	2586	3243	2677	3293	2728	3415	2788	25	1-lamp 32W T8, 1-lamp 54W T5HO, 50W HID
	5000LM	46 or 48	4417	3601	4515	3727	4585	3798	4754	3882	34	2-lamp 32W T8, 1-lamp 54W T5HO, 70W HID
	7000LM	46 or 48	6535	5328	6681	5515	6785	5619	7035	5744	52	3-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	6000LM	92 or 96	6561	5349	6708	5537	6812	5642	7063	5767	48	3-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	10000LM	92 or 96	8687	7082	8881	7331	9019	7470	9351	7636	68	4-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	14000LM	92 or 96	12457	10513	12735	10665	12933	10711	13409	10949	104	4-lamp 32W T8, 3-lamp 54W T5HO, 150W HID
Unlensed	1500LM	24	1881	1534	1923	1588	1953	1618	2025	1654	15	1-lamp 17W T8
	2500LM	24	2452	1999	2506	2069	2545	2108	2639	2155	19	1-lamp 17W T8
	3500LM	24	3882	3165	3969	3276	4031	3338	4179	3412	31	1-lamp 32W T8, 1-lamp 54W T5HO, 50W HID
	3000LM	46 or 48	3434	2800	3511	2898	3565	2953	3697	3019	25	1-lamp 32W T8, 1-lamp 54W T5HO, 50W HID
	5000LM	46 or 48	4781	3898	4888	4035	4964	4111	5147	4203	34	2-lamp 32W T8, 1-lamp 54W T5HO, 70W HID
	7000LM	46 or 48	7075	5768	7233	5971	7345	6083	7616	6219	52	3-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	6000LM	92 or 96	7103	5791	7261	5995	7374	6108	7646	6243	48	3-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	10000LM	92 or 96	9404	7667	9614	7937	9764	8087	10123	8266	68	4-lamp 32W T8, 2-lamp 54W T5HO, 100W HID
	14000LM	92 or 96	13485	10994	13786	11381	14001	11596	14516	11853	104	4-lamp 32W T8, 3-lamp 54W T5HO, 150W HID

PROJECTED LUMEN MAINTENANCE

Operating Hours	0	15,000	30,000	45,000	60,000	100,000
Lumen Maintenance Factor	1	0.94	0.89	0.83	0.79	0.67

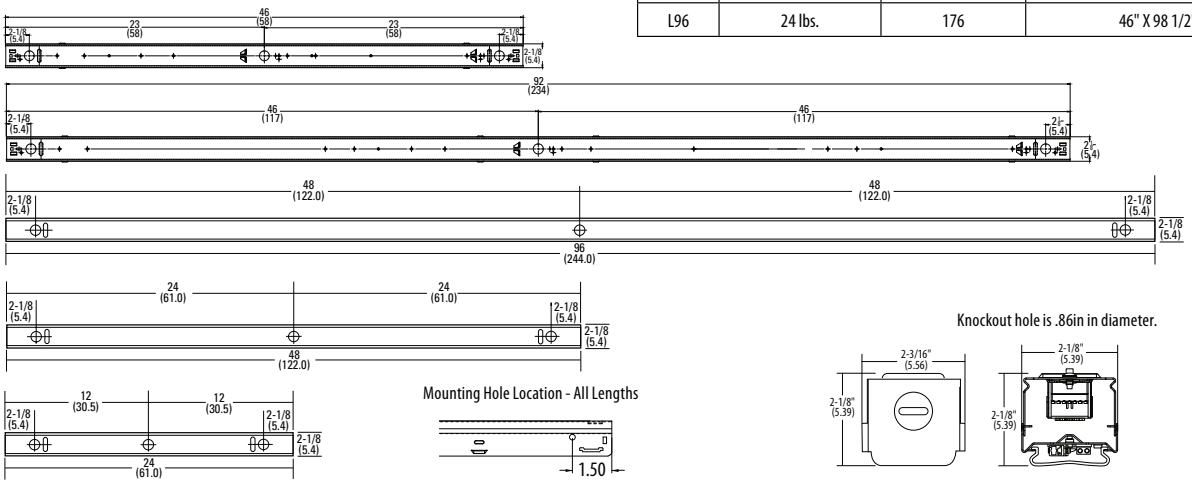
DIMENSIONS

All dimensions are shown in inches (centimeters) unless otherwise noted.

Specifications subject to change without notice.

PALLET DIMENSIONS

Length	Approximate weight	Fixtures per pallet	Approximate pallet dimensions (L x W x H)
L24	7 lbs.	408	46" X 51" X 32 11/16"
L46	11 lbs.	176	46" X 51" X 32 1/16"
L48	12 lbs.	176	46" X 51" X 31 3/8"
L92	22 lbs.	176	46" X 98 1/2" X 31 1/16"
L96	24 lbs.	176	46" X 98 1/2" X 31 1/16"



PHOTOMETRICS

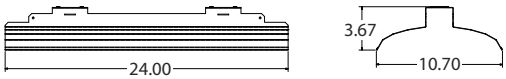
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ZL1N LED Striplight

REFLECTORS (Optional)

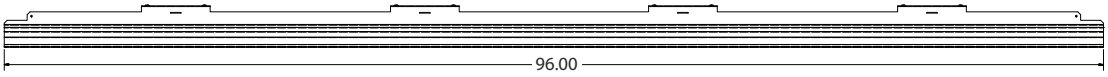
L24 Reflector



L48 Reflector



L96 Reflector





PHOTOMETRICS

Please see www.lithonia.com

PLUG-IN WIRING INFORMATION

Advanced plug-in system with two-circuit capability. Available on industrial and strip products and a variety of architectural products mounted in continuous. PLR22 (2-circuit) and crossover harness switches hot circuit serving next fixture in row. Reduces fixture types on job for alternating circuit applications (see example below.)

Easy one-step installation, saves up to 35% on labor costs. Expanded switching flexibility helps save energy.

Rows can be 50% longer with two-circuit systems. Polarized, lock-together nylon connectors prevent miswiring in the field. #12 THHN conductor, rated 600V, 90°C. White neutral wire included. Grounding accomplished by fixture in-row connectors.

CSA certified systems available with up to 2 circuits. G ground required.

Not for use with dedicated emergency circuits.

Note: Specifications subject to change without notice.

Wiring



PLR

Advanced 1 or 2-Circuit Plug-In

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Series	Number of hot wires		Branch circuits		Battery charging circuit (must be unswitched)		Dimming		Ground	
PLR	(blank)	Not required for PLR22	Circuits to which driver is connected				LV	Low-voltage dimming	G	Ground (required)
PLR22	1	Black	(blank)	Not required for PLR22 or PLR1	(blank)	No battery charging circuit				
	2	Black and red	A	Black wire	ELA	Battery pack wired to black wire				
			B	Red wire	ELB	Battery pack wired to red wire				

Typical Applications

- Multiple-circuit and single-circuit for longer continuous rows
- Multiple-circuit with alternating fixtures on separate circuits, 2-circuit (PLR22)
- Multiple circuit with night-lights located along row as desired

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ZL1N LED Striplight

LSXR – Fixture Mount Occupancy Sensor (see www.AcuityControls.com for additional information)

- Three interchangeable lens options to satisfy multiple mounting heights and coverage pattern requirements.
- Integrated mounting bracket drops lens down 3" from chase nipple.
- Single or dual relay versions — designed with robust protection from the harsh switching requirements of T5 and LED loads.
- Photocell and 0-10VDC dimming options.
- No PIR field calibration or sensitivity adjustments required.
- Sensor ambient temperature rating of 14°F (-10°C) to 131°F (55°C).

LSXR configuration	Comparable CMRB sensor	Old style sensor nomenclature
For shortest lead times use one of the following LSXR configurations		
LC0ZU	CMRB 50	MSI
LCH0SZU	CMRB 50 D	MSID
LCPZU	CMRB 50 P	MSIPED
LA0ZU	CMRB 6	MSI360
LAH0SZU	CMRB 6 D	MSI360D
LAPZU	CMRB 6 P	MSI360PED

SELECTIONS BELOW WILL EXTEND ORDER LEAD TIME. CONSULT YOUR SALES REPRESENTATIVE FOR DETAILS.

SINGLE RELAY

ORDERING INFORMATION **Example**: LAH0SZU

Series	Lens option	Dimming/Photocell	Max. dim level	Min. dim level	Temp/Humidity	Default occupancy time delay
L LSXR passive infrared indoor occupancy sensor	A High mount, 360° B Low mount, 360° C High mount aisleway	0 None[1] H High/low occupancy operation P Switching photocell (on/off)[1] M Dimming and switching photocell G Dimming and switching photocell with high/low occupancy operation	0 10 VDC 9 9 VDC 8 8 VDC 7 7 VDC	S Minimum dim level of ballast 1 1 VDC 2 2 VDC 3 3 VDC 4 4 VDC 5 5 VDC 6 6 VDC	Z None T Low temperature[2]	I 30 sec D 2.5 min X 5.0 min R 7.5 min U 10.0 min (with minimum 15 minute on time) V 15.0 min W 20.0 min Y 30.0 min

Notes

1 Max and min dim levels not applicable with this option.

2 Ambient temperature rating of -4°F (-20°C) to 131°F (55°C).

DUAL RELAY (Available with 120, 277, and 347V only)

ORDERING INFORMATION **Example**: LA2KZU

Series	Lens option	Poles	Operating mode	Temp/Humidity	Default occupancy time delay
L LSXR passive infrared indoor occupancy sensor	A High mount, 360° B Low mount, 360° C High mount aisleway	2 Dual relay	J None K Alternating off relays (promotes even lamp wear) O Alternating off relays w/photocell P Switching photocell(on/off) E Photocell on/off (pole 1 only) F Photocell on/off - both poles (dual set-point)	Z None T Low temperature[1]	I 30 sec D 2.5 min X 5.0 min R 7.5 min U 10.0 min (with minimum 15 minute on time) V 15.0 min W 20.0 min Y 30.0 min

Notes

1 Ambient temperature rating of -4°F (-20°C) to 131°F (55°C).

Example: LENS 50 J100

Replacement lenses: *Order as separate catalog number.*

Series	Lens type	Package quantity
LENS	6 High mount 360° 10 Low mount 360° 50 High mount aisleway	[blank] Single Lens J10 10-pack J100 100-pack

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ZL1N LED Striplight

OPTIONS AND ACCESSORIES

The Z Series fixture offers numerous options for almost every electrical and optical component, including a long list of field-installable accessories.

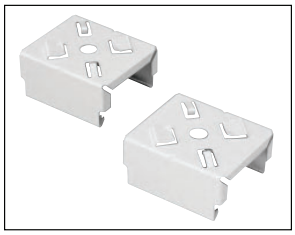


HANGER CHAIN

36" chain with Y hanger.

Order as:

HC36

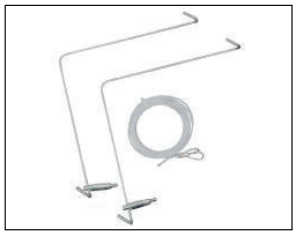


Z SPRING HANGER

Snap 'n' lock design requires no fasteners and can be used on T-grid ceiling or universal mounting systems.

Order as:

ZSPRG J2

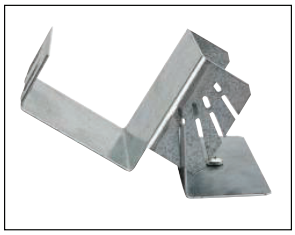


ZACVH HANGER

10' Aircraft cable with Y hanger.

Order as:

ZACVH

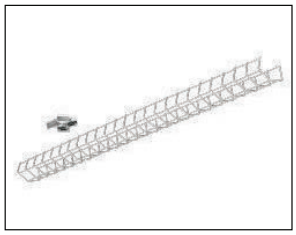


ANGLE MOUNTING BRACKET

Luma-tilt™ angle bracket ships as a pair

Order as:

ZLANGBKT



WIRE GUARD

Order as:

WGZ24

WGZ48

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 31/01/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 009 **Referencing** WTS-E04
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : EMERGILITE

Descriptions / comments

Emergency light

Comments of Professionnal :

Please confirm that light "U-B" is suitable for mounting in wet locations.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543 (WTS)
BY K.Speidel
DATE Jan 31. 2023

DILLON CONSULTING

U-B	EMERGI LITE	EF40PDMBLB
U	EMERGI LITE	ENC1W6N36LB
U1	EMERGI LITE	24ESL720U/2LM

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: EF40PDMBLB Note: EQUIVALENT OF "RMN_2_06-7W_LA_BLK" BY AIMLITE	Type U-B

EF40 & EF40P Series

Remote fixture

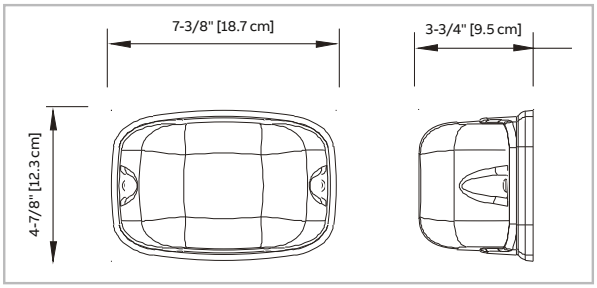


Features

- Quality illumination requires fewer fixtures
- Clear polycarbonate UV and impact resistant lens with optional tamper-proof screws to prevent tampering.
- Easy lamp replacement
- Modern design will blend into surroundings
- Selection of die-cast or polycarbonate back plate
- For indoor use only
- CSA certified to C22.2 No. 141-15
- **Warranty details at: www.emergi-lite.ca**

Dimensions

Dimensions are approximate and subject to change.



Typical specifications

Supply and install **Emergi-Lite® EF40P Series** remote emergency lighting. These remote fixtures will consist of either single or double lamp configurations as specified and include a UV resistant fire retardant polycarbonate back plate and a clear heavy-duty UV resistant polycarbonate light cover.

The remote fixture shall be certified to CSA C22.2 No. 141.

The head(s) shall be fully adjustable and be equipped with high efficiency LED lamp(s) of _____ V, _____ W.

The remote unit shall be **Emergi-Lite®** model: _____ .

Wire guards

Ordering code	Description
460.0029-E	Wall mount

Replacement lamps

Ordering code	Lamp type	Voltage/wattage
580.0097-E	MR16 LED	6V-4W
580.0122-E	MR16 LED	6V-5W
580.0093-E	MR16 LED	12V-4W
580.0098-E	MR16 LED	24V-4W
580.0100-E	MR16 LED	24V-6W
580.0104-E	MR16 LED	12V-5W
580.0106-E	MR16 LED	12V-6W
580.0113-E	MR16 LED	120V-4W

Housing colour

Black | Factory white | Grey

Ordering information

EF40P Series	Number of lamps	Lamp type	Colour	Lamp type/voltage/wattage	Options
EF40P= polycarbonate	**Blank**= one lamp **D**= two lamps	**M**= MR16	**B**= black **Blank**= factory white **G**= grey	**LA**= MR16 LED, 6V-4W **LB**= MR16 LED, 6V-5W **LG**= MR16 LED, 12V-4W **LI**= MR16 LED, 12V-5W **LJ**= MR16 LED, 12V-6W **LL**= MR16 LED, 24V-4W	**Blank**= no option **T**= tamper-proof screws[1]
Example: EF40PDMBLI			Other colours available		[1]**690.0454-E**= tamper-proof bit (sold separately)

EF40 Series	Number of lamps	Lamp type	Colour	Lamp type/voltage/wattage	Options
EF40= die-cast	**Blank**= one lamp **D**= two lamps	**M**= MR16	**B**= black **Blank**= factory white **G**= grey	**LA**= MR16 LED,6V-4W **LB**= MR16 LED, 6V-5W **LG**= MR16 LED, 12V-4W **LI**= MR16 LED, 12V-5W **LJ**= MR16 LED, 12V-6W **LL**= MR16 LED, 24V-4W **LM**= MR16 LED, 24V-6W **LW**= MR16 LED, 120V-4W	**Blank**= no option **T**= tamper-proof screws[1]
Example: EF40DMLI			Other colours available		[1]**690.0454-E**= tamper-proof bit (sold separately)

Survive-All™ ENC Series

NEMA-4X & NSF certified pictogram combination unit



Features

- Certified NEMA-4X for wall or ceiling mount
- NSF certified certified for use in food processing areas
- Polyvinyl chloride frame, with built-in gasket to prevent water infiltration
- Sealed, vandal-resistant faceplate of polycarbonate
- Long-life white LED light sources is warrantied for 10 years
- Comes standard with two pictogram films per face, for direction selection
- Two high-performance LED lamps shielded by a clear polycarbonate cover
- Sealed, maintenance-free lead-calcium or nickel-cadmium batteries
- Remote load capacity: covers with 4W LED lights 100' up to 230' of egress illumination
- Comes standard with auto-diagnostic
- Cold-weather option: -40°C (-40°F) with only 14W extra power consumption
- Meets or exceeds CSA 22.2 No.141-15
- Advanced diagnostics capabilities (specific load requirements)
- **Warranty details at: www.emergi-lite.ca**

nexus Nexus®Pro NSF NEMA-4X Made in Canada

Typical specifications

Supply and install **Emergi-Lite® Survive-All™ ENC Series** combination emergency light battery unit and pictogram sign. Designed specifically for industrial environments, the equipment frame shall be of industrial grade polyvinyl chloride with gaskets around both sides of frame contour.

The back plate shall be made of 1/8" thick aluminum sheet and shall include knock-outs for installation on an electrical box. The faceplate(s) shall be constructed of heavy-duty vandal-resistant clear polycarbonate and feature a uniformly illuminated pictogram legend. Each face plate shall come standard with two legend films for pictogram and direction selection.

The light source shall be long-life white light-emitting diodes (LED). The unit shall have attached a lower compartment containing two emergency heads with adjustable swivels and long-life LED lamps of _____ V and _____ W. The heads shall be installed on a shield housing made of rigid thermoplastic and shall be protected by a shock-absorbent, clear polycarbonate cover. The standard AC input voltage shall be 120/347VAC.

The unit shall be equipped with a magnetic test switch and an LED pilot light protected by the clear face plate. The unit shall perform auto-test functions managed by a microcontroller and shall automatically self-test for one minute every 30 days, 10 minutes in the 6th month and 30 minutes annually. When a fault is detected, the bi-colour pilot light shall turn from green to red and flash following a particular code. The code description shall be displayed on a label next to the pilot light to identify the failure type: battery, charger circuitry, LED lights for the signage, or emergency lights.

The combination unit shall meet or exceed the standard CSA C22.2 No.141-15.

The equipment shall be **Emergi-Lite®** model: _____

Wire guards

Ordering code	Description
460.0078-E	Wall mount
460.0060-E	End or ceiling mount

Survive-All™ NEMA 4X & NSF certified family



EN Series



NXM Series



EF39 & EF39P Series

Housing colour

Black

Factory white

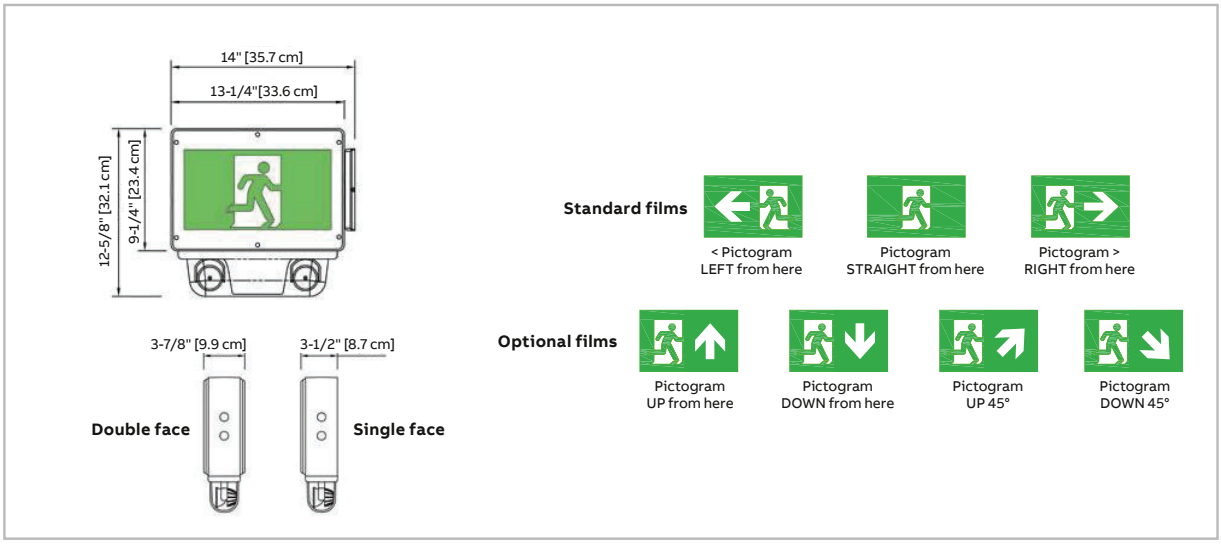
edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: ENC1W6N36LB Note: EQUIVALENT OF "CRPN_06-OJ6_ 1 _WHI_2" BY AIMLITE	Type U

Survive-All™ ENC Series

NEMA-4X & NSF certified pictogram combination unit

Dimensions

Dimensions are approximate and subject to change.



Power consumption

Model		AC specs	Emergency power for lamps				
			30 min	1H00	1H30	2H00	4H00
Pictogram sign module		Less than 2.5W	–	–	–	–	–
ENC-6L36		0.10/0.03 A	36	21	15	12	–
ENC- 6L36-CW	120/347VAC	0.25/0.08 A	36	21	15	12	–
ENC-6N36		0.10/0.03 A	36	30	20	16	8
ENC- 6N36-CW		0.25/0.08 A	36	30	20	16	8
ENC-12N60		0.18/ 0.06 A	60	40	30	20	10

Ordering information

Series	Faces / mounting[1]	Arrow configuration	Housing colour	Battery type and power
ENC= NEMA-4X & NSF pictogram exit combo unit[1]	**1**= single face **2**= double face	**Blank**= standard film[1] **U4**= arrow up 45° **U9**= arrow up **D9**= arrow down **D4**= arrow down 45°	**B**= black **W**= factory white	**6L36**= 6V-36W lead-calcium **6N36**= 6V-36W nickel-cadmium **12N60**= 12V-60W nickel-cadmium

[1]NEMA 4X certified for wall and ceiling only

[1]Universal mounting

[1]See features for standard film details

Head style and wattage	Voltage	Options
Blank= no heads ~~**LA**= MR16 LED, 6V-4W~~ **LB**= MR16 LED, 6V-5W **LG**= MR16 LED, 12V-4W **LI**= MR16 LED, 12V-5W **LJ**= MR16 LED, 12V-6W	**Blank**= 120/347VAC **-2**= 120/277VAC input	**Blank**= advanced diagnostic, non-audible (standard) **CW**= cold-weather -40°C (-40°F) to + 25°C (77°F) only with 6V single-face units **D3**= time delay (15 minutes) **NEX**= NEXUS® system interface[1] **NEXP**= NEXUS® Pro IoT[1] **NEXRF** = wireless NEXUS® system interface[1] **U**= advanced diagnostic [1]Minimum lamp load required: 20% of unit capacity

Example: ENC2W12N60LG

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ESL Series

6, 12 and 24V



Features

10-year life expectancy, maintenance-free emergency lighting units.

The **ESL Series** battery units combine long life expectancy, high-performance design and a reasonable initial cost outlay.

Ideally suited for a range of commercial applications, the long-life lead acid battery is specifically recommended for environments where the unit will be exposed to large variances in ambient temperature.

- Rugged steel cabinet with corrosion-resistant undercoating
- Removable front panel on cabinet provides easy access and allows the unit to be mounted at ceiling height
- Solid-state pulse-type charger – current-limited, temperature- compensated, short-circuit proof and reverse-polarity protected.
- Unit comes standard with electronic lockout and brownout circuits
- Sealed dust-proof transfer relay, test switch and LED indicator lights
- Long-life, maintenance-free lead acid battery
- NEXUS® compatible (for more information on NEXUS®, please consult your sales representative)
- CSA C22.2 No. 141 certified
- Standard 120/347 VAC input with line cord kit
- Advanced diagnostics capabilities (specific load requirements)
- **Warranty details at: www.emergi-lite.ca**

Nexus®Pro nexus® Made in Canada

Typical specifications

Supply and install a complete emergency lighting system as described herein and shown on the drawings.

The **Emergi-Lite® Smart Diagnostic** micro-controller board shall supply the rated load for a minimum of a 1/2 hour to 87.5% of the rated battery voltage. The unit shall be rated 120V or 347V, 60 Hz and be CSA listed. The unit shall have an output of: _____ V and _____ W.

The charger shall be fully computer tested and its charge voltage factory set to ± 1% tolerance. Chargers with field-adjusted potentiometers are not acceptable. A pulse-type charger shall be employed to promote long battery life and reduce the potential for grid corrosion. The charger shall provide a continuous high charge to recharge the battery, and when the battery is at full capacity, the charger will shut off. Periodically the charger shall provide a pulse of energy to keep the battery topped off. The pulse charger shall be precisely regulated and shall charge the battery in relation to its temperature, state or charge and input voltage fluctuations. The charger shall be current limited, temperature compensated, short-circuit proof and reverse polarity protected.

The unit shall be furnished with an electronic lockout circuit, which will connect the battery when the AC circuit is activated, and an electronic brownout circuit, which will activate the emergency lights when utility power dips below 75% of nominal voltage. A low voltage battery protection circuit shall be provided and will disconnect the load when the battery reaches the end of discharge. The unit shall self- test for 1 minute every 30 days, 10 minutes every 6 months and 30 minutes every 12 months. The unit shall be capable of full recharge in compliance with CSA specifications. The unit shall be furnished with a sealed dust tight relay, a test switch and diagnostic LED indicator lights to continuously monitor the status of the unit: Battery Failure, Battery Disconnected, Charger Failure, Lamp Failure, Service Alarm, AC "ON", Charger High Rate. The emergency lighting heads shall require no tools for orientation.

The unit shall be **Emergi-Lite®** model: _____.

Wire guards

Ordering code	Mounting	Cabinet
460.0078-E	Wall mount	"A" cabinet
460.0081-E	Wall mount	"B" cabinet
460.0034-E	Wall mount	"C" cabinet

Replacement lamps

Ordering code	Lamp type	Voltage/wattage
580.0097-E	MR16 LED	6V-4W
580.0122-E	MR16 LED	6V-5W
580.0093-E	MR16 LED	12V-4W
580.0098-E	MR16 LED	24V-4W
580.0100-E	MR16 LED	24V-6W
580.0104-E	MR16 LED	12V-5W
580.0106-E	MR16 LED	12V-6W

Housing colour

Black

Factory white

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: 24ESL720U/2LM Note: ALTERNATIVE OF "EBST-12-720-2MB-7WLA-ATD" BY AIMLITE **ATTENTION AIMLITE PRODUCT CODE IS INVALID, 720W NOT AVAILABLE WITH 12V, ONLY WITH 24V** ALTERNATIVE BECAUSE EMERGI-LITE LED HEADS ARE 6W (INSTEAD OF 7W ON AIMLITE LED HEADS)**	Type U1

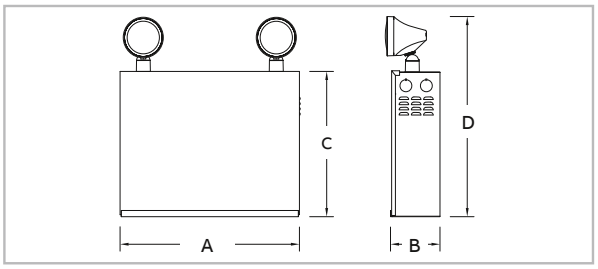
N = New options

ESL Series

6, 12 and 24V

Dimensions

Dimensions are approximate and subject to change.



Cabinet	Dimensions			
	A	B	C	D
A	13 1/4" (33.7 cm)	3 5/8" (9.2 cm)	10 1/2" (26.7 cm)	14 1/4" (36.2 cm)
B	16 1/8" (40.9 cm)	5 1/2" (13.9 cm)	10 1/4" (26.0 cm)	13 7/8" (35.2 cm)
C	23 1/8" (58.7 cm)	5 1/2" (13.9 cm)	10 1/4" (26.0 cm)	13 7/8" (35.2 cm)

Power consumption and unit rating

Model		AC specs	Wattage capacity				
			30 min	1H00	1H30	2H00	4H00
06ESL36		0.10/0.04 A	36	21	15	12	6
06ESL72		0.22/0.08 A	72	42	30	24	12
06ESL108		0.22/0.08 A	108	63	45	36	18
06ESL180		0.22/0.08 A	180	105	75	60	30
12ESL36		0.09/0.03 A	36	21	15	12	6
12ESL72		0.15/0.06 A	72	42	30	24	12
12ESL100		0.34/0.12 A	100	58	42	33	17
12ESL144		0.40/0.14 A	144	84	60	48	24
12ESL216		0.41/0.14 A	216	117	83	67	33
12ESL250	120/347VAC	0.41/0.14 A	250	144	100	83	42
12ESL360		0.41/0.14 A	360	200	144	108	60
24ESL144		0.43/0.15 A	144	84	60	48	24
24ESL200		0.55/0.20 A	200	117	83	67	33
24ESL288		0.67/0.23 A	288	168	120	96	48
24ESL350		0.67/0.23 A	350	200	144	120	60
24ESL432		0.67/0.23 A	432	250	180	144	72
24ESL550		0.88/0.33 A	550	320	230	180	90
24ESL720		0.88/0.33 A	720	420	300	240	120

Note: Low wattage LED lamps provide extended time of emergency lighting without additional power.

Ordering information

Series	Capacity/cabinet[1]	Colour	Voltage	Options	# of heads	Head/wattage
06ESL= 6V	**36**= 36W (A) **72**= 72W (A) **108**= 108W (A) **180**= 180W (B)	**BK**= black **Blank**= factory white	**-2**= 277VAC input **Blank**= 120/347 VAC input	**A**= ammeter **CPS3**= constant power supply 3 Amps, 24V only[1] N **CT**= cab-tire **D**= time delay **LW**= twist-lock plug (120V)[2] **NEX**= NEXUS® system interface[3] **NEXP**= NEXUS®Pro IoT[3] **NEXRF**= wireless NEXUS® system interface[3] **P**= light activated test switch **RF3**= radio frequency interference filter, 347VAC N **RFI**= radio frequency interference filter, 120VAC N **T**= lamp disconnect **TB**= DC terminal block **TBAC**= AC terminal block **TBACDC**= AC/DC terminal block **U**= auto-diagnostics[3] **UN**= auto-diagnostics non-audible[3] **V**= voltmeter **ZCB**= zone control panel[4] N	**/0**= no heads **/1**= one head **/2**= two heads **/3**= three heads	**LA**= MR16 LED, 6V-4W **LB**= MR16 LED, 6V-5W **LG**= MR16 LED, 12V-4W **LI**= MR16 LED, 12V-5W **LJ**= MR16 LED, 12V-6W **LL**= MR16 LED, 24V-4W **LM**= MR16 LED, 24V-6W
12ESL= 12V	**36**= 36W (A) **72**= 72W (A) **100**= 100W (A) **144**= 144W (A) **216**= 216W (B) **250**= 250W (B) **360**= 360W (B)					
24ESL= 24V	**144**= 144W (A) **200**= 200W (B) **288**= 288W (B) **350**= 350W (C) **432**= 432W (C) **550**= 550W (C) **720**= 720W (C)					

[1]Cabinet size is not part of nomenclature

Example: 06ESL108U/2LL

[1]"C" Cabinet only. 24V, 144W-720W. / [2]120V is standard
[3]Not available with 6V-108W. Minimum lamp load required: 20% of unit capacity. Not all options available with the NEXUS® system. Please consult your sales representative.
[4]See zone control box in options section. B & C cabinet only.

BATTERY UNITS

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑐᓕᕆᔨᒃ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 31/01/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	Yvon Roy (1986) Inc.	**Shop Drawing no :** ELE- 010 **Referencing** 265619
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : LITHONIA LIGHTING + PRESISION PLUS

Descriptions / comments

Roadway lighting

Comments of Professionnal :

- Pole Finish to be Galvanized steel as per spec.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543 (WTS)
BY K.Speidel
DATE Jan. 31 2023

DILLON CONSULTING

Type	Manufacturer/Brand	Catalog Number
H	ABL-Lithonia Lighting	DSX1 LED P9 30K T2M MVOLT SPA PER DDBXD G1
H	ABL-Acuity Brands Controls	DLL127F 1.5 JU
	PRECISION PLUS	PPSSS530HAB

edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSX1 LED P9 30K T2M MVOLT SPA PER DDBXD G1 Note:	Type H



D-Series Size 1

Legacy LED Area Luminaire

Catalog Number

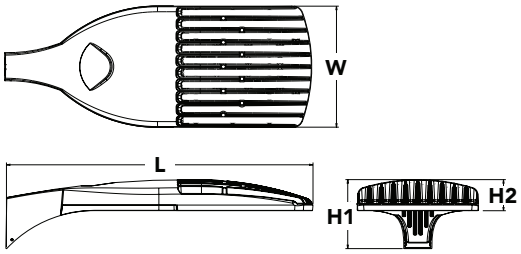
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	1.01 ft² (0.09 m²)
Length:	33" (83.8 cm)
Width:	13" (33.0 cm)
Height H1:	7-1/2" (19.0 cm)
Height H2:	3-1/2"
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

CONFIRM IF THE SPA MOUNTING IS ENOUGH "ARM" OR IF KMMA8 DDBXD ARM IS REQUIRED. IF KMMA8 DDBXD ARM IS REQUIRED, IT WILL BE ADDED TO THE PO.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD G1

DSX1 LED

Series

DSX1 LED

LEDs

Forward optics

P1, P4[1], P7[1], P2, P5[1], P8, P3, P6[1], P9[1]

Rotated optics

P10[2], P12[2], P11[2], P13[1,2]

Color temperature

30K	3000 K
40K	4000 K
50K	5000 K

Distribution

T1S	Type I short (Automotive)
T2S	Type II short
T2M	Type II medium
T3S	Type III short
T3M	Type III medium
T4M	Type IV medium
TFTM	Forward throw medium
T5VS	Type V very short[3]
T5S	Type V short[3]
T5M	Type V medium[3]
T5W	Type V wide[3]
BLC	Backlight control[4]
LCCO	Left corner cutoff[4]
RCCO	Right corner cutoff[4]

Voltage

MVOLT[5]

XVOLT (277V-480V)[6,7,8]

120[9]

208[9]

240[9]

277[9]

347[9]

480[9]

Mounting

Shipped included

SPA	Square pole mounting
RPA	Round pole mounting[10]
WBA	Wall bracket[3]
SPUMBA	Square pole universal mounting adaptor[11]
RPUMBA	Round pole universal mounting adaptor[9]

Shipped separately

KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish)[12]

Control options

Shipped installed

NLTAIR2	nLight AIR generation 2 enabled[13]
PIRHN	Network, high/low motion/ambient sensor[14]
PER	NEMA twist-lock receptacle only (controls ordered separate)[15]
PER5	Five-pin receptacle only (controls ordered separate)[15,16]
PER7	Seven-pin receptacle only (controls ordered separate)[15,16]
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]
DS	Dual switching[18,19,20]
PIR	High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc[20,21]
PIRH	High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc[20,21]
PIR1FC3V	High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[20,21]
PIRH1FC3V	Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[20,21]
FAO	Field adjustable output[20,22]

Other options

Shipped installed

HS	House-side shield[23]
SF	Single fuse (120, 277, 347V)[9]
DF	Double fuse (208, 240, 480V)[9]
L90	Left rotated optics[2]
R90	Right rotated optics[2]
HA	50°C ambient operations[1]
BAA	Buy America(n) Act Compliant

Shipped separately

BS	Bird spikes[24]
EGS	External glare shield

Finish *(required)*

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white

Generation *(required)*

G1	Generation 1

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSX1 LED P9 30K T2M MVOLT SPA PER DDBXD G1 Note:	Type H

Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [25]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [25]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [25]
DSHORT SBK U	Shorting cap [25]
DSX1HS 30C U G1	House-side shield for P1, P2, P3, P4 and P5 [23]
DSX1HS 40C U G1	House-side shield for P6 and P7 [23]
DSX1HS 60C U G1	House-side shield for P8, P9, P10, P11 and P12 [23]
PUMBA DDBXD U G1*	Square and round pole universal mounting bracket (specify finish) [26]
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) [12]
DSX1EGS (FINISH) U G1	External glare shield

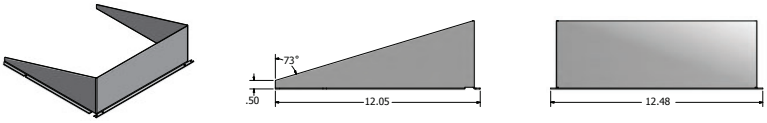
For more control options, visit DTL and ROAM online.

NOTES

1 HA not available with P4, P5, P6, P7, P9 and P13.
2 P10, P11, P12 or P13 and rotated optics (L90, R90) only available together.
3 Any Type 5 distribution with photocell, is not available with WBA.
4 Not available with HS.
5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
6 XVOLT only suitable for use with P3, P5, P6, P7, P9 and P13.
7 XVOLT works with any voltage between 277V and 480V.
8 XVOLT not available with fusing (SF or DF) and not available with PIR, PIRH, PIR1FC3V, PIRH1FC3V.
9 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF.
10 Suitable for mounting to round poles between 3.5" and 12" diameter.
11 Universal mounting brackets intended for retrofit on existing, pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8
12 Must order fixture with SPA option. KMA8 must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
13 Must be ordered with PIRHN. Sensor cover available only in dark bronze, black, white and natural aluminum colors.
14 Must be ordered with NLTAIR2. For more information on nLight Air 2 visit this link.
15 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting cap included.
16 If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming.
17 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
18 Provides 50/50fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH. Not available P1, P2, P3, P4 or P5.
19 Requires (2) separately switched circuits.
20 Reference Controls Options table on page 4.
21 Reference Motion Sensor default settings table on page 4 to see functionality.
22 Not available with other dimming controls options.
23 Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
24 Must be ordered with fixture for factory pre-drilling.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Control Option Table on page 4.
26 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

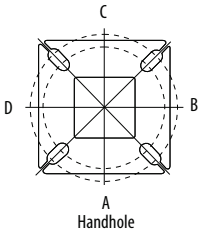
Options

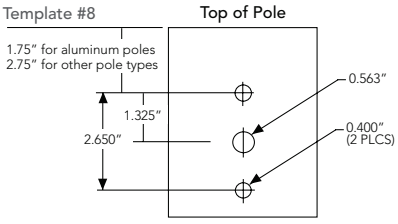
EGS - External Glare Shield



Drilling

HANDHOLE ORIENTATION





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 LED	1.013	2.025	1.945	3.038	2.850	3.749

	Drilling Template	Minimum Acceptable Outside Pole Dimension					
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"	3.5"	4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

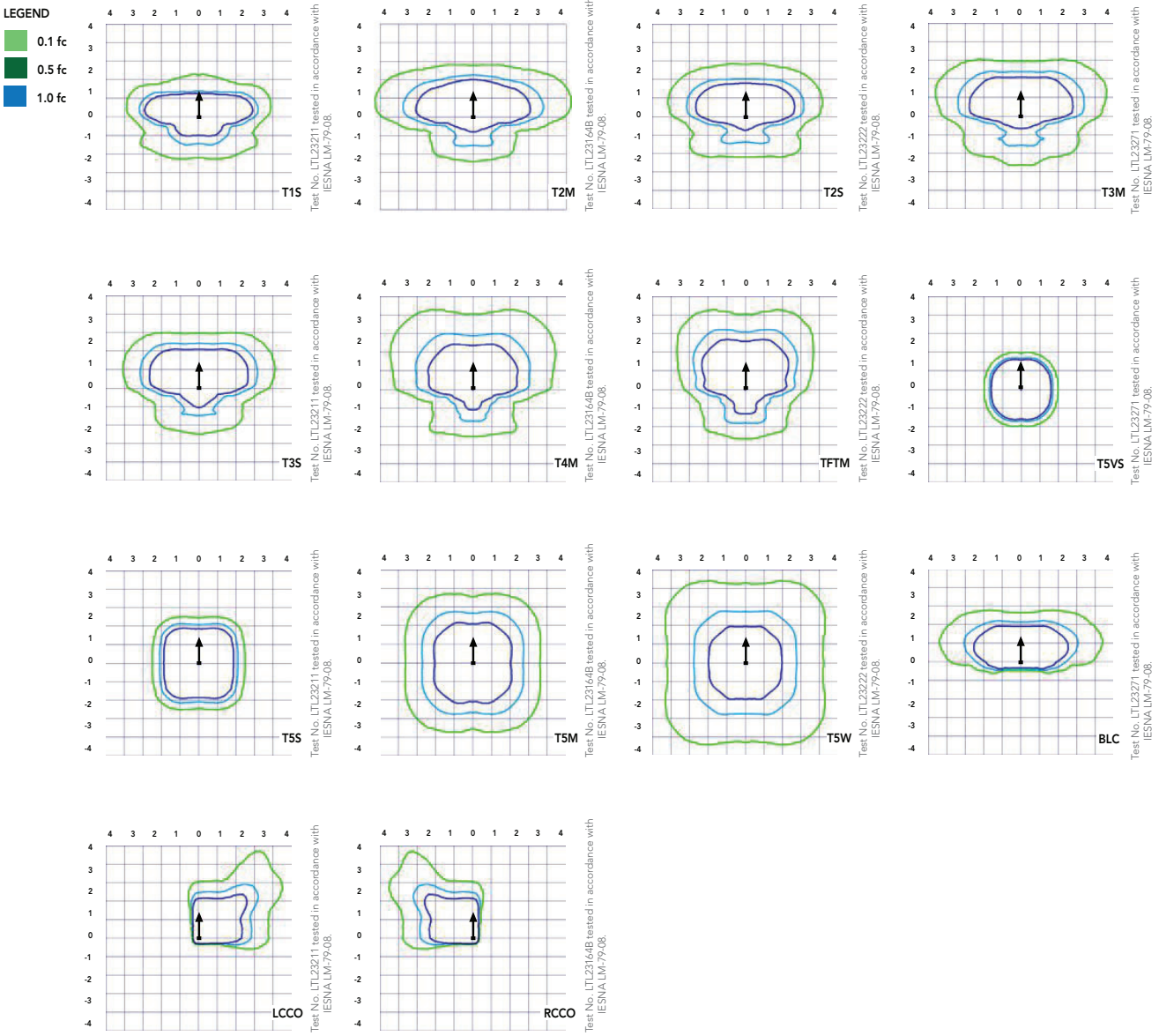
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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSX1 LED P9 30K T2M MVOLT SPA PER DDBXD G1 Note:	Type H

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.

Isofootcandle plots for the DSX1 LED P7 40K G1. Distances are in units of mounting height (25').



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Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	50°F	1.02
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min
*for use when motion sensor is used as dusk to dawn control.						

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	30	530	54	0.45	0.26	0.23	0.19	0.10	0.12
	P2	30	700	70	0.59	0.34	0.30	0.25	0.20	0.16
	P3	30	1050	102	0.86	0.50	0.44	0.38	0.30	0.22
	P4	30	1250	125	1.06	0.60	0.52	0.46	0.37	0.27
	P5	30	1400	138	1.16	0.67	0.58	0.51	0.40	0.29
	P6	40	1250	163	1.36	0.78	0.68	0.59	0.47	0.34
	P7	40	1400	183	1.53	0.88	0.76	0.66	0.53	0.38
	P8	60	1050	207	1.74	0.98	0.87	0.76	0.64	0.49
	P9	60	1250	241	2.01	1.16	1.01	0.89	0.70	0.51
Rotated Optics (Requires L90 or R90)	P10	60	530	106	0.90	0.52	0.47	0.43	0.33	0.27
	P11	60	700	137	1.15	0.67	0.60	0.53	0.42	0.32
	P12	60	1050	207	1.74	0.99	0.87	0.76	0.60	0.46
	P13	60	1250	231	1.93	1.12	0.97	0.86	0.67	0.49

Controls Options				
Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PER5 or PER7	Twist-lock photocell recepticle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclypse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08.

Forward Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30	530	P1	54W	T1S	6,457	2	0	2	120	6,956	2	0	2	129	7,044	2	0	2	130
				T2S	6,483	1	0	1	120	6,984	2	0	2	129	7,072	2	0	2	131
				T2M	6,450	2	0	2	119	6,948	2	0	2	129	7,036	2	0	2	130
				T3S	6,468	1	0	2	120	6,967	1	0	2	129	7,055	1	0	2	131
				T3M	6,279	2	0	2	116	6,764	2	0	2	125	6,849	2	0	2	127
				T4M	6,327	1	0	2	117	6,816	1	0	2	126	6,902	1	0	2	128
				TFTM	6,464	1	0	2	120	6,963	1	0	2	129	7,051	1	0	2	131
				T5VS	6,722	2	0	0	124	7,242	3	0	0	134	7,334	3	0	0	136
				T5S	6,728	2	0	1	125	7,248	2	0	1	134	7,340	2	0	1	136
				T5M	6,711	3	0	1	124	7,229	3	0	1	134	7,321	3	0	2	136
				T5W	6,667	3	0	2	123	7,182	3	0	2	133	7,273	3	0	2	135
				BLC	5,299	1	0	1	98	5,709	1	0	2	106	5,781	1	0	2	107
				LCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
				RCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
30	700	P2	70W	T1S	8,249	2	0	2	118	8,886	2	0	2	127	8,999	2	0	2	129
				T2S	8,282	2	0	2	118	8,923	2	0	2	127	9,035	2	0	2	129
				T2M	8,240	2	0	2	118	8,877	2	0	2	127	8,989	2	0	2	128
				T3S	8,262	2	0	2	118	8,901	2	0	2	127	9,013	2	0	2	129
				T3M	8,021	2	0	2	115	8,641	2	0	2	123	8,750	2	0	2	125
				T4M	8,083	2	0	2	115	8,708	2	0	2	124	8,818	2	0	2	126
				TFTM	8,257	2	0	2	118	8,896	2	0	2	127	9,008	2	0	2	129
				T5VS	8,588	3	0	0	123	9,252	3	0	0	132	9,369	3	0	0	134
				T5S	8,595	3	0	1	123	9,259	3	0	1	132	9,376	3	0	1	134
				T5M	8,573	3	0	2	122	9,236	3	0	2	132	9,353	3	0	2	134
				T5W	8,517	3	0	2	122	9,175	4	0	2	131	9,291	4	0	2	133
				BLC	6,770	1	0	2	97	7,293	1	0	2	104	7,386	1	0	2	106
				LCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79
				RCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79
30	1050	P3	102W	T1S	11,661	2	0	2	114	12,562	3	0	3	123	12,721	3	0	3	125
				T2S	11,708	2	0	2	115	12,612	2	0	2	124	12.772	2	0	2	125
				T2M	11,648	2	0	2	114	12,548	3	0	3	123	12.707	3	0	3	125
				T3S	11,679	2	0	2	115	12.582	2	0	2	123	12,741	2	0	2	125
				T3M	11,338	2	0	2	111	12.214	3	0	3	120	12,369	3	0	3	121
				T4M	11,426	2	0	3	112	12,309	2	0	3	121	12,465	2	0	3	122
				TFTM	11,673	2	0	2	114	12,575	2	0	3	123	12,734	2	0	3	125
				T5VS	12,140	3	0	1	119	13,078	3	0	1	128	13,244	3	0	1	130
				T5S	12,150	3	0	1	119	13,089	3	0	1	128	13,254	3	0	1	130
				T5M	12,119	4	0	2	119	13,056	4	0	2	128	13,221	4	0	2	130
				T5W	12,040	4	0	3	118	12,970	4	0	3	127	13,134	4	0	3	129
				BLC	9,570	1	0	2	94	10,310	1	0	2	101	10,440	1	0	2	102
				LCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
				RCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
30	1250	P4	125W	T1S	13,435	3	0	3	107	14,473	3	0	3	116	14,657	3	0	3	117
				T2S	13,489	2	0	2	108	14,532	3	0	3	116	14,716	3	0	3	118
				T2M	13,420	3	0	3	107	14,457	3	0	3	116	14,640	3	0	3	117
				T3S	13,457	2	0	2	108	14,496	2	0	2	116	14,680	2	0	2	117
				T3M	13,064	3	0	3	105	14,073	3	0	3	113	14,251	3	0	3	114
				T4M	13,165	2	0	3	105	14,182	2	0	3	113	14,362	2	0	3	115
				TFTM	13,449	2	0	3	108	14,488	2	0	3	116	14,672	2	0	3	117
				T5VS	13,987	4	0	1	112	15,068	4	0	1	121	15,259	4	0	1	122
				T5S	13,999	3	0	1	112	15,080	3	0	1	121	15,271	3	0	1	122
				T5M	13,963	4	0	2	112	15,042	4	0	2	120	15,233	4	0	2	122
				T5W	13,872	4	0	3	111	14,944	4	0	3	120	15,133	4	0	3	121
				BLC	11,027	1	0	2	88	11,879	1	0	2	95	12,029	1	0	2	96
				LCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72
				RCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72
30	1400	P5	138W	T1S	14,679	3	0	3	106	15,814	3	0	3	115	16,014	3	0	3	116
				T2S	14,739	3	0	3	107	15,878	3	0	3	115	16,079	3	0	3	117
				T2M	14,663	3	0	3	106	15,796	3	0	3	114	15,996	3	0	3	116
				T3S	14,703	2	0	3	107	15,839	3	0	3	115	16,039	3	0	3	116
				T3M	14,274	3	0	3	103	15,377	3	0	3	111	15,571	3	0	3	113
				T4M	14,384	2	0	3	104	15,496	3	0	3	112	15,692	3	0	3	114
				TFTM	14,695	2	0	3	106	15,830	3	0	3	115	16,030	3	0	3	116
				T5VS	15,283	4	0	1	111	16,464	4	0	1	119	16,672	4	0	1	121
				T5S	15,295	3	0	1	111	16,477	4	0	1	119	16,686	4	0	1	121
				T5M	15,257	4	0	2	111	16,435	4	0	2	119	16,644	4	0	2	121
				T5W	15,157	4	0	3	110	16,328	4	0	3	118	16,534	4	0	3	120
				BLC	12,048	1	0	2	87	12,979	1	0	2	94	13,143	1	0	2	95
				LCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71
				RCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DSX1 LED P9 30K T2M MVOLT SPA PER DDBXD G1 Note:	Type H

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
40	1250	**P6**	163W	T1S	17,654	3	0	3	108	19,018	3	0	3	117	19,259	3	0	3	118
				T2S	17,725	3	0	3	109	19,095	3	0	3	117	19,336	3	0	3	119
				T2M	17,634	3	0	3	108	18,997	3	0	3	117	19,237	3	0	3	118
				T3S	17,682	3	0	3	108	19,048	3	0	3	117	19,289	3	0	3	118
				T3M	17,166	3	0	3	105	18,492	3	0	3	113	18,726	3	0	3	115
				T4M	17,299	3	0	3	106	18,635	3	0	4	114	18,871	3	0	4	116
				TFTM	17,672	3	0	3	108	19,038	3	0	4	117	19,279	3	0	4	118
				T5VS	18,379	4	0	1	113	19,800	4	0	1	121	20,050	4	0	1	123
				T5S	18,394	4	0	2	113	19,816	4	0	2	122	20,066	4	0	2	123
				T5M	18,348	4	0	2	113	19,766	4	0	2	121	20,016	4	0	2	123
				T5W	18,228	5	0	3	112	19,636	5	0	3	120	19,885	5	0	3	122
				BLC	14,489	2	0	2	89	15,609	2	0	3	96	15,806	2	0	3	97
				LCCO	10,781	1	0	3	66	11,614	1	0	3	71	11,761	2	0	3	72
				RCCO	10,781	1	0	3	66	11,614	1	0	3	71	11,761	2	0	3	72
40	1400	**P7**	183W	T1S	19,227	3	0	3	105	20,712	3	0	3	113	20,975	3	0	3	115
				T2S	19,304	3	0	3	105	20,796	3	0	3	114	21,059	3	0	3	115
				T2M	19,205	3	0	3	105	20,689	3	0	3	113	20,951	3	0	3	114
				T3S	19,257	3	0	3	105	20,745	3	0	3	113	21,008	3	0	3	115
				T3M	18,695	3	0	3	102	20,140	3	0	3	110	20,395	3	0	4	111
				T4M	18,840	3	0	4	103	20,296	3	0	4	111	20,553	3	0	4	112
				TFTM	19,246	3	0	4	105	20,734	3	0	4	113	20,996	3	0	4	115
				T5VS	20,017	4	0	1	109	21,564	4	0	1	118	21,837	4	0	1	119
				T5S	20,033	4	0	2	109	21,581	4	0	2	118	21,854	4	0	2	119
				T5M	19,983	4	0	2	109	21,527	5	0	3	118	21,799	5	0	3	119
				T5W	19,852	5	0	3	108	21,386	5	0	3	117	21,656	5	0	3	118
				BLC	15,780	2	0	3	86	16,999	2	0	3	93	17,214	2	0	3	94
				LCCO	11,742	2	0	3	64	12,649	2	0	3	69	12,809	2	0	3	70
				RCCO	11,742	2	0	3	64	12,649	2	0	3	69	12,809	2	0	3	70
60	1050	**P8**	207W	T1S	22,490	3	0	3	109	24,228	3	0	3	117	24,535	3	0	3	119
				T2S	22,581	3	0	3	109	24,326	3	0	3	118	24,634	3	0	3	119
				T2M	22,465	3	0	4	109	24,201	3	0	4	117	24,507	3	0	4	119
				T3S	22,526	3	0	4	109	24,267	3	0	4	117	24,574	3	0	4	119
				T3M	21,869	3	0	4	106	23,558	3	0	4	114	23,857	3	0	4	115
				T4M	22,038	3	0	4	106	23,741	3	0	4	115	24,041	3	0	4	116
				TFTM	22,513	3	0	4	109	24,253	3	0	4	117	24,560	3	0	4	119
				T5VS	23,415	5	0	1	113	25,224	5	0	1	122	25,543	5	0	1	123
				T5S	23,434	4	0	2	113	25,244	4	0	2	122	25,564	4	0	2	123
				T5M	23,374	5	0	3	113	25,181	5	0	3	122	25,499	5	0	3	123
				T5W	23,221	5	0	4	112	25,016	5	0	4	121	25,332	5	0	4	122
				BLC	18,458	2	0	3	89	19,885	2	0	3	96	20,136	2	0	3	97
				LCCO	13,735	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
				RCCO	13,735	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
60	1250	**P9**	241W	T1S	25,575	3	0	3	106	27,551	3	0	3	114	27,900	3	0	3	116
				T2S	25,678	3	0	3	107	27,663	3	0	3	115	28,013	3	0	3	116
				T2M	25,547	3	0	4	106	27,521	3	0	4	114	27,869	3	0	4	116
				T3S	25,616	3	0	4	106	26,791	3	0	4	111	27,945	3	0	4	116
				T3M	24,868	3	0	4	103	27,597	3	0	4	115	27,129	3	0	4	113
				T4M	25,061	3	0	4	104	26,997	3	0	4	112	27,339	3	0	4	113
				TFTM	25,602	3	0	4	106	27,580	3	0	4	114	27,929	3	0	4	116
				T5VS	26,626	5	0	1	110	28,684	5	0	1	119	29,047	5	0	1	121
				T5S	26,648	4	0	2	111	28,707	5	0	2	119	29,070	5	0	2	121
				T5M	26,581	5	0	3	110	28,635	5	0	3	119	28,997	5	0	3	120
				T5W	26,406	5	0	4	110	28,447	5	0	4	118	28,807	5	0	4	120
				BLC	20,990	2	0	3	87	22,612	2	0	3	94	22,898	2	0	3	95
				LCCO	15,619	2	0	4	65	16,825	2	0	4	70	17,038	2	0	4	71
				RCCO	15,619	2	0	4	65	16,825	2	0	4	70	17,038	2	0	4	71

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Rotated Optics

LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
60	530	**P10**	106W	T1S	13,042	3	0	3	123	14,050	3	0	3	133	14,228	3	0	3	134
				T2S	13,200	3	0	3	125	14,220	3	0	3	134	14,400	3	0	3	136
				T2M	12,966	4	0	4	122	13,968	4	0	4	132	14,145	4	0	4	133
				T3S	13,193	4	0	4	124	14,212	4	0	4	134	14,392	4	0	4	136
				T3M	12,766	4	0	4	120	13,751	4	0	4	130	13,925	4	0	4	131
				T4M	12,944	4	0	4	122	13,945	4	0	4	132	14,121	4	0	4	133
				TFTM	13,279	4	0	4	125	14,305	4	0	4	135	14,486	4	0	4	137
				T5VS	13,372	3	0	1	126	14,405	4	0	1	136	14,588	4	0	1	138
				T5S	13,260	3	0	1	125	14,284	3	0	1	135	14,465	3	0	1	136
				T5M	13,256	4	0	2	125	14,281	4	0	2	135	14,462	4	0	2	136
				T5W	13,137	4	0	3	124	14,153	4	0	3	134	14,332	4	0	3	135
				BLC	10,906	3	0	3	103	11,749	3	0	3	111	11,898	3	0	3	112
				LCCO	7,789	1	0	3	73	8,391	1	0	3	79	8,497	1	0	3	80
				RCCO	7,779	4	0	4	73	8,380	4	0	4	79	8,486	4	0	4	80
60	700	**P11**	137W	T1S	16,556	3	0	3	121	17,835	3	0	3	130	18,061	4	0	4	132
				T2S	16,757	4	0	4	122	18,052	4	0	4	132	18,280	4	0	4	133
				T2M	16,460	4	0	4	120	17,732	4	0	4	129	17,956	4	0	4	131
				T3S	16,747	4	0	4	122	18,041	4	0	4	132	18,270	4	0	4	133
				T3M	16,204	4	0	4	118	17,456	4	0	4	127	17,677	4	0	4	129
				T4M	16,432	4	0	4	120	17,702	4	0	4	129	17,926	4	0	4	131
				TFTM	16,857	4	0	4	123	18,159	4	0	4	133	18,389	4	0	4	134
				T5VS	16,975	4	0	1	124	18,287	4	0	1	133	18,518	4	0	1	135
				T5S	16,832	4	0	1	123	18,133	4	0	2	132	18,362	4	0	2	134
				T5M	16,828	4	0	2	123	18,128	4	0	2	132	18,358	4	0	2	134
				T5W	16,677	4	0	3	122	17,966	5	0	3	131	18,193	5	0	3	133
				BLC	13,845	3	0	3	101	14,915	3	0	3	109	15,103	3	0	3	110
				LCCO	9,888	1	0	3	72	10,652	2	0	3	78	10,787	2	0	3	79
				RCCO	9,875	4	0	4	72	10,638	4	0	4	78	10,773	4	0	4	79
60	1050	**P12**	207W	T1S	22,996	4	0	4	111	24,773	4	0	4	120	25,087	4	0	4	121
				T2S	23,276	4	0	4	112	25,074	4	0	4	121	25,392	4	0	4	123
				T2M	22,863	4	0	4	110	24,630	5	0	5	119	24,941	5	0	5	120
				T3S	23,262	4	0	4	112	25,060	4	0	4	121	25,377	4	0	4	123
				T3M	22,508	4	0	4	109	24,247	5	0	5	121	24,554	5	0	5	119
				T4M	22,824	5	0	5	110	24,588	5	0	5	119	24,899	5	0	5	120
				TFTM	23,414	5	0	5	113	25,223	5	0	5	122	25,543	5	0	5	123
				T5VS	23,579	5	0	1	114	25,401	5	0	1	123	25,722	5	0	1	124
				T5S	23,380	4	0	2	113	25,187	4	0	2	122	25,506	4	0	2	123
				T5M	23,374	5	0	3	113	25,181	5	0	3	122	25,499	5	0	3	123
				T5W	23,165	5	0	4	112	24,955	5	0	4	121	25,271	5	0	4	122
				BLC	19,231	4	0	4	93	20,717	4	0	4	100	20,979	4	0	4	101
				LCCO	13,734	2	0	3	66	14,796	2	0	4	71	14,983	2	0	4	72
				RCCO	13,716	4	0	4	66	14,776	4	0	4	71	14,963	4	0	4	72
60	1250	**P13**	231W	T1S	25,400	4	0	4	110	27,363	4	0	4	118	27,709	4	0	4	120
				T2S	25,709	4	0	4	111	27,695	4	0	4	120	28,046	4	0	4	121
				T2M	25,253	5	0	5	109	27,204	5	0	5	118	27,548	5	0	5	119
				T3S	25,694	5	0	5	111	27,679	5	0	5	120	28,029	5	0	5	121
				T3M	24,861	5	0	5	108	26,782	5	0	5	116	27,121	5	0	5	117
				T4M	25,210	5	0	5	109	27,158	5	0	5	118	27,502	5	0	5	119
				TFTM	25,861	5	0	5	112	27,860	5	0	5	121	28,212	5	0	5	122
				T5VS	26,043	5	0	1	113	28,056	5	0	1	121	28,411	5	0	1	123
				T5S	25,824	4	0	2	112	27,819	5	0	2	120	28,172	5	0	2	122
				T5M	25,818	5	0	3	112	27,813	5	0	3	120	28,165	5	0	3	122
				T5W	25,586	5	0	4	111	27,563	5	0	4	119	27,912	5	0	4	121
				BLC	21,241	4	0	4	92	22,882	4	0	4	99	23,172	4	0	4	100
				LCCO	15,170	2	0	4	66	16,342	2	0	4	71	16,549	2	0	4	72
				RCCO	15,150	5	0	5	66	16,321	5	0	5	71	16,527	5	0	5	72

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FEATURES & SPECIFICATIONS

INTENDED USE
The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION
Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.01 ft^2) for optimized pole wind loading.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 3000 K, 4000 K and 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL
Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS
The DSX1 LED area luminaire has a number of control options. DSX Size 1, comes standard with 0-10V dimming drivers. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programing and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS
The DSX1 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaries can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclypse. Additional information about nLight Air can be found here.

INSTALLATION
Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern (template #8). NEMA photocontrol receptacle are also available.

LISTINGS
UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40ºC minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN ACT
Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT regulations. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DLL127F 1.5 JU Note:	Type H

Catalog Number: | Date: | Project:

OVERVIEW

With a design life of 20+ years and superior in-rush current and surge-protection features, the DLL Elite support the extended life and low maintenance benefits associated with LED fixtures.

FEATURES

APPLICATIONS

- LED lighting fixtures that require dusk to dawn control
- High inrush current fixtures
- Designed to last as long as your LED lighting system, 20+ years
- LED inrush protection with TRIAC assisted relay
- Extreme surge protection of 1280J/40kA utility or 2120J/40kA UL listed
- Double thick enclosure and lens with additional UV inhibitor
- High temp base plastic tested to 140°C
- Long life capacitors
- Full wave rectified power supply
- Dual zener diodes for long life
- Solid brass contact blades
- Double sided, thru hole plated .062" FR4 circuit board
- Conformal coated printed circuit board
- Sealed packaging for extended storage

SPECIFICATIONS

REGULATORY LISTINGS

- ANSI C136.10
- ROHS compliant
- UL listed to U.S. and Canadian safety standards
- Surge rated in excess of ANSI C136.10 to 20kV/10kA

OPERATING CHARACTERISTICS

- Operating Levels: Turn-on at 1.5 FC and turn-off at 2.25 FC (On:Off ratio of 1:1.5)
- Operating temperature: -40C to 70C
- Voltage 120 to 480 VAC, 60Hz
- Load rating: 1000 watts, 1800 VA ballast
  - UL Load Rating: 1000VA
- Average power consumption: <0.5 watts @ 120V

Warranty

Ten-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Note: Actual performance may differ as a result of end-user environment and application.
Specifications subject to change without notice

DTL DARK TO LIGHT

DLL Elite
Electronic Locking Type Photocontrol

Standard



Low Profile



DLL STANDARD COLORS		
	Non-UL	UL
120-277V	Green	Blue
347V	Green	Green
480V	Yellow	Yellow

IMPORTANT

FINAL QUANTITY TO BE CONFIRMED BY ELECTRIC CONTRACTOR

ORDERING INFORMATION

DLL PHOTOCONTROL							Example: DLL127 1.5 J50
Series & Voltage	**Failure Mode**	**Turn-On Level (fc)**	**Housing**	**Filter**	**Certification**	**Cover Color**	**Pkg. Qty.**
DLL127 120-277V	[blank] Fail On	1.5 ANSI Standard	[blank] Standard height	[blank] Silicon Sensor	[blank] Standard	[blank] See standard colors table above	JU 1 Unit
DLL347 347V[1]	F Fail Off		LP Low Profile[2]	IR IR filtered silicon sensor	CUL cULus listed[3]	BK Black[4]	J12 12 Units
DLL480 480V[1]						BR Brown[4]	J50 50 Units
						GR Green[4]	
						GY Gray[4]	
						BL Blue[4]	
						YL Yellow[4]	

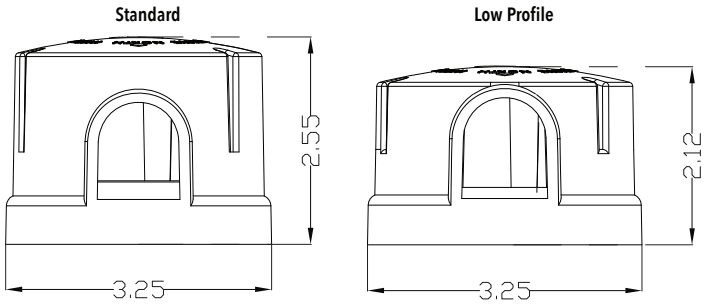
NOTES

1. Only available with CUL certification option.
2. Not available with DLL347, DLL480, or CUL certification.
3. Color substitutions not allowed for cULus models.
4. Non-standard custom colors are non-stock items. Available in J12 and J50 only. Consult customer service.

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: DLL127F 1.5 JU Note:	Type H

DIMENSIONS



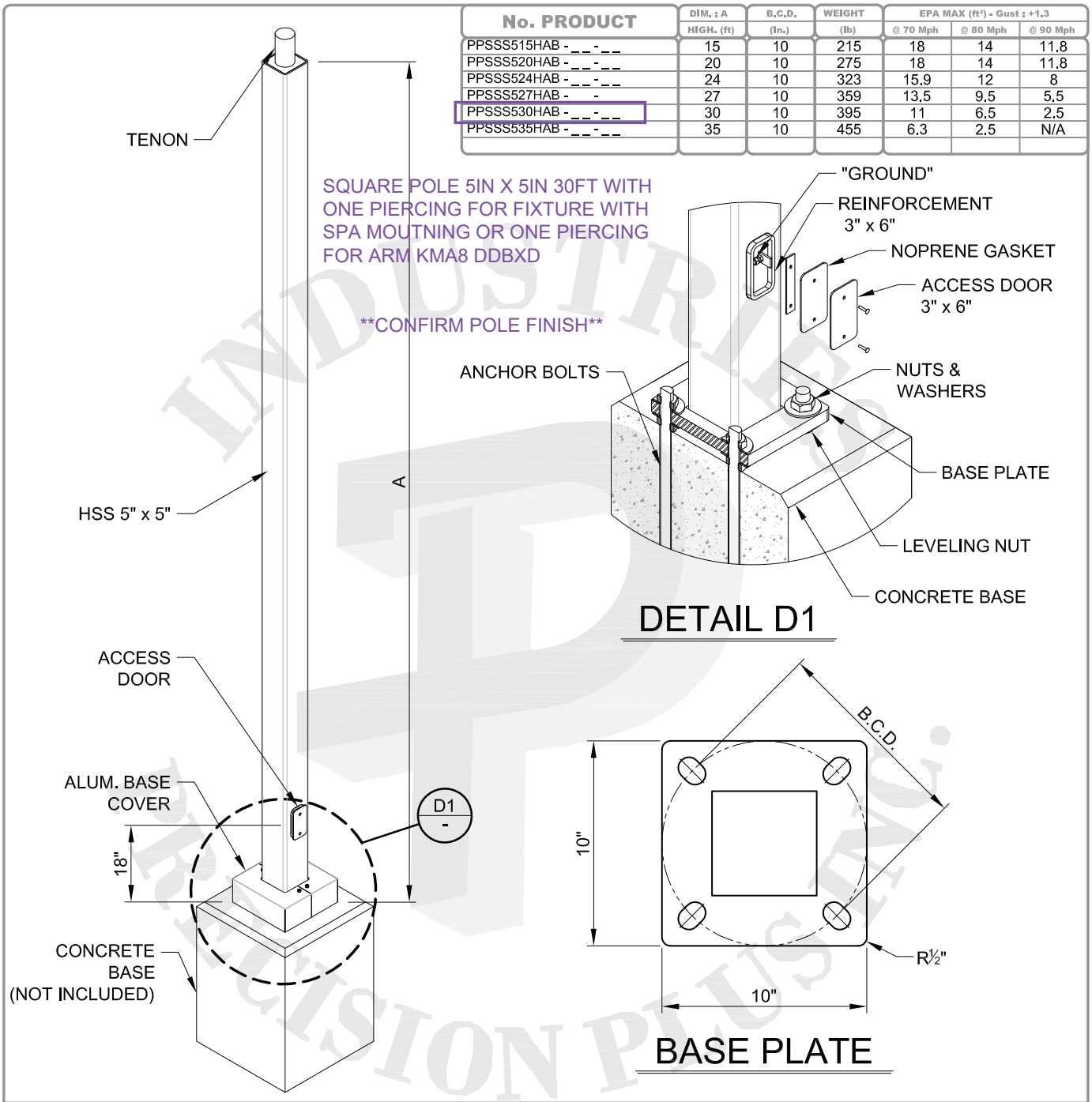
STOCKED MODEL NUMBERS

Model #	Description	Pkg. Qty.
DLL127 1.5	120-277V Fail- On (non-UL)	J50
DLL127 1.5 BL	120-277V Fail- On (non-UL) Blue	J50
DLL127 1.5 GY	120-277V Fail- On (non-UL) Gray	J50
DLL127 1.5 BK	120-277V Fail- On (non-UL) Black	J50
DLL127F 1.5	120-277V Fail- Off (non-UL)	J50
DLL127 1.5 LP	120-277V Fail- On (non-UL) Low Profile	J50
DLL127 1.5 IR	120-277V Fail-On (non-UL) IR Filter	J50
DLL127 1.5 IR BK	120-277V Fail-On (non-UL) IR Filter Black	J50
DLL127 1.5 IR BL	120-277V Fail-On (non-UL) IR Filter Blue	J50
DLL127F 1.5 CUL	120-277V Fail- Off	J50
DLL127 1.5 CUL	120-277V Fail- On	J50
DLL347F 1.5 CUL	347V Fail- Off	J50
DLL347 1.5 CUL	347V Fail- On	J50
DLL480F 1.5 CUL	480V Fail- Off	J50
DLL480 1.5 CUL	480V Fail- On	J50

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edp	Project 22-48097-6 IQALUIT WASTE TRANSFER STATION Submitted By ECLAIRAGE DIMENSION PLUS INC	Catalog Number: PPSSS530HAB Note: Drawing includes piercing, aluminium base cover, achor bolts, washers, nuts and template	Type

No. PRODUCT	DIM. : A HIGH. (ft)	B.C.D. (In.)	WEIGHT (lb)	EPA MAX (ft²) - Gust : +1.3 @ 70 Mph	@ 80 Mph	@ 90 Mph
PPSSS515HAB - _ _ - _ _	15	10	215	18	14	11.8
PPSSS520HAB - _ _ - _ _	20	10	275	18	14	11.8
PPSSS524HAB - _ _ - _ _	24	10	323	15.9	12	8
PPSSS527HAB - -	27	10	359	13.5	9.5	5.5
PPSSS530HAB - _ _ - _ _	30	10	395	11	6.5	2.5
PPSSS535HAB - _ _ - _ _	35	10	455	6.3	2.5	N/A



Lamp Post Steel Straight Square 5" x 5" - HD

INDUSTRIES PRECISION PLUS INC.
1565, JEAN LACHAINE, SAINTE-CATHERINE, QC,
PHONE SF : (877) 635-8685
PHONE:(450) 635-8685
FAX. (450) 635-8287
EMAIL : info@iprecisionplus.com

INCLUDED			FINISH
• 1 TENON OR PIERCING • 1 ALUMINIUM BASE COVER	• 4 GALVANIZED ANCHOR BOLTS (1" Ø x 33") • 8 WASHERS	• 8 NUTS • 1 TEMPLATE	- JET BLASTING SP10 - COATED BASE - ELECTROSTATIC POWDER PAINT

# SERIE	FIXTURE MFG.	MATERIAL	
PPSSS-5H	-	STEEL 44 PSI - HSS	
PROJECT	CONTRACTOR	SPEC	FIXTURE
-	-	-	-
DISTRIBUTOR	TYPE	COLOR	QUANTITY / TENON / PIERCING
-	-	-	-

OUR WELDS MEET CSA STANDARDS W59.1 & W47.1

WWW.INDUSTRIESPRECISIONPLUS.COM

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES INC
NAME: Sandra Rousseau
DATE: Nov 10, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 011 **Referencing** 260534
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Napco - Columbia - Thomas & Betts

Descriptions / comments

Napco (PVC) -- ungerground between building
Columbia i-- nside main building
Thomas & Betts - fitting

Comments of Professionnal :

- No Electrical Comments.

stamp approval :

SHOP DRAWING REVIEW

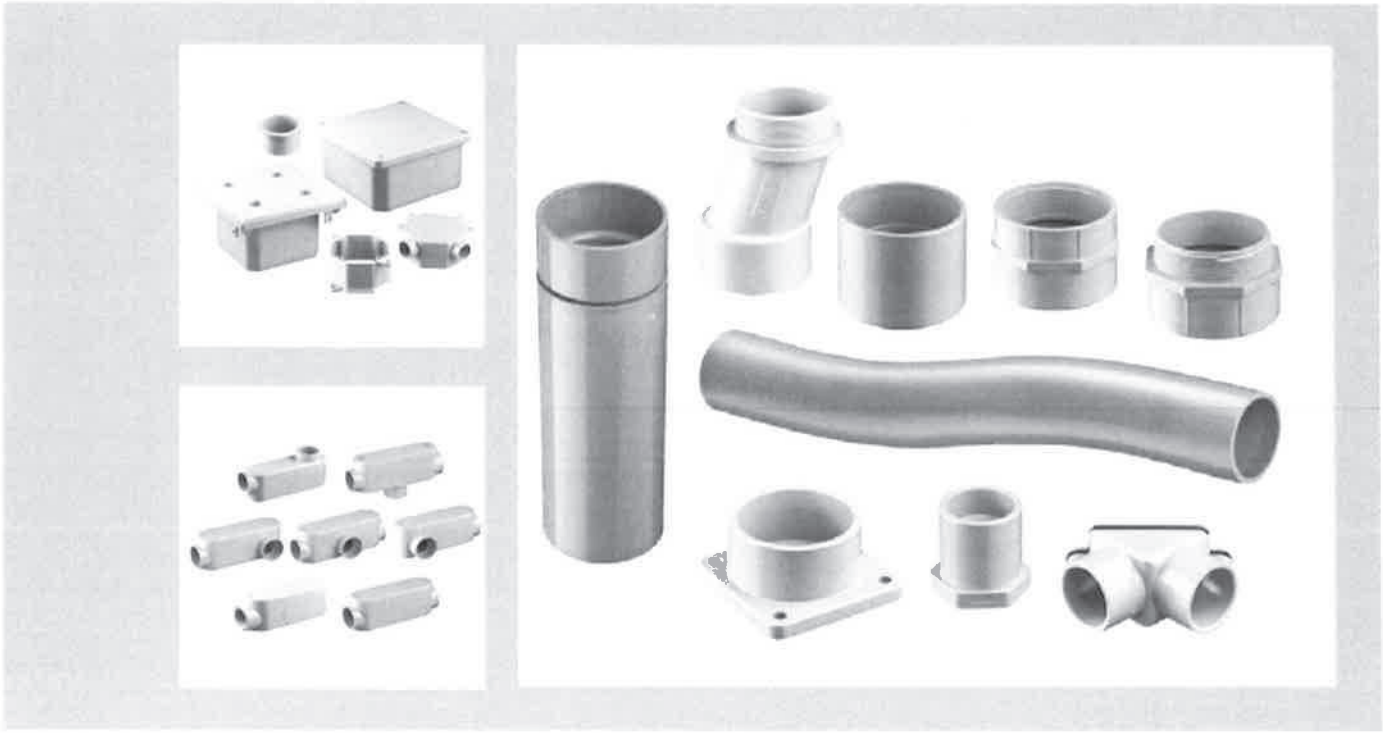
THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Nov. 14, 2022

DILLON CONSULTING

Rigid PVC Conduit Fittings



C22.2 No. 85 Fittings

UL 50, 514B, 514C, 514D, 651

Zone 1: Distributing points in Ontario west of Gananoque and east of Thunder Bay.
Zone 2: Distributing points in the Maritime Provinces, Newfoundland, Quebec and points east of Gananoque.
Zone 3: Distributing points in Thunder Bay, Ontario and west to Manitoba, Saskatchewan and Alberta.
Zone 4: British Columbia.

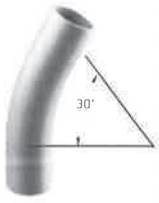
NAPCO
ROYAL PIPE & FITTINGS

Rigid PVC Conduit Fittings

Description (Fittings)	Product Code	UPC Code	Size (in)	Carton Quantity	Zone 1 & 2 $/100	Zone 3 & 4 $/100
Coupling						
	REC10	45950	½	150	$241.25	$269.65
	REC15	45960	¾	100	$316.10	$350.85
	REC20	45970	1	50	$427.00	$476.15
	REC25	45980	1¼	50	$556.10	$620.60
	REC30	45990	1½	25	$758.70	$843.85
	REC35	46000	2	40	$1,054.15	$1,165.10
	REC40	46010	2½	20	$2,158.60	$2,397.30
	REC45	46020	3	30	$2,775.25	$3,090.05
	REC50	46030	3½	20	$3,643.65	$4,051.35
	REC55	46060	4	20	$3,895.20	$4,330.00
	REC60	46080	5	10	$10,619.85	$11,801.70
	REC65	46090	6	5	$12,187.50	$13,544.90
	REC70	77887	8	2	$22,062.90	$24,489.85
Terminal Adapter						
	RTA10	45730	½	200	$278.70	$312.25
	RTA15	45740	¾	150	$476.15	$528.95
	RTA20	45750	1	100	$522.55	$580.60
	RTA25	45760	1¼	50	$556.10	$620.60
	RTA30	45770	1½	30	$1,008.95	$1,113.50
	RTA35	45780	2	50	$975.45	$1,082.50
	RTA40	45790	2½	25	$2,628.20	$2,918.50
	RTA45	45800	3	50	$3,124.90	$3,473.30
	RTA50	45810	3½	30	$6,084.75	$6,758.25
	RTA55	45820	4	30	$5,928.60	$6,590.50
	RTA60	45830	5	12	$13,062.30	$14,516.35
	RTA65	45840	6	10	$14,973.10	$16,637.50
Female Adapter						
	RFA10	44990	½	150	$330.35	$366.45
	RFA15	45000	¾	100	$532.90	$597.45
	RFA20	45010	1	50	$683.80	$758.70
	RFA25	45020	1¼	30	$807.65	$895.45
	RFA30	45030	1½	25	$1,048.95	$1,163.75
	RFA35	45040	2	30	$1,481.20	$1,645.05
	RFA40	45050	2½	20	$2,628.20	$2,918.50
	RFA45	45060	3	25	$3,775.20	$4,195.80
	RFA50	45070	3½	20	$6,084.75	$6,758.25
	RFA55	45080	4	15	$5,928.60	$6,590.50
	RFA60	45090	5	10	$13,062.30	$14,516.35
	RFA65	45100	6	6	$14,973.10	$16,637.50
O'ring Expansion Joint						
	REJ10	44870	½	25	$4,083.55	$4,532.60
	REJ15	44880	¾	25	$3,970.00	$4,417.70
	REJ20	44890	1	40	$4,302.90	$4,782.85
	REJ25	44900	1¼	20	$5,193.15	$5,769.90
	REJ30	44910	1½	20	$5,508.00	$6,119.55
	REJ35	44920	2	10	$7,119.50	$7,909.15
	REJ40	44930	2½	9	$13,957.70	$15,511.10
	REJ45	44940	3	9	$10,551.50	$11,729.45
	REJ50	44950	3½	5	$39,890.00	$44,321.90
	REJ55	44960	4	5	$47,163.05	$52,403.90
	REJ60	44963	5	1	$76,806.05	$85,333.15
	REJ65	44966	6	1	$98,567.00	$109,515.80

All Prices are Per 100 Unless Otherwise Indicated

Rigid PVC Conduit Fittings

Description (Fittings)	Product Code	UPC Code	Size (in)	Carton Quantity	Zone 1 $/100	Zone 2 $/100	Zone 3 $/100	Zone 4 $/100
90° Elbow - Bell End								
	REE1090	46120	½	35	$727.65	$765.15	$752.25	$792.40
	REE1590	46150	¾	50	$838.65	$881.25	$871.50	$916.60
	REE2090	46180	1	25	$1,291.50	$1,356.05	$1,343.80	$1,413.15
	REE2590	46210	1¼	20	$1,815.35	$1,910.80	$1,891.50	$1,988.90
	REE3090	46240	1½	15	$2,572.70	$2,708.20	$2,679.10	$2,817.85
	REE3590	46270	2	10	$3,820.40	$4,020.35	$3,975.40	$4,178.65
	REE4090	46330	2½	200	$8,359.40	$8,796.80	$8,699.30	$9,152.10
	REE4590	46360	3	100	$13,722.90	$14,442.85	$14,275.25	$15,028.75
	REE5090	46390	3½	50	$18,801.15	$19,789.55	$19,559.15	$20,592.50
	REE5590	46420	4	50	$22,348.05	$23,523.40	$23,253.30	$24,472.95
	REE6090	46440	5	25	$82,897.10	$87,262.00	$86,248.10	$90,789.50
	REE6590	46460	6	25	$133,835.40	$140,873.55	$139,243.65	$146,574.85
	REE7090	96519	8	25	$276,643.05	$276,643.05	$288,345.35	$288,345.35
45° Elbow - Bell End								
	REE1045	46110	½	70	$783.15	$825.75	$814.30	$858.10
	REE1545	46140	¾	50	$899.30	$944.45	$932.35	$984.75
	REE2045	46170	1	50	$1,397.35	$1,468.30	$1,450.90	$1,530.00
	REE2545	46200	1¼	30	$1,967.60	$2,070.80	$2,048.60	$2,156.85
	REE3045	46230	1½	15	$2,636.00	$2,773.95	$2,739.90	$2,882.35
	REE3545	46280	2	10	$4,128.75	$4,344.20	$4,296.75	$4,517.00
	REE4045	46320	2½	10	$8,359.40	$8,796.80	$8,699.30	$9,152.10
	REE4545	46350	3	1	$14,090.60	$14,829.90	$14,657.50	$15,426.75
	REE5045	46380	3½	1	$18,801.15	$19,789.55	$19,559.15	$20,592.50
	REE5545	46410	4	1	$22,939.00	$24,146.65	$23,865.60	$25,124.15
	REE6045	46430	5	1	$82,897.10	$87,262.00	$86,248.10	$90,789.50
	REE6545	46450	6	1	$133,835.40	$140,873.55	$139,243.65	$146,574.85
	REE7045	96520	8	1	$276,643.05	$276,643.05	$288,345.35	$288,345.35
30° Elbow - Plain End								
	REE1030PE	46100	½	50	$783.15	$825.75	$814.30	$858.10
	REE1530PE	46130	¾	35	$899.30	$944.45	$932.35	$984.75
	REE2030PE	46160	1	50	$1,397.35	$1,468.30	$1,450.90	$1,530.00
	REE2530PE	46190	1¼	30	$1,967.60	$2,070.80	$2,048.60	$2,156.85
	REE3030PE	46220	1½	50	$2,636.00	$2,773.95	$2,739.90	$2,882.35
	REE3530PE	46274	2	30	$4,128.75	$4,344.20	$4,296.75	$4,517.00
	REE4030PE	46310	2½	10	$8,359.40	$8,796.80	$8,699.30	$9,152.10
	REE4530PE	46340	3	10	$14,090.60	$14,829.90	$14,657.50	$15,426.75
	REE5030PE	46375	3½	1	$18,801.15	$19,789.55	$19,559.15	$20,592.50
	REE5530PE	46400	4	1	$22,939.00	$24,146.65	$23,865.60	$25,124.15
	REE6030PE	46425	5	1	$82,897.10	$87,262.00	$86,248.10	$90,789.50
	REE6530PE	46442	6	1	$133,835.40	$140,873.55	$139,243.65	$146,574.85
	REE7030PE	96521	8	1	$276,643.05	$276,643.05	$288,345.35	$288,345.35

Utilities 90° - Elbow Bell End			Size	Radius				
	REE2-24	46501	2	24	30	$28,405.65	$29,899.75	$29,549.90	$31,103.05
	REE2-36	46502	2	36	30	$28,640.50	$30,144.90	$29,795.70	$31,367.10
	REE3-24	46503	3	24	25	$22,598.35	$23,784.10	$23,504.00	$24,746.80
	REE3-36	46504	3	36	25	$36,050.20	$37,948.20	$37,509.15	$39,478.55
	REE4-36	46465	4	36	25	$49,757.60	$52,375.55	$51,772.30	$54,491.45
	REE4-48	46505	4	48	25	$57,006.20	$60,006.00	$59,311.60	$62,434.90
	REE5-36	46506	5	36	25	$82,897.10	$87,262.00	$86,248.10	$90,789.50
	REE6-36	46507	6	36	25	$133,835.40	$140,873.55	$139,243.65	$146,574.85

All Prices are Per 100 Unless Otherwise Indicated

NAPCO, a Westlake company
131 Regalcrest Court, Woodbridge, ON L4L 8P3
Tel: 905.856.7550 ■ Fax: 905.856.4367

TECHNICAL SPECIFICATION

PVC Schedule 40 Rigid Conduit

SCOPE

This specification covers the requirements for Rigid PVC (polyvinyl chloride) Schedule 40 Conduit in trade sizes ½" – 8". This pipe is certified to the Canadian Standards Association (CSA) standard C22.2 No. 211.2 and Underwriters Laboratories (UL) Standard 651 (8" is not UL certified).

MATERIALS

The pipe is manufactured from virgin PVC compound.

MARKING

Pipe markings are as specified in CSA C22.2 No. 211.2 and UL 651.

PIPE

This product conforms to the FT-4 Vertical Flame Test requirement according to CSA C22.2 No. 211.2 and No. 211.0, has a rating under UL 651 for 90° C wire (excluding 8") and can be used either above-ground or underground.

TEST REQUIREMENTS

Quality testing is as per NAPCO's Quality Control program and in accordance with CSA C22.2 No. 211.2 and UL 651.

PIPE DIMENSIONS

Part Number	Nominal Size in, (mm)	Outside Diameter (O.D.), in	Wall Thickness (t), in	Pipe Length including Bell (L), ft
RC0050	½ (16)	0.836–0.844	0.109-0.122	
RC0075	¾ (21)	1.046-1.054	0.113-0.127	
RC0100	1 (27)	1.310-1.320	0.133-0.149	
RC0125	1¼ (35)	1.655-1.665	0.140-0.157	
RC0150	1½ (41)	1.895-1.905	0.145-0.162	
RC0200	2 (53)	2.370-2.380	0.154-0.172	
RC0250	2 ½ (63)	2.870-2.880	0.203-0.227	10 or 20
RC0300	3 (78)	3.495-3.505	0.216-0.242	
RC0350	3 ½ (91)	3.995-4.005	0.226-0.253	
RC0400	4 (103)	4.495-4.505	0.237-0.265	
RC0500	5 (129)	5.560-5.570	0.258-0.289	
RC0600	6 (155)	6.620-6.630	0.280-0.314	
RC0800	8 (200)	8.568 – 8.676	0.322 – 0.361	



Ecovoc Solvent Cement & Privoc Primer

Canadian National Price List
List No: E-ECOVOC-PLV11
Effective: September 1, 2020
Replaces: January 6, 2020
All Prices are Taxes Extra

Description	Product Code	UPC Code	Size	Carton Quantity	Carton Weight (lbs)	ZONE 1 & 2	ZONE 3 & 4
Ecovoc - Rigid PVC Conduit, Duct & ENT Solvent Cement							
	RVOC250*	54790	250ml	24	18.0	$16.80	$19.55
	RVOC475*	54795	475ml	12	17.0	$26.40	$32.60
	RVOC950*	54797	950ml	12	32.5	$33.60	$39.15
	RVOC4L	54799	4L	4	41.0	$124.80	$150.00

*C/W Screw Cap & Dauber

Privoc - PVC & CPVC Primer							
	RVOCPR250*	54800	250ml	24	18.0	$16.80	$19.55
	RVOCPR475*	54802	475ml	12	17.0	$26.40	$32.60
	RVOCPR950*	54804	950ml	12	32.5	$33.60	$39.15
	RVOCPR4L	54806	4L	4	41.0	$124.80	$150.00

*C/W Screw Cap & Dauber

Zone 1: Distributing points in Ontario west of Gananoque and east of Thunder Bay.
Zone 2: Distributing points in the Maritime Provinces, Newfoundland, Quebec and points east of Gananoque.
Zone 3: Distributing points in Thunder Bay, Ontario and west to Manitoba, Saskatchewan and Alberta.
Zone 4: British Columbia.

Standards & Certifications

Ecovoc solvent cement is CSA certified for use with electrical products. NAPCO Ecovoc should always be used with NAPCO products to ensure a strong and reliable solvent weld joint.

Note: NAPCO Solvent Cements packaged in metal containers have a shelf-life of 24 months from the date of manufacture. NAPCO Primers and Cleaners packaged in metal containers have a shelf-life of 36 months from the date of manufacture.

NAPCO
ROYAL PIPE & FITTINGS

Electrical Metallic Tubing (EMT) and True Color™ EMT

FEATURES & SPECIFICATIONS

Manufactured for Long Life

Columbia-MBF® EMT is precision manufactured from high grade mild strip steel for exceptional durability and long-lasting life. Columbia-MBF EMT is hot galvanized using a patented inline Flo-Coat™ process. This process combines zinc, a conversion coating, and a clear organic polymer topcoat to form a triple layer of protection against corrosion and abrasion.

E-Z Pull™ EMT combines strength with ductility, providing easy bending, cutting and joining while resisting flattening, kinking and splitting. Available in sizes 1/2 (16) - 4 (103).

Coatings

Columbia-MBF's EMT (Electrical Metallic Tubing) has a special low friction ID coating called E-Z Pull that greatly improves the slip properties between conduit and wire. With E-Z Pull EMT, wire pulls through the EMT smoothly and easily, making installation easier and faster.

EMI Shielding

Columbia-MBF EMT is very effective in reducing electromagnetic field levels for encased power distribution circuits, shielding computers and other sensitive electronic equipment from the effects of electromagnetic interference.

For more information on EMT shielding, visit www.columbia-mbf.ca to obtain the **GEMI** (**G**rounding and **E**lectro-**M**agnetic **I**nterference) software analysis program.

Codes & Standards Compliance

Columbia-MBF EMT is Certified to Canadian Standards Association C22.2 No.83.1. As a metal raceway, EMT functions as an equipment bonding conductor when installed in compliance with the Canadian Electrical Code (CEC), including Section 10 *Grounding and Bonding* and Section 12-1400 *Electrical Metallic Tubing*. Documentation is available in the GEMI (Grounding and Electro-Magnetic Interference) analysis software and related research studies found at the www.columbia-mbf.ca website.

Installation of EMT shall be in accordance with the Canadian Electrical Code and the CSA Certification information.

Specification Data

To specify Columbia-MBF EMT, include the following: Electrical Metallic Tubing shall be equal to that manufactured by Columbia-MBF Inc. EMT shall be hot galvanized steel O.D. with an organic corrosion resistant I.D. coating, and shall be CSA Certified to Standard C22.2 No. 83.1 and manufactured in accordance with ANSI C80.3.

Electrical Metallic Tubing (EMT) and True Color™ EMT

Certified to Canadian Standards Association Safety Standard CSA C22.2 No.83.1
Manufactured in accordance with ANSI C80.3

Trade Size	Metric Designator	Outside Diameter[1]		Nominal Wall Thickness[2]		Approximate Weight Per 100 Ft. (30.5M)		Standard Bundle Quantity		True Color** Bundle Qty.	
		in	mm	in	mm	lb	kg	ft	m	ft	m
1/2	16	0.706	17.93	0.042	1.07	30	13.6	2500	762.0	3500	1066.8
3/4	21	0.922	23.42	0.049	1.24	46	20.9	2000	609.6	2500	762.0
1	27	1.163	29.54	0.057	1.45	67	30.4	1000	304.8	1500*	457.2
1-1/4	35	1.510	38.35	0.065	1.65	101	45.8	500	152.4	2000	609.6
1-1/2	41	1.740	44.20	0.065	1.65	116	52.6	500	152.4	1500	457.2
2	53	2.197	55.80	0.065	1.65	148	67.1	510	155.4	1200	365.7
2-1/2	63	2.875	73.03	0.072	1.83	216	98.0	250	76.2	610	185.9
3	78	3.500	88.90	0.072	1.83	263	119.3	200	61.0	510	155.4
3-1/2	91	4.000	101.60	0.083	2.11	349	158.3	100	30.5	370	112.7
4	103	4.500	114.30	0.083	2.11	393	178.3	100	30.5	300	91.5

[1]Outside diameter tolerances: +/- .005 in. (.13mm) for size 1/2 (16mm) through 2 (53mm);
+/- .010 in. (.25mm) for size 2-1/2 (63);
+/- .015 in. (.38mm) for size 3 (78);
+/- .020 in. (.50mm) for size 3-1/2 (91) and 4 (103).
NOTE: Length = 10 ft. (3.05m) with a tolerance of +/- .25 in. (6mm)
[2]For information only. Not a requirement of the CSA standard.

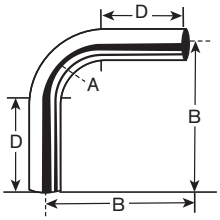
*True Color Blue size 1 (27) bundle quantity: 3000 ft / (914.4m)
** True Color Size 2 (53)- 4 (103) are available through special order

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

Electrical Metallic Tubing (EMT) Elbows

EMT 90° Elbows

Certified to Canadian Standards Association Safety Standard CSA C22.2 No.83.1
Manufactured in accordance with ANSI C80.3

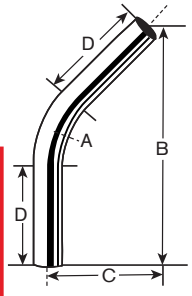


Trade Size	Metric Designator	Radius (A)[1]		Offset (B)[2]		Straight (D)[1]		Approximate Weight Per 100 Pieces		Standard Package
		in	mm	in	mm	in	mm	lb	kg	
1/2	16	4	102	5 7/8	149	1 1/2	38	25	11.3	25
3/4	21	4 1/2	114	7	178	1 1/2	38	46	20.9	50
1	27	5 3/4	146	8 3/4	222	1 7/8	48	84	38.1	25
1 1/4	35	7 1/4	184	10 1/8	257	2	51	144	65.3	20
1 1/2	41	8 1/4	210	11 3/4	298	2	51	193	87.5	15
2	53	9 1/2	241	14	356	2	51	296	134.3	10
2 1/2	63	10 1/2	267	16 1/4	413	3	76	504	228.6	80
3	78	13	330	18 3/4	476	3 1/8	79	701	318.0	50
3 1/2	91	15	381	21 1/4	540	3 1/4	83	1047	474.9	50
4	103	16	406	23 3/8	594	3 3/8	86	1310	594.2	36

[1]Minimum requirement as per CSA Standard
[2]For information only, not a requirement as per CSA Standard
Sizes 2-1/2 (63) and larger shipped in palletized cartons or bulk.
Also available in the following Degrees (60°, 45°, 30°, 22-1/2°, 15° & 11-1/4°)

EMT 45° Elbows

Certified to Canadian Standards Association Safety Standard CSA C22.2 No.83.1
Manufactured in accordance with ANSI C80.3



Trade Size	Metric Designator	Radius (A)[1]		Offset (B)[2]		Offset (C)[2]		Straight (D)[1]		Approximate Weight Per 100 Pieces		Standard Package
		in	mm	in	mm	in	mm	in	mm	lb	kg	
1/2	16	4	102	6 1/8	156	2 1/2	64	1 1/2	38	18	8.2	25
3/4	21	4 1/2	114	7 3/8	187	3 1/8	79	1 1/2	38	33	15.0	50
1	27	5 3/4	146	8 3/4	222	3 5/8	92	1 7/8	48	56	25.4	25
1 1/4	35	7 1/4	184	10 1/8	257	4 1/8	105	2	51	97	44.0	20
1 1/2	41	8 1/4	210	13 1/8	333	5 3/8	137	2	51	145	65.8	15
2	53	9 1/2	241	13 1/8	333	5 1/2	140	2	51	185	83.9	10
2 1/2	63	10 1/2	267	17 1/2	445	7 1/4	184	3	76	360	163.3	80
3	78	13	330	17 1/2	445	7 1/4	184	3 1/8	79	438	198.7	50
3 1/2	91	15	381	26 1/8	664	10 7/8	276	3 1/4	83	873	396.0	50
4	103	16	406	26 1/4	667	10 7/8	276	3 3/8	86	983	445.9	36

[1]Minimum requirement as per CSA Standard
[2]For information only, not a requirement as per CSA Standard
Sizes 2-1/2 (63) and larger shipped in palletized cartons or bulk.
Also available in the following Degrees (90°, 60°, 30°, 22-1/2°, 15° & 11-1/4°)

Technical Specifications

- All E.M.T. compression connectors and couplings are concrete-tight.
- Models from 2-1/2 to 4 " are also suitable for rigid and IMC conduit.



CI5604 (-IT) / CI5632 (-IT)

Steel Locknut
IT: with insulated throat.



CI5704 / CI5732



CI5804 (-IT) / CI5832 (-IT)

Zinc Die Cast Locknut
IT: with insulated throat.



CI5904 / CI5932

Cat. No. (Regular, Zinc Alloy)	Cat. No. (Insulated, Zinc Alloy)	Cat. No. (Regular, Steel)	Cat. No. (Insulated, Steel)	Trade Size
E.M.T. Compression Connectors				
CI5804	CI5804-IT	CI5604	CI5604-IT	1/2
CI5806	CI5806-IT	CI5606	CI5606-IT	3/4
CI5808	CI5808-IT	CI5608	CI5608-IT	1
CI5810	CI5810-IT	CI5610	CI5610-IT	1-1/4
CI5812	CI5812-IT	CI5612	CI5612-IT	1-1/2
CI5816	CI5816-IT	CI5616	CI5616-IT	2
CI5820	CI5820-IT	CI5620	CI5620-IT	2-1/2
CI5824	CI5824-IT	CI5624	CI5624-IT	3
CI5832	CI5832-IT	CI5632	CI5632-IT	4

Cat. No. (Zinc Alloy)	Cat. No. (Steel)	Trade Size
E.M.T. Compression Couplings		
CI5904	CI5704	1/2
CI5906	CI5706	3/4
CI5908	CI5708	1
CI5910	CI5710	1-1/4
CI5912	CI5712	1-1/2
CI5916	CI5716	2
CI5920	CI5720	2-1/2
CI5924	CI5724	3
CI5932	CI5732	4



CI7538

Cat. No.	Max. Flex. Conduit Dia.	Hole Size
One Hole Double Sided Strap (Galvanized Steel)		
CI7538*	1.05	3/16"

*Any combination of 3/8", 1/2" and 3/4" EMT, rigid conduit, flexible conduit or teck cables

Technical Specifications



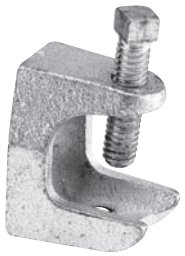
CI1304 / CI1316



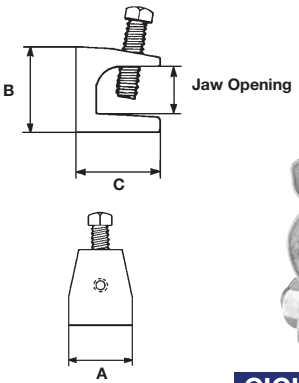
CI1404 / CI1416



CI1520 / CI1532



500-SC / 503-SC





CICH-0404 / CICH-3232

Cat. No.	Trade Size	Max. E.M.T. Dia.	Hole Size
One Hole E.M.T. Straps (Galvanized Steel)			
CI1304	1/2	0.71	1/4
CI1306	3/4	0.92	1/4
CI1308	1	1.16	5/16
CI1310	1-1/4	1.51	7/16
CI1312	1-1/2	1.74	7/16
CI1316	2	2.20	9/16
Two Hole E.M.T. Straps (Galvanized Steel)			
CI1404	1/2	0.71	3/16
CI1406	3/4	0.92	3/16
CI1408	1	1.16	3/16
CI1410	1-1/4	1.51	1/4
CI1412	1-1/2	1.74	1/4
CI1416	2	2.20	3/8
CI1520	2-1/2	2.88	3/8
CI1524	3	3.50	3/8
CI1528	3-1/2	4.00	1/2
CI1532	4	4.50	1/2

Cat. No.	Trade Size	Jaw Opening	Tap Base and Back	Dimensions A	Dimensions B	Dimensions C
Beam Clamps (Malleable Iron)						
500-SC	1/4NC	15/16	1/4-20	1	1-1/4	1-7/16
501	5/16NC	7/8	5/16-18	1-9/16	1-9/16	1-11/16
502	3/8NC	1	3/8-16	2	1-7/8	1-3/4
503-SC	1/2NC	1	1/2-13	2-1/2	2-3/8	2-3/8

Cat. No.	Trade Size E.M.T.	Trade Size Rigid
Conduit Hangers-Steel (with nuts & bolts)		
CICH-0404	1/2	1/2
CICH-0606	3/4	3/4
CICH-0808	1	1
CICH-0010	1-1/4	—
CICH-1012	1-1/2	1-1/4
CICH-1200	—	1-1/2
CICH-1616	2	2
CICH-2020	2-1/2	2-1/2
CICH-2424	3	3
CICH-2828	3-1/2	3-1/2
CICH-3232 *	4	4

* Not CSA certified

Cat. No.	Trade Size E.M.T.	Trade Size Rigid
Conduit Hangers-Steel (without nuts & bolts)		
6H0	1/2	3/8&1/2
6H1	3/4	3/4
6H2	1	1
6H2-1/2	1-1/4	—
6H3-SC	1-1/2	1-1/4
6H4	—	1-1/2
6H5	2	2
6H6	2-1/2	2-1/2
6H7	3	3
6H8	3-1/2	3-1/2
6H9 *	4	4

* Not CSA certified



CI5204 / CI5206

Zinc Die Cast Locknut

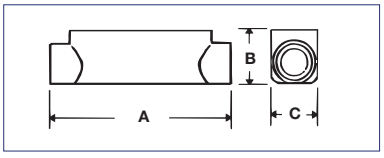


CI5304 / CI5306
CI5308-G / CI5310-G

-G: with gasket.

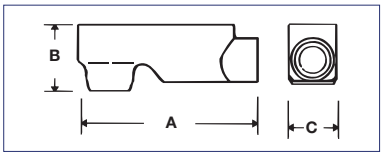


CICA-1/2 / CICA-2





CILBA-1/2 / CILBA-2
CILBSA-2-1/2 /
CILBSA-4



Technical Specifications

Cat. No.	Trade Size	Dimensions A	B	C
Pull Elbows, E.M.T. to Box (Zinc Alloy)				
CI5204	1/2	1-5/16	1-1/8	—
CI5206	3/4	1-1/2	1-1/4	—
Pull Elbows, E.M.T. to E.M.T. (Zinc Alloy)				
CI5304	1/2	1-5/16	15/16	—
CI5306	3/4	1-5/8	1-1/4	—
CI5308-G	1	1-15/16	1-5/8	—
CI5310-G	1-1/4	2-1/4	2	—
E.M.T. Conduit Fittings - "C" Type (Cast Aluminum)				
CICA-1/2	1/2	4-7/8	1-3/8	1-3/8
CICA-3/4	3/4	5-9/16	1-1/2	1-7/16
CICA-1	1	6-1/2	1-3/4	1-3/4
CICA-1-1/4	1-1/4	8-5/8	1-15/16	2-1/2
CICA-1-1/2	1-1/2	8-5/8	2-11/16	2-1/2
CICA-2	2	10-15/16	3	3-3/16
E.M.T. Conduit Fittings - "LB" Type (Cast Aluminum)				
CILBA-1/2	1/2	4-5/16	1-1/2	1-3/8
CILBA-3/4	3/4	4-15/16	1-7/8	1-9/16
CILBA-1	1	6-1/16	2-1/16	1-13/16
CILBA-1-1/4	1-1/4	7-7/8	2-15/16	2-1/2
CILBA-1-1/2	1-1/2	7-7/8	3-1/16	2-1/2
CILBA-2	2	10	3-3/4	3-3/16
CILBSA-2-1/2	2-1/2	13	7-3/8	4-1/4
CILBSA-3	3	13	7-3/8	4-1/4
CILBSA-3-1/2	3-1/2	15-1/4	9	5-1/4
CILBSA-4	4	15-1/4	9	5-1/4

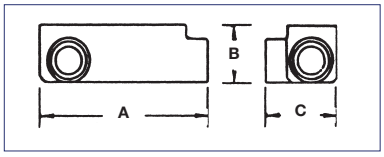
Covers and gaskets are included with all aluminum conduit fittings. Types CICA and CILBA are also suitable for use with rigid conduit.

Technical Specifications



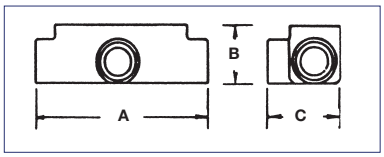
CILRL-1/2 / CILRL-2

Combined LL/LR
Left and right
application





CITA-1/2 / CITA-2







CIBC-1/2 / CIBC-2

CIG-1/2 / CIG-2



CIEFSA-1/2 / CIEFSA-4

Cat. No.	Trade Size	Dimensions A	B	C
E.M.T. Conduit Fittings - "LRL" Type (Cast Aluminum)				
CILRL-1/2	1/2	4-7/16	1-11/16	2-1/8
CILRL-3/4	3/4	5-3/16	1-7/8	2-1/4
CILRL-1	1	6	2-3/16	2-1/2
CILRL-1-1/4	1-1/4	7-15/16	2-3/4	3-1/2
CILRL-1-1/2	1-1/2	7-15/16	3-1/4	3-1/2
CILRL-2	2	10-3/16	3-11/16	4-1/8
E.M.T. Conduit Fittings - "T" Type (Cast Aluminum)				
CITA-1/2	1/2	4-7/8	1-3/8	2-1/16
CITA-3/4	3/4	5-9/16	1-3/4	2-1/8
CITA-1	1	6-1/2	2	2-1/2
CITA-1-1/4	1-1/4	8-11/16	2-5/8	3-1/2
CITA-1-1/2	1-1/2	8-11/16	3	3-9/16
CITA-2	2	10-7/8	3-1/4	4-3/16

Covers and gaskets are included with all aluminum conduit fittings.
Types CILRL and CITA are also suitable for use with rigid conduit.

Cat. No.	Trade Size
Blank Covers for Aluminum Conduit Fittings (Stamped Aluminum)	
CIBC-1/2	1/2
CIBC-3/4	3/4
CIBC-1	1
CIBC-1-1/4	1-1/4
CIBC-2	2

For 1-1/2, use CIBC-1-1/4

Cat. No.	Trade Size
Gaskets for Aluminum Conduit Fittings (Neoprene)	
CIG-1/2	1/2
CIG-3/4	3/4
CIG-1	1
CIG-1-1/4	1-1/4
CIG-2	2

For 1-1/2, use CIG-1-1/4

Cat. No.	Trade Size
Service Entrance Heads (Cast Aluminum)	
CIEFSA-1/2	1/2
CIEFSA-3/4	3/4
CIEFSA-1	1
CIEFSA-1-1/4	1-1/4
CIEFSA-1-1/2	1-1/2
CIEFSA-2	2
CIEFSA-2-1/2	2-1/2
CIEFSA-3	3
CIEFSA-3-1/2	3-1/2
CIEFSA-4	4

Consult page 10 for technical specifications

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
NAME: Sandra Rousseau
DATE: Nov 10, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 012 **Referencing** 260521
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : AFC - Texcan - Southwire

Descriptions / comments

Wire and cable

Comments of Professionnal :

- No Electrical Comments

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Nov. 14, 2022

DILLON CONSULTING

RW90 600V Insulated Wire

Description Single copper conductor with low temperature moisture resisting Exelene* cross-linked polyethylene insulation. CSA Spec C22.2 No. 38-95



Temperature -40°C to +90°C

Jackets Standard colours are available.
Standard Black #6 and larger is sunlight resistant and marked "Outdoor"; coloured insulation is NOT.

Application For open wiring and raceways (except cable troughs and ventilated flexible cableway) in dry or wet locations.
For exposed wiring where exposed to weather with sunlight resistant insulation.
Approved for use with ceiling fixtures.

Size	Conductor Strand	Insulation Thickness		Approximate Diameter		Approx Weight Copper Cond		Ampacity (30C Ambient) Copper (amps) Free Air	Ampacity (30C Ambient) Copper (amps) Conduit #
		mm	inches	mm	inches	kg/km	lbs/ft		
14	Solid	0.76	.030	3.2	0.13	24	16	20	15
12	Solid	0.76	.030	3.6	0.14	35	24	25	20
10	Solid	0.76	.030	4.2	0.17	54	36	40	30
14	7	0.76	.030	3.4	0.13	25	17	20	15
12	7	0.76	.030	3.9	0.15	37	25	25	20
10	7	0.76	.030	4.4	0.18	57	38	40	30
8	7	1.14	.045	6.0	0.24	92	62	70	45
6	7	1.14	.045	7.0	0.28	141	95	100	65
4	7	1.14	.045	8.2	0.32	217	146	135	85
3	7	1.14	.045	8.9	0.35	269	181	155	105
2	7	1.14	.045	9.7	0.38	336	226	180	120
1	19	1.40	.055	11.2	0.44	424	285	210	140
1/0	19	1.40	.055	12.2	0.48	528	355	245	155
2/0	19	1.40	.055	13.3	0.52	659	443	285	185**
3/0	19	1.40	.055	14.6	0.57	823	553	330	210
4/0	19	1.40	.055	16.0	0.63	1028	691	385	235
250	37	1.65	.065	17.7	0.70	1220	820	425	265
300	37	1.65	.065	19.1	0.75	1454	977	480	295
350	37	1.65	.065	20.3	0.80	1691	1136	530	325
400	37	1.65	.065	21.5	0.85	1924	1293	575	345
500	37	1.65	.065	23.6	0.93	2387	1604	660	395
600	61	2.03	.080	26.4	1.04	2883	1937	740	455
750	61	2.03	.080	29.0	1.14	3582	2407	845	500
1000	61	2.03	.080	32.8	1.30	4438	3184	1000	585

Non-jacketed RW-90 (XLPE) cables are not suitable for installation in vaults and switch rooms under the conditions of C.E. Code Part 1 Rule 12-2204. Suitable flame retardant jacketed cables are available on request.

**For 3-wire 120/240 and 120/208V residential services or sub-services, the allowable ampacity for sizes #6, #2 and #4/0 AWG aluminum shall be 60, 100 and 200 amperes respectively. #2/0 AWG copper shall be 200 amperes. In these cases, the 5% adjustment per C.E. Code Rule 8-106(1) cannot be applied.

Based on not more than 3 copper or aluminum conductors in raceway or cable. For 1 conductor per underground duct installation ampacities.

AFC Cable Systems™

AC90 Armoured Cable

CSA AC90 Armoured Cable for Canada

Columbia-MBF™ Inc., proudly introduces AFC Cable Systems AC90 and AC90 ISO aluminum armoured cable to the Canadian Market.

AC90 construction provides mechanical protection of electrical conductors, allowing for bending around corners and fishing through walls of existing construction.

AC90 solid copper conductor configurations consist of 2, 3, or 4 solid copper conductors in sizes 14, 12, or 10 AWG. AC90 stranded copper conductors consist of 3 stranded copper conductor configurations in sizes 8 or 6 AWG.

AC90 ISO configurations consist of 2 solid copper conductors in sizes 14 or 12 AWG. In addition the AC90 ISO cable assembly includes a separate green insulated solid copper grounding conductor.

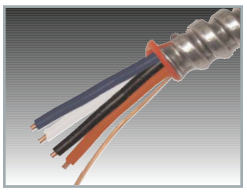
Both the AC90, and AC90 ISO conductors are insulated RW90 XLPE, and are protected inside an interlocking aluminum armour.

AFC Cable Systems Inc. originated in 1926. AFC is a leading developer, manufacturer, and supplier of electrical distribution products, and has since been providing safe electrical products that allow for fast and easy installation for a variety of applications.

AFC's cable products include AC armoured cable, flexible metallic & nonmetallic liquidtight conduit and fittings. AFC products are used in the construction and modernization of commercial, retail, institutional and industrial construction.



CSA AC90 Armoured Cable – Technical Specifications

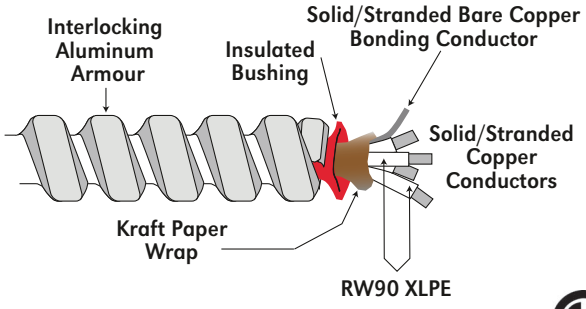


Specification Description

Specification	CSA AC90 Cable
Armour	Interlocking Aluminum Strip
Conductors	Solid/Stranded Copper
Conductor Insulation	RW90 XLPE
Cable Assembly	Kraft Paper Wrap
Dry Temperature Rating	90°C (High) / -40°C (Low)
Bonding Conductor	Solid/Stranded Bare Copper
Maximum Voltage Rating	600V

References & Ratings

- CSA C22.1 Canadian Electrical Code (CEC) Part I
- CSA C22.2 No.0 Canadian Electrical Code (CEC) Part II – General Requirements
- CSA C22.2 No.38 Thermoset Insulated Wires and Cables
- CSA C22.2 No.51 Armoured Cables
- CSA C22.2 No.0.3 Test Methods for Electrical Wires and Cables
- CSA C22.2 No.2556 Wire and Cable Test Methods



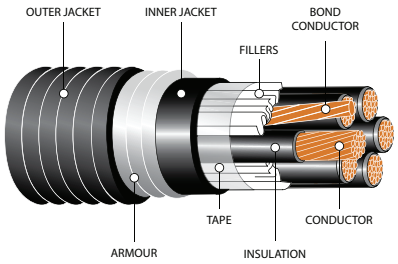
File # LL84516

Product Codes, Trade Sizes, Conductors, Packaging & Weights

Product Code			Trade Size & Colour	Solid Bonding Conductor AWG	Nominal Armour OD		Approximate Weight	
75m Reel	150m Reel	300m Reel			(mm)	(in.)	(kg/km)	(lbs/mft)
2201-75-00	2201-35-00	2201-80-00	14-2 Solid (Black & White)	14	11.88	0.468	128	86
2202-75-00	2202-35-00	2202-80-00	14-3 Solid (Black, Red, & White)	14	12.45	0.490	157	106
2203-75-00	2203-35-00	2203-80-00	14-4 Solid (Black, Red, Blue, & White)	14	14.22	0.560	195	131
2204-75-00	2204-35-00	2204-80-00	12-2 Solid (Black & White)	14	12.73	0.501	159	107
2205-75-00	2205-35-00	2205-80-00	12-3 Solid (Black, Red, & White)	14	13.28	0.523	200	134
2206-75-00	2206-35-00	2206-80-00	12-4 Solid (Black, Red, Blue, & White)	14	15.39	0.606	253	170
2207-75-00	2207-35-00	2207-80-00	10-2 Solid (Black & White)	12	13.80	0.543	245	165
2208-75-00	2208-35-00	2208-80-00	10-3 Solid (Black, Red, & White)	12	14.48	0.570	306	206
2209-75-00	2209-35-00	2209-80-00	10-4 Solid (Black, Red, Blue, & White)	12	16.87	0.664	383	257
Stranded Conductors								
2216-75-00	2216-35-00	2216-80-00	8-3 Stranded (Black, Red, & White)	10	18.34	0.722	460	309
2220-75-00	2220-35-00	2220-80-00	6-3 Stranded (Black, Red, & White)	8*	22.10	0.870	659	443

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.
* 8 AWG Stranded Bonding Conductor

INSIDE OFFICE AND SCALE HOUSE



Multiconductor 14 AWG 600V

XLPE/PVC/AIA/PVC

SPECIFICATIONS

- CSA FT1 & FT4
- CSA C22.2 No. 131 & 174
- IEEE 383 & 1202 (70,000 BTU/hr) Flame Test
- ICEA T-30-520 (70,000 BTU/hr) Vertical Flame Test

*Refer to CE Code for details

HL

CONSTRUCTION

Conductor: Bare copper Class B compressed stranded

Insulation: Cross-Linked Polyethylene (XLPE) Type RW90

Ground (Bonding) Conductor: Uninsulated stranded bare copper conductor

Inner Jacket: Flame-retardant and moisture resistant Polyvinyl Chloride (PVC)

Armour: Aluminum Interlocked Armour (AIA)

Outer Jacket: Low-temperature, moisture and sunlight resistant Polyvinyl Chloride (PVC), black

Options: Galvanized Steel Interlocked Armour (GSIA)
Other coloured outer jacket and constructions available upon request

14 AWG

Part Number	No. of Cond.	AWG Size		Insulation Thickness (in.)	Approximate Diameter (Over)				Copper Content		Net Weight w/ Armour		Amp. (30°C Ambient)	Recommended Connector*	
		Cond.	Bond Wire		Insul. (in.)	Inner Jacket (in.)	Armour (in.)	Outer Jacket (in.)	LB/ MFT	KG/ KM	LB/ MFT	KG/ KM		TMC2	TMC2X
05001-01-010	**2**	**14**	14	0.030	0.130	0.360	0.580	0.670	39	58	195	290	25.0	1/1A	1/1A
05001-02-010	**3**	**14**	14	0.030	0.130	0.380	0.600	0.690	52	78	226	336	25.0	1/1A	1/1A
05001-03-010	**4**	**14**	14	0.030	0.130	0.420	0.640	0.720	68	101	256	381	25.0	1/1A	1/1A
05001-04-010	**5**	**14**	14	0.030	0.130	0.460	0.680	0.760	81	121	290	432	20.0	2/2A	2/2A
05001-05-010	**6**	**14**	14	0.030	0.130	0.500	0.720	0.800	95	142	316	471	20.0	2/2A	2/2A
05001-06-010	**7**	**14**	14	0.030	0.130	0.520	0.740	0.820	104	155	338	503	17.5	2/2A	2/2A
05001-07-010	**8**	**14**	14	0.030	0.130	0.570	0.790	0.870	117	174	373	555	17.5	2/2A	2/2A
05001-09-010	**10**	**14**	14	0.030	0.130	0.660	0.880	0.960	149	222	451	671	17.5	3/3A	3/3A
05001-11-010	**12**	**14**	14	0.030	0.130	0.680	0.900	0.990	176	262	511	761	17.5	3/3A	3/3A
05001-14-010	**15**	**14**	14	0.030	0.130	0.740	0.960	1.040	217	323	586	872	17.5	3/3A	3/3A
05001-19-010	**20**	**14**	14	0.030	0.130	0.910	1.130	1.210	285	424	789	1174	17.5	4/4A	4/4A
05001-24-010	**25**	**14**	14	0.030	0.130	1.000	1.220	1.300	337	502	958	1426	15.0	4/4A	4/4A
05001-29-010	**30**	**14**	14	0.030	0.130	1.060	1.280	1.360	402	599	1015	1511	15.0	5/5A	5/5A
05001-31-010	**40**	**14**	14	0.030	0.130	1.180	1.400	1.480	531	791	1234	1837	15.0	5/5A	5/5A
05001-33-010	**50**	**14**	14	0.030	0.130	1.300	1.520	1.600	661	984	1463	2178	12.5	6/6A	6/6A

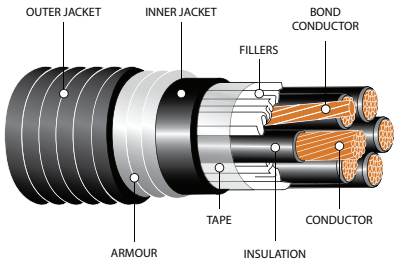
Note: All dimensions are nominal and are subject to normal manufacturing tolerance.
Specifications are subject to change without prior notice.

** See pages 30 & 31 for corresponding connector.*

For control

Multiconductor 12 AWG 600V

XLPE/PVC/AIA/PVC



SPECIFICATIONS

- CSA FT1 & FT4
- CSA C22.2 No. 131 & 174
- IEEE 383 & 1202 (70,000 BTU/hr) Flame Test
- ICEA T-30-520 (70,000 BTU/hr) Vertical Flame Test

*Refer to CE Code for details

HL

CONSTRUCTION

Conductor: Bare copper Class B compressed stranded

Insulation: Cross-Linked Polyethylene (XLPE) Type RW90

Ground (Bonding) Conductor: Uninsulated stranded bare copper conductor

Inner Jacket: Flame-retardant and moisture resistant Polyvinyl Chloride (PVC)

Armour: Aluminum Interlocked Armour (AIA)

Outer Jacket: Low-temperature, moisture and sunlight resistant Polyvinyl Chloride (PVC), black

Options: Galvanized Steel Interlocked Armour (GSIA)
Other coloured outer jacket and constructions available upon request

12 AWG

Part Number	No. of Cond.	AWG Size		Insulation Thickness (in.)	Approximate Diameter (Over)				Copper Content		Net Weight w/ Armour		Amp. (30°C Ambient)	Recommended Connector*	
		Cond.	Bond Wire		Insul. (in.)	Inner Jacket (in.)	Armour (in.)	Outer Jacket (in.)	LB/ MFT	KG/ KM	LB/ MFT	KG/ KM		TMC2	TMC2X
05002-01-010	**2**	**12**	14	0.030	0.150	0.400	0.620	0.700	55	82	228	340	30	1/1A	1/1A
05002-02-010	**3**	**12**	14	0.030	0.150	0.430	0.650	0.730	75	112	254	378	30	2/2A	2/2A
05002-03-010	**4**	**12**	14	0.030	0.150	0.470	0.690	0.770	96	143	293	436	30	2/2A	2/2A
05002-04-010	**5**	**12**	14	0.030	0.150	0.510	0.730	0.810	116	173	350	521	24	2/2A	2/2A
05002-05-010	**6**	**12**	14	0.030	0.150	0.590	0.810	0.890	137	204	416	619	24	2/2A	2/2A
05002-06-010	**7**	**12**	14	0.030	0.150	0.610	0.830	0.910	157	234	443	660	21	2/2A	2/2A
05002-07-010	8	**12**	14	0.030	0.150	0.640	0.860	0.940	177	264	492	732	21	3/3A	3/3A
05002-09-010	**10**	**12**	14	0.030	0.150	0.730	0.950	1.040	219	326	555	826	21	3/3A	3/3A
05002-11-010	**12**	**12**	14	0.030	0.150	0.790	1.010	1.100	261	389	653	972	21	3/3A	3/3A
05002-14-010	**15**	**12**	14	0.030	0.150	0.850	1.070	1.160	322	480	757	1127	21	4/4A	4/4A
05002-19-010	**20**	**12**	14	0.030	0.150	1.010	1.230	1.320	424	631	986	1468	21	4/4A	4/4A
05002-24-010	**25**	**12**	14	0.030	0.150	1.110	1.330	1.420	527	785	1210	1801	18	5/5A	5/5A
05002-29-010	**30**	**12**	14	0.030	0.150	1.180	1.400	1.490	630	938	1320	1965	18	5/5A	5/5A
05002-31-010	**40**	**12**	14	0.030	0.150	1.320	1.540	1.640	837	1246	1725	2567	18	6/6A	6/6A
05002-49-010	**50**	**12**	14	0.030	0.150	1.450	1.670	1.770	1044	1553	2055	3058	15	6/6A	6/6A

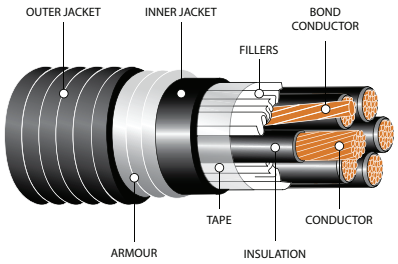
Note: All dimensions are nominal and are subject to normal manufacturing tolerance.
Specifications are subject to change without prior notice.

** See pages 30 & 31 for corresponding connector.*

TEXCAN
Division of Sonepar Canada Inc.

Multiconductor 10 AWG 600V

XLPE/PVC/AIA/PVC



SPECIFICATIONS

- CSA FT1 & FT4
- CSA C22.2 No. 131 & 174
- IEEE 383 & 1202 (70,000 BTU/hr) Flame Test
- ICEA T-30-520 (70,000 BTU/hr) Vertical Flame Test

*Refer to CE Code for details

HL

CONSTRUCTION

Conductor: Bare copper Class B compressed stranded

Insulation: Cross-Linked Polyethylene (XLPE) Type RW90

Ground (Bonding) Conductor: Uninsulated stranded bare copper conductor

Inner Jacket: Flame-retardant and moisture resistant Polyvinyl Chloride (PVC)

Armour: Aluminum Interlocked Armour (AIA)

Outer Jacket: Low-temperature, moisture and sunlight resistant Polyvinyl Chloride (PVC), black

Options: Galvanized Steel Interlocked Armour (GSIA)
Other coloured outer jacket and constructions available upon request

10 AWG

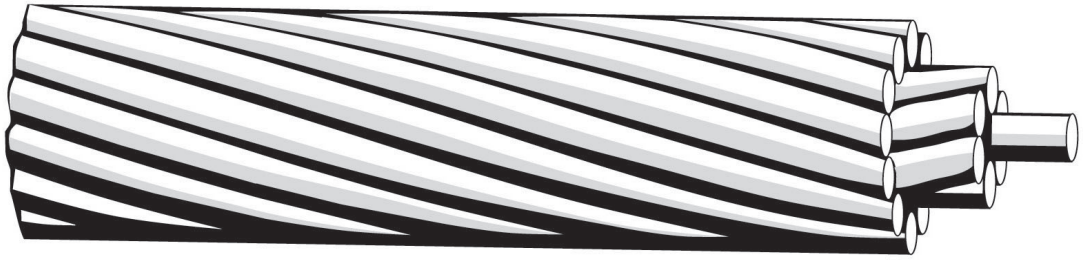
Part Number	No. of Cond.	AWG Size		Insulation Thickness (in.)	Approximate Diameter (Over)				Copper Content		Net Weight w/ Armour		Amp. (30°C Ambient)	Recommended Connector*	
		Cond.	Bond Wire		Insul. (in.)	Inner Jacket (in.)	Armour (in.)	Outer Jacket (in.)	LB/ MFT	KG/ KM	LB/ MFT	KG/ KM		TMC2	TMC2X
05003-01-010	**2**	**10**	12	0.030	0.180	0.450	0.670	0.750	87	130	275	410	40	2/2A	2/2A
05003-02-010	**3**	**10**	12	0.030	0.180	0.480	0.700	0.780	119	177	327	487	40	2/2A	2/2A
05003-03-010	**4**	**10**	12	0.030	0.180	0.555	0.740	0.830	150	223	413	615	40	2/2A	2/2A
05003-04-010	**5**	**10**	12	0.030	0.180	0.600	0.820	0.910	184	274	473	704	32	2/2A	2/2A
05003-05-010	**6**	**10**	12	0.030	0.180	0.660	0.880	0.960	217	323	515	766	32	3/3A	3/3A
05003-07-010	**8**	**10**	12	0.030	0.180	0.710	0.930	1.020	282	420	613	912	28	3/3A	3/3A
05003-09-010	**10**	**10**	12	0.030	0.180	0.860	1.080	1.160	348	518	828	1232	28	4/4A	4/4A
05003-11-010	**12**	**10**	12	0.030	0.180	0.930	1.150	1.230	414	617	916	1363	28	4/4A	4/4A
05003-14-010	**15**	**10**	12	0.030	0.180	1.000	1.220	1.300	512	762	1084	1613	28	4/4A	4/4A
05003-19-010	**20**	**10**	12	0.030	0.180	1.140	1.360	1.440	675	1005	1316	1958	28	5/5A	5/5A
05003-24-010	**25**	**10**	12	0.030	0.180	1.250	1.470	1.550	835	1243	1612	2399	24	5/5A	5/5A
05003-29-010	**30**	**10**	12	0.030	0.180	1.330	1.550	1.650	998	1493	1821	2709	24	6/6A	6/6A
05003-31-010	**40**	**10**	12	0.030	0.180	1.490	1.710	1.810	1321	1966	2278	3390	24	7/7A	7/7A
05003-33-010	**50**	**10**	12	0.030	0.180	1.650	1.870	1.970	1648	2453	2820	4196	20	8/8A	8/8A/8B

Note: All dimensions are nominal and are subject to normal manufacturing tolerance.
Specifications are subject to change without prior notice.

** See pages 30 & 31 for corresponding connector.*

Bare Copper Wire and Cable

Bare Copper Conductor. Solid and Stranded .



APPLICATIONS

Solid and stranded (classes AA and A) bare copper are suitable for overhead transmission and distribution applications. Stranded conductor of greater flexibility (classes B and C) are suitable for uninsulated hook up, jumpers, and grounds in electrical construction. Soft Drawn copper is unilay construction.

SPECIFICATIONS

Southwire's bare copper wire and cable meets or exceeds the following ASTM specifications:

- B-1 Hard-Drawn Copper Wire.
- B-2 Medium-Hard Copper Wire.
- B-3 Soft or Annealed Copper Wire.
- B-8 Concentric-Lay-Stranded Hard, Medium-Hard or Soft Copper Conductor.
- B-33 Tinned Conductors
- B-787 19 Wire Combination Unilay-Stranded Soft copper wire.

CONSTRUCTION

Bare copper, solid or stranded. Available in tempers hard, medium-hard, or soft. Stranded conductors are concentrically stranded in hard and medium-hard tempers and are Combination Unilay stranded in the soft-drawn temper.

Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

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Bare Copper

Size (AWG)	Stranding	Stranding Class	Weight (lbs/1000 ft)	Diameter (mils)		Hard Drawn		Medium-Hard Drawn		Soft-Drawn (Annealed)		Allowable Ampacity+
				Individual Wires	Complete Conductor	Rated Strength (lbs)	DC Resistance (ohms/1000 ft) @20°C	Rated Strength (lbs)	DC Resistance (ohms/1000 ft) @20°C	Rated Strength (lbs)	DC Resistance (ohms/1000 ft) @20°C	
STRANDED												
8	7	B	51	49	146	777	.6663	610	.6629	499	.6408	95
6	7	B	81	61	184	1228	.4191	959	.4169	794	.4030	130
4	7	A, B	128.9	77	232	1938	.2636	1505	.2622	1320	.2534	170
3	7	A, B	162.5	87	260	2433	.2090	1885	.2079	1670	.2010	200
2	7	A, B	204.9	97	292	3050	.1660	2360	.1650	2110	.1578	230
1	7	A	258.4	109	328	3801	.1316	2955	.1309	2552	.1252	265
1/0	7	A, AA	326.1	123	368	4752	.1042	3705	.1037	3221	.1002	310
2/0	7	A, AA	410.9	138	414	5926	.08267	4640	.08224	4062	.07949	355
2/0	19	B	410.9	84	418	6690	.08267	4765	.08224	4024	.07949	355
3/0	7	A, AA	518.1	155	464	7366	.06556	5812	.06522	5118	.06304	410
4/0	7	A, AA	653.3	174	522	9154	.05199	7278	.05172	6459	.04999	480
4/0	19	B	653.3	106	528	9617	.05199	7479	.05172	6453	.04999	480
250	19	A	771.9	115	574	11360	.04400	8836	.04378	7627	.04231	530
250	37	B	771.9	82	575	11600	.04400	8952	.04378	7940	.04231	530
300	19	A	926.2	126	628	13510	.03667	10530	.03648	9160	.03526	590
350	19	A	1080.6	136	679	15590	.03143	12200	.03127	10680	.03022	650
500	37	A, B	1543.8	116	814	22510	.02200	17550	.02189	15240	.02116	810
600	37	A, AA	1852.5	127	891	27020	.01834	21060	.01825	18300	.01763	910
750	61	A, B	2315.6	111	998	34090	.01467	26510	.01459	22890	.01410	1040
1000	61	A, B	3087.5	128	1152	45030	.01100	35100	.01094	30500	.01058	1240

+Ampacity based on 75°C conductor temperature; 25°C ambient temperature; 2 ft./sec. wind in sun.

Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
NAME: Sandra Rousseau
DATE: Nov 10, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 013 **Referencing** 260520
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer :

Descriptions / comments

Boxes and wire / cable connector

Comments of Professionnal :

- No Electrical Comments.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

- [x] REVIEWED
- [ ] REVIEWED AS NOTED
- [ ] REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Nov. 14, 2022

DILLON CONSULTING

Red•Dot® universal device boxes



S100CN / S105CN / B13030G / IH3



B1502SG



DIH3-1-LM



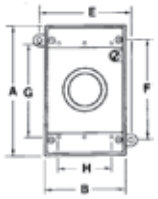
IH4 / S101E / S121E-R-CN



S102CN / S107CN / IH5



IH6S2



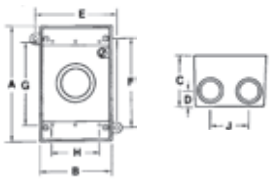
Cat. No.	Description	No. of Hubs	Hub Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	Cu. (in.)
Single Gang Outlet Boxes - 2 in. Deep (Cast Aluminum)													
S100CN	Single gang universal standard outlet box	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	19.0
S100BRCN	Single gang universal standard outlet box, bronze, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	19.0
S100WHCN	Single gang universal standard outlet box, white, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	19.0
S105CN	Single gang universal weatherproof box, silver, aluminum	3	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	18.3
B13030G	Single gang universal weatherproof box, silver, aluminum	3	1	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	17.5
IH3-1-LM	Single gang universal weatherproof box,silver, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
IH4-1-LM	Single gang universal weatherproof box, silver, aluminum	4	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
IH4-2-LM	Single gang universal weatherproof box, silver, aluminum	4	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3
S101E	Single gang universal standard outlet box, silver, aluminum	4	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
S102CN	Single gang universal standard outlet box, silver, aluminum	5	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
S107CN	Single gang universal weatherproof box, silver, aluminum	5	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3
B1501SGR	Single gang universal weatherproof box, silver, aluminum	5	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3
B1502SG	Single gang universal weatherproof box, hub, silver, aluminum	5	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.0
IH6S2-1	Single gang universal weatherproof box, silver, aluminum	6	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	17.5
IH6S2-2	Single gang universal weatherproof box, silver, aluminum	6	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	17.5
DIH3-1-LM	Single gang universal weatherproof box, silver, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
DIH3-1-LM-WH	Single gang universal weatherproof box, white, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
DIH3-2-LM	Single gang universal weatherproof box, white, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3
IH3-1	Single gang universal weatherproof box, white, aluminum	3	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
IH4-1	Single gang universal weatherproof box, white, aluminum	4	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
IH4-2	Single gang universal weatherproof box, white, aluminum	4	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3
IH5-1-LM	Single gang universal weatherproof box, white, aluminum	5	1/2	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	19.0
IH5-2-LM	Single gang universal weatherproof box, white, aluminum	5	3/4	4-9/16	2-13/16	2	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	18.3



IHD3 Series



IHD4 Series



Cat. No.	Description	No. of Hubs	Hub Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	Cu. (in.)
Single Gang Outlet Boxes – 2-5/8 in. Deep (Cast Aluminum)													
IHD3-1	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	3	1/2	4-9/16	2-13/16	2-5/8	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	24.8
IHD31GDC	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	3	1/2	4-9/16	2-13/16	2-5/8	3/4	3-3/16	3-1/2	3-1/4	1-7/8	–	24.8
IHD3-2	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	3	3/4	4-9/16	2-13/16	2-5/8	5/8	3-3/16	3-1/2	3-1/4	1-7/8	–	24.8
IHD3-3	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	3	1	4-9/16	2-13/16	2-5/8	3/4	3-3/16	3-1/2	3-1/4	1-7/8	–	24.8
IHD4-1	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	4	1/2	4-9/16	2-13/16	2-5/8	5/8	3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	24.8
IHD4-2	Single gang deep universal weatherproof box, 2-5/8 in. deep, silver, aluminum	4	3/4	4-9/16	2-13/16	2-5/8		3-3/16	3-1/2	3-1/4	1-7/8	1-1/2	24.8

Mounting lugs and screws included in packaging
Raintight when used with appropriate Red Dot® covers

Red•Dot® universal device boxes



S400CN / S405E



2IH4



S401CN / S402CN / 2IH5-1



2IH5S2



2IH7



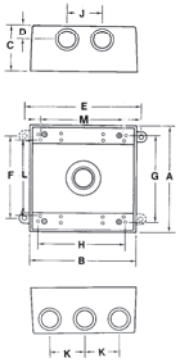
2IH7S2



2IHD5



3IHD7



Cat. No.	Description	No. of Hubs	Hub Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	K (in.)	L (in.)	M (in.)	Cu. (in.)
Two Gang Outlet Boxes – 2 in. Deep (Cast Aluminum)																
S400CN	Two gang universal weatherproof box, silver, aluminum, with ground screw	3	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	–	3-1/4	3-9/16	31.8
S405E	Two gang universal weatherproof box, silver, aluminum, with ground screw	3	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	–	3-1/4	3-9/16	31.8
2IH3-2	Two gang universal weatherproof box, silver, aluminum, with ground screw	3	3/4	4-9/16	4-5/8	2-1/16	–	–	–	–	–	–		3-1/4	3-9/16	31.8
2IH4-1	Two gang universal weatherproof box, silver, aluminum, with ground screw	4	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	31.8
2IH4-2	Two gang universal weatherproof box, silver, aluminum, with ground screw	4	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	31.8
S401CN	Two gang universal weatherproof box, silver, aluminum, with ground screw	5	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	31.8
S402CN	Two gang universal weatherproof box, silver, aluminum, with ground screw	5	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	31.8
2IH5-1	Two gang universal weatherproof box, silver, aluminum, with ground screw	5	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	31.8
2IH5S2-1	Two gang universal weatherproof box, silver, aluminum, with ground screw	5	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	–	3-1/4	3-9/16	31.8
2IH5S2-2	Two gang universal weatherproof box, silver, aluminum, with ground screw	5	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	–	3-1/4	3-9/16	31.8
2IH7-1	Two gang universal weatherproof box, silver, aluminum, with ground screw	7	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	1-1/2	3-1/4	3-9/16	30.3
2IH7-2	Two gang universal weatherproof box, silver, aluminum, with ground screw	7	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	–	1-1/2	3-1/4	3-9/16	30.3
2IH7S2-1	Two gang universal weatherproof box, silver, aluminum, with ground screw	7	1/2	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	32.0
2IH7S2-2	Two gang universal weatherproof box, silver, aluminum, with ground screw	7	3/4	4-9/16	4-5/8	2-1/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	–	3-1/4	3-9/16	32.0

Cat. No.	No. of Hubs	Hub Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	J (in.)	L (in.)	M (in.)	Cu. (in.)
Two Gang Outlet Boxes – 2-5/8 in. Deep (Cast Aluminum)														
2IHD5-1	5	1/2	4-9/16	4-5/8	2-11/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	3-1/4	3-9/16	40.3
2IHD5-2	5	3/4	4-9/16	4-5/8	2-11/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	3-1/4	3-9/16	40.3
2IHD5-3	5	1	4-9/16	4-5/8	2-11/16	5/8	5	3-1/2	3-11/16	3-3/4	1-1/2	3-1/4	3-9/16	40.3

Cat. No.	No. of Hubs	Hub Size (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)	H (in.)	K (in.)	L (in.)	M (in.)	Cu. (in.)
Three Gang Outlet Boxes - 2-5/8 in. Deep (Cast Aluminum)														
B37D20G*	7	3/4	4-9/16	6-7/16	2-11/16	1-3/16	6-13/16	3-1/2	3-1/4	5-5/8	1-1/2	3-1/4	3-9/16	54.8
B37D30G*	7	1	4-9/16	6-7/16	2-11/16	1-3/16	6-13/16	3-1/2	3-1/4	5-5/8	1-1/2	3-1/4	3-9/16	54.8

* Not CSA approved

Raintight when used with appropriate Red Dot® covers

HINGED-COVER, TYPE 1



APPLICATION

These boxes feature a recessed, slotted flush latch for security as well as knockouts on all four sides, making them suitable for a wide variety of applications.

FEATURES

- Various sizes of easily removable concentric knockouts on all four sides
- Butt hinges
- Mounting holes on back of box
- Provision for grounding

SPECIFICATIONS

- 16 or 14 gauge steel

FINISH

ANSI 61 gray polyester powder paint finish inside and out over pretreated surfaces. Unless otherwise specified, all custom cutout boxes are finished with ANSI 61 gray polyester paint.

ACCESSORIES

See Accessories.
T-Handle Latch and Keyed Cylinder Lock Kits
Grounding Device
Touch-Up Paint

BULLETIN: A90HC

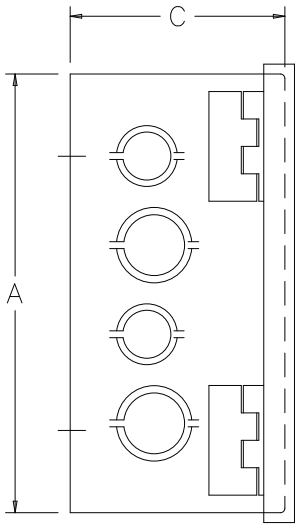
INDUSTRY STANDARDS

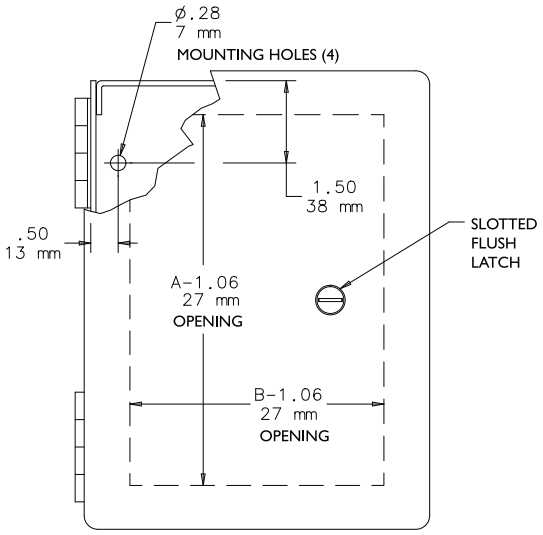
UL 50, 50E Listed; Type 1; File No. E27567
cUL Listed per CSA C22.2 No 40; Type 1; File No. E27567

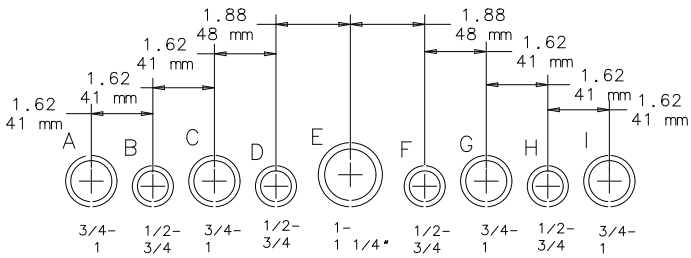
NEMA/EEMAC Type 1
CSA, File 42184: Type 1
IEC 60529, IP30

Standard Product

Catalog Number	AxBxC in.	AxBxC mm	Knockout Pattern along "A" Sides	Knockout Pattern along "B" Sides
AHE6X4X4	6.00 x 4.00 x 4.00	152 x 102 x 102	B-C-D	B-C
AHE6X6X4	6.00 x 6.00 x 4.00	152 x 152 x 102	B-C-D	B-C-D
AHE8X6X4	8.00 x 6.00 x 4.00	203 x 152 x 102	F-G-H-I	B-C-D
AHE8X8X4	8.00 x 8.00 x 4.00	203 x 203 x 102	F-G-H-I	F-G-H-I
AHE10X8X4	10.00 x 8.00 x 4.00	254 x 203 x 102	F-G-H-I	F-G-H-I
AHE10X10X4	10.00 x 10.00 x 4.00	254 x 254 x 102	F-G-H-I	C-D-E-F-G
AHE12X8X4	12.00 x 8.00 x 4.00	305 x 203 x 102	C-D-E-F-G	F-G-H-I
AHE12X10X4	12.00 x 10.00 x 4.00	305 x 254 x 102	C-D-E-F-G	C-D-E-F-G
AHE12X12X4	12.00 x 12.00 x 4.00	305 x 305 x 102	C-D-E-F-G	C-D-E-F-G
AHE16X12X4	16.00 x 12.00 x 4.00	406 x 305 x 102	B-C-D-E-F-G-H	C-D-E-F-G
AHE18X12X4	18.00 x 12.00 x 4.00	457 x 305 x 102	A-B-C-D-E-F-G-H-I	C-D-E-F-G
AHE6X6X6	6.00 x 6.00 x 6.00	152 x 152 x 152	B-C-D	B-C-D
AHE8X8X6	8.00 x 8.00 x 6.00	203 x 203 x 152	F-G-H-I	F-G-H-I
AHE10X8X6	10.00 x 8.00 x 6.00	254 x 203 x 152	F-G-H-I	F-G-H-I
AHE10X10X6	10.00 x 10.00 x 6.00	254 x 254 x 152	F-G-H-I	C-D-E-F-G
AHE12X10X6	12.00 x 10.00 x 6.00	305 x 254 x 152	C-D-E-F-G	C-D-E-F-G
AHE12X12X6	12.00 x 12.00 x 6.00	305 x 305 x 152	C-D-E-F-G	C-D-E-F-G
AHE16X12X6	16.00 x 12.00 x 6.00	406 x 305 x 152	B-C-D-E-F-G-H	C-D-E-F-G
AHE16X16X6	16.00 x 16.00 x 6.00	406 x 406 x 152	B-C-D-E-F-G-H	B-C-D-E-F-G-H
AHE18X12X6	18.00 x 12.00 x 6.00	457 x 305 x 152	A-B-C-D-E-F-G-H-I	C-D-E-F-G
AHE18X18X6	18.00 x 18.00 x 6.00	457 x 457 x 152	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I
AHE24X18X6	24.00 x 18.00 x 6.00	610 x 457 x 152	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I
AHE24X24X6	24.00 x 24.00 x 6.00	610 x 610 x 152	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I
AHE30X24X6	30.00 x 24.00 x 6.00	762 x 610 x 152	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I
AHE36X24X6	36.00 x 24.00 x 6.00	914 x 610 x 152	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I
AHE36X24X8	36.00 x 24.00 x 8.00	914 x 610 x 203	A-B-C-D-E-F-G-H-I	A-B-C-D-E-F-G-H-I

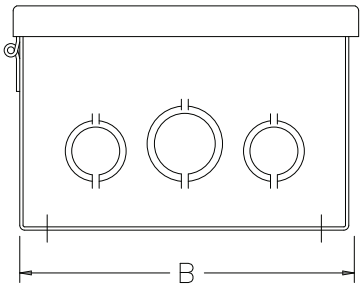






CONDUIT SIZES

Knockout Pattern
(from outside of box)



C2571–C

NOTE: Refer to table for applicable knockout pattern.

Boîtes pour appareil

Brides pour câble armé et câble sous gaine non-métallique

IBERVILLE md



BC2104-LLE

Pointes de fixation et guides de positionnement.



BC2304-LHTQ

Provision de montage à une vis des pattes de positionnement externes pour clouage dans des cloisons sèches de 1/2 et 3/4 po.



BC2104-LX

Brides à tension.
Pointes de fixation et guides de positionnement sur un côté.
Approuvée pour câble à gaine non-métallique seulement.



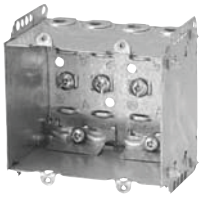
BC2104-LN

Clous ancrés.
Pointes de fixation et guides de positionnement sur un côté.



BC2104-LRB

Côtés plats facilitent l'installation dans les applications de rénovation.
1 groupe.



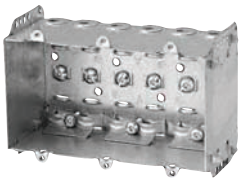
BC2104-LLE-2

2 groupes.
Pointes de fixation et guides de positionnement.



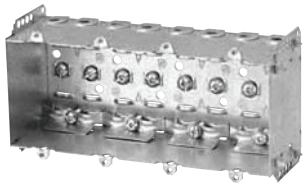
BC2104-LRB-2

2 groupes.
Côtés plats facilitent l'installation dans les applications de rénovation.



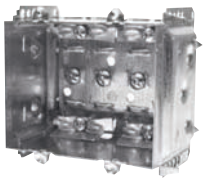
BC2104-LLE-3

3 groupes.
Pointes de fixation et guides de positionnement.



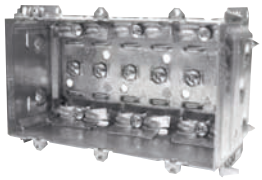
BC2104-LLE-4

4 groupes.
Pointes de fixation et guides de positionnement sur un côté.



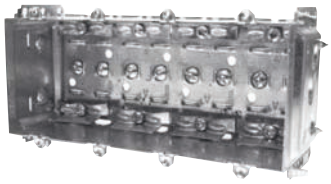
BC2304-LHTQ-2

2 groupes.
Pointes de fixation et guides de positionnement.



BC2304-LHTQ-3

3 groupes.
Pointes de fixation et guides de positionnement.



BC2304-LHTQ-4

4 groupes.
Pointes de fixation et guides de positionnement sur un côté.

Spécifications techniques

N° cat.	Largeur (po)	Capacité (po.cu.)	Caractéristiques		Débouchures câble
			oreilles	équerre	bouts
2-1/2 po Profond — Non-Groupable — 3 po de haut					
BC2104-LLE	2	12,5	-	guides	4
BC2104-LLE-2	3-3/4	25,0	-	guides	8
BC2104-LLE-3	5-1/2	37,5	-	guides	12
BC2104-LLE-4	7-3/8	50,0	-	guides	16
BC2104-LN	2	12,5	-	guides/clous	4
BC2104-LX	2	12,5	-	guides	4
BC2304-LHTQ	2	14,5	-	guides	4
BC2304-LHTQ-2	3-3/4	27,0	-	guides	8
BC2304-LHTQ-3	5-1/2	39,5	-	guides	12
BC2304-LHTQ-4	7-3/8	52,0	-	guides	16
BC2104-LRB	2	12,5	-	guides	4
BC2104-LRB-2	3-3/4	25,0	-	guides	8

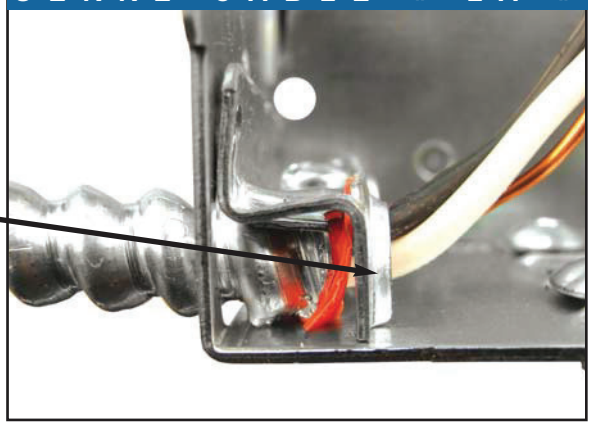
Le saviez-vous…

Lorsque vous effectuez la terminaison d'un câble armé (BX) dans une boîte pour dispositifs, un cavalier de protection doit être inséré entre les conducteurs et l'armure du câble. De plus, il doit y avoir un moyen préventif qui empêche l'armure de pénétrer dans la boîte plus loin que le serre-câble. ***Iberville***md offre deux solutions qui répondent à ces besoins.

A

Notre serre-câble « LA » : Un serre-câble conçu de manière à ce que le cavalier de protection et l'armure s'aboutent contre une cloison de butée intégrée au serre-câble.

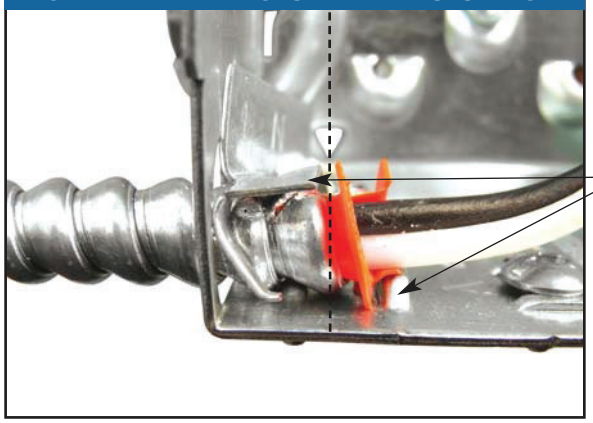
SERRE-CÂBLE « LA »



B

Nos boîtes à double usage sont dotées de rebords de retenue intégrées au dessous de la pièce intercalaire qui, conjointement au serre-câble, maintiennent en place le cavalier de protection et empêche l'armure de pénétrer dans la boîte.

BOÎTE À DOUBLE USAGE



TECK CABLE FITTINGS

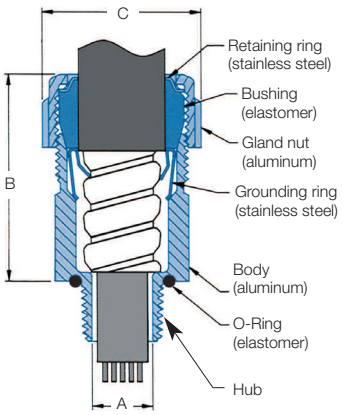
Star Teck® (ST) – Series Fittings for Teck and ACWU Cable





StarTeck® (ST) Series

Star Teck® cable fittings are designed to accommodate a broad range of cables, thereby minimizing the possibility of mismatched cables and fittings in the field. They are available in hub sizes from 1/2 to 4 inches, and will handle outer jacket diameters from 0.525 to 4.340 inches.



Cat. No.	Hub Size N.P.T.	Range Over Jacket (in.)		Dimensions (in.)		
		min.	max.	A	B*	C
ST038-461S†	3/8	0.344	0.535	0.344	2.020	0.995
ST050-462	1/2	0.525	0.650	0.390	2.020	1.224
ST050-464	1/2	0.600	0.760	0.480	2.020	1.363
ST050-465	1/2	0.725	0.885	0.607	2.133	1.633
ST050-466	1/2	0.825	0.985	0.607	2.133	1.633
ST075-467	3/4	0.880	1.065	0.809	2.450	2.080
ST075-468	3/4	1.025	1.205	0.809	2.450	2.080
ST100-469	1	1.187	1.375	1.034	2.601	2.230
ST125-470	1-1/4	1.350	1.625	1.177	3.282	2.824
ST125-550	1-1/4	1.500	1.625	1.365	3.282	2.824
ST125-471	1-1/4	1.600	1.875	1.365	3.282	2.824
ST150-472	1-1/2	1.700	1.965	1.552	3.620	3.260
ST150-473	1-1/2	1.900	2.187	1.595	3.620	3.260
ST200-551	2	1.900	2.187	1.710	3.640	3.620
ST200-474	2	2.100	2.375	1.990	3.640	3.620
ST200-475	2	2.300	2.565	2.052	3.640	4.020
ST200-476	2	2.500	2.750	2.052	3.640	4.020
ST250-477	2-1/2	2.380	2.640	2.255	4.700	4.750
ST250-478	2-1/2	2.580	2.840	2.455	4.700	4.750
ST300-479	3	2.790	3.060	2.655	4.700	5.050
ST300-480	3	3.000	3.270	2.885	4.790	5.480
ST300-481	3	3.210	3.480	3.057	4.790	5.480
ST350-482	3-1/2	3.420	3.690	3.285	4.790	5.980
ST350-483	3-1/2	3.610	3.870	3.455	4.790	5.980
ST400-484	4	3.810	4.030	3.625	4.840	6.435
ST400-485	4	3.965	4.185	3.770	4.840	6.435
ST400-486	4	4.120	4.340	3.935	4.840	6.435

** Approximate dimension before installation.*
† Only available in steel

Materials

Aluminum: *The above listed catalogue numbers relate to aluminum fittings. The body and gland nut on hub sizes 1/2 to 1 inch are machined from copper-free bar stock and 1-1/4 to 4 inches are made of cast copper-free aluminum.*
Steel: *To order a steel or malleable iron fitting, add the suffix* **"S"** *to the catalogue number (example ST050-464S). The body and gland nut on hub sizes 1/2 to 1 inch are made of steel and 1-1/4 to 4 inches are made of malleable iron. Plating is electro-deposited zinc.*
Stainless Steel: *To order a 316 stainless steel fitting, add the suffix* **"SS"** *to the catalogue number (example ST050-464SS). Only available for 1/2 thru 2 inch hub sizes.*
PVC-Coated Aluminum and Steel: *To order, add the suffix* **"PVC"** *to the catalogue number (example ST050-464PVC or ST050-464SPVC).*

Note - *When using fittings on single conductor cable, aluminum fittings and aluminum locknuts must be used.*

Certifications

Type HLA. CSA Certified *Class II, Divisions 1 and 2, Groups E, F, and G; Class III and Enclosure Type 4, Type 4X, Classes I, II and III. These fittings are suitable for Class I hazardous locations when used in combination with a certified Class I hazardous location sealing fitting. CSA File No. LR-23086.*

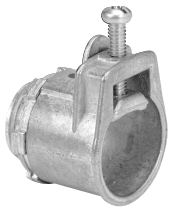
Complies with IEC requirements for Class I, Zones 1 and 2, when used in combination with a certified Class I hazardous location sealing fitting.

U.L. Listed *Class I, Division 2; Class II, Division 2 and Class III. Meets sealing requirements for types 4 and 6 enclosures. File no. E-38947. PVC-coated fittings are only approved for ordinary location areas (OLA).*



CI70

Zinc Die Cast Locknut

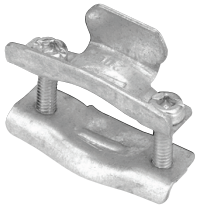


CI71 / CI73

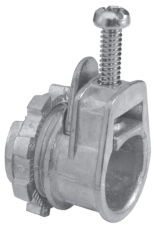
Zinc Die Cast Locknut



CI806



CI2060 / CI2061

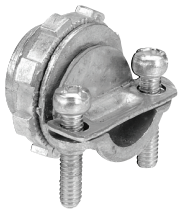


L-16

Zinc Die Cast Locknut

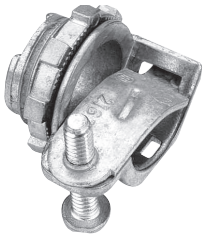


CI804



CI808 / CI816

Zinc Die Cast Locknut



CI2163

Zinc Die Cast Locknut

Technical Specifications

Cat. No.	Trade Size	Clamping Range min.	Clamping Range max.	Suggested Application NMD90 (loomex)
One Screw Connectors (Zinc Alloy)				
L-16	3/8	0.12	0.63	14/2, 14/3, 12/2, 12/3, 10/2
CI70	3/8	0.13	0.70	14/2-10/2; 14/3-10/3
CI71	1/2	0.33	0.95	8/2-4/2; 12/3-4/3
CI72	3/4	0.60	1.15	4/2-3/2; 4/3-3/3
CI73	1	0.93	1.47	2/2; 2/3
Two Screw Connectors (Zinc Alloy)				
CI804	3/8	0.18	0.64	14/2-10/2; 2# 14/2 and 2 # 12/2
CI806	3/4	0.41	0.82	8/2-6/3
CI808	1	0.50	1.04	4/2-2/2; 8/3-4/3
CI810	1-1/4	0.56	1.06	4/2-2/2; 8/3-4/3
CI812	1-1/2	0.63	1.60	4/2-2/2; 8/3-2/3
CI816	2	0.86	2.06	3/2-2/2; 6/3-2/3
Two Screw Connectors (Steel)				
CI2060	3/8	0.11	0.60	14/2-10/2; 14/3-10/3
CI2061	3/4	0.15	0.90	10/2-6/2; 10/3-6/3
One Screw Connectors (Zinc Alloy)				
CI2163	3/8	0.35	0.61	10/3

All NMD90 connectors are also suitable for NMWU90 of equivalent diameters, in dry locations. NOTE: 3/8" trade size connectors require a 1/2" knockout.

Technical improvements are constantly taking place in the electrical industry. The cable manufacturers are changing their products from time to time. Accordingly, it is strongly suggested that you verify the cable size with the cable manufacturer prior to selecting a connector.

Technical Specifications



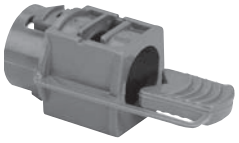
CI2166 / CI2167

Zinc Die Cast Locknut



CI2175

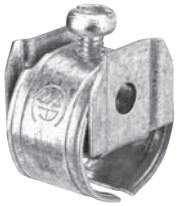
Zinc Die Cast Locknut



CI3360



CI4004 / W100LX-D



CI4040



CI9049

Cat. No.	Trade Size	Clamping Range min.	Clamping Range max.	Suggested Application NMD90 (loomex)
One Screw Connectors (Aluminum)				
CI2166	1/2	0.50	0.90	8/3-6/3
CI2167	3/4	0.71	1.10	6/3-4/3
Duplex Connectors (Zinc Alloy)				
One Screw				
CI2175	3/8	0.15	0.65	14/2-10/2; 14/3-10/3
Nonmetallic Connectors				
CI3360	1/2	0.30	0.60	14/2-10/2; 14/3-10/3 2 cables: 14/2-12/2
CI4004	1/2	0.21	0.42	14/2-10/2; 14/3-10/3 2 cables: 14/2-12/2
W100LX-D	1/2	0.21	0.42	14/2-10/2; 14/3-10/3 2 cables: 14/2-12/2
One Screw Connectors (Steel)				
CI4040	3/8	0.19	0.57	14/2-10/2; 14/3-10/3 2 cables: 14/2
CI9049	3/8	0.13	0.37	14/2-10/2; 14/3-12/3

All NMD90 connectors are also suitable for NMWU90 of equivalent diameters, in dry locations. NOTE: 3/8 trade size connectors require a 1/2" knockout.

Technical improvements are constantly taking place in the electrical industry. The cable manufacturers are changing their products from time to time. Accordingly, it is strongly suggested that you verify the cable size with the cable manufacturer prior to selecting a connector.

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
NAME: Sandra Rousseau
DATE: Nov 10, 2022

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 014 **Referencing** 260528
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Eritech + Pentair + Thomas & Betts

Descriptions / comments

Grounding

Comments of Professionnal :

- No Electrical Comments.

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

- [x] REVIEWED
- [ ] REVIEWED AS NOTED
- [ ] REVISE & RESUBMIT

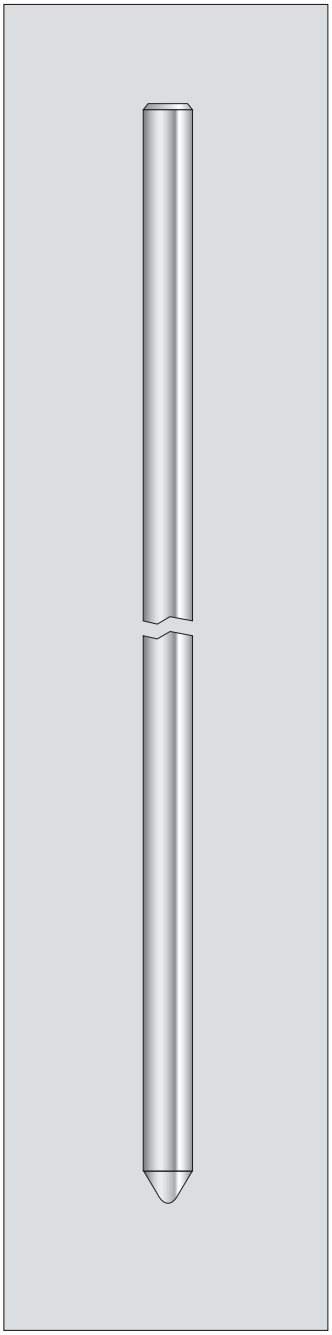
DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Nov. 14, 2022

DILLON CONSULTING

Ground Electrodes

ERITECH® Copperbonded Pointed Ground Rods

- Copper is molecularly bonded to nickel-sealed high-strength steel cores.
- ERITECH ground rods provide the company name, length, diameter, part number, roll-stamped within 12" of chamfered end and the UL logo and control number where applicable on each rod for easy inspection after installation.
- See specifications on page 69.



Part No.	Plating Thickness (ml.)	Dia. (in.)	Lgth (ft.)
613852	5	3/8	5
613862	5	3/8	6
613880	10	3/8	8
611255	5	Nom. 1/2	5
611265	5	Nom. 1/2	6
611285	5	Nom. 1/2	8
611380*	10	1/2	8
611205	5	Nom. 1/2	10
611300*	10	1/2	10
615850	10	5/8	5
615860	10	5/8	6
615880*	10	5/8	8
615883*	13 - RUS	5/8	8
615800*	10	5/8	10
615803*	13 - RUS	5/8	10
615812*	10	5/8	12
615815*	10	5/8	15
613460	10	3/4	6
613480*	10	3/4	8
613483*	13 - RUS	3/4	8
613400*	10	3/4	10
613412*	10	3/4	12
613415*	10	3/4	15
614400*	10	1	10

*UL Listed rods

Ground Enhancement Material (GEM)



Ground Enhancement Material (GEM) is a superior conductive material that solves your toughest grounding problems. It is the ideal material to use in areas of poor conductivity, such as rocky ground, mountain tops and sandy soil. GEM dramatically reduces earth resistance and impedance measurements. Furthermore, GEM may reduce the size of the grounding system where conventional methods are unsatisfactory. Once installed, GEM is maintenance-free, not requiring periodic charging or the presence of water to maintain its conductivity.

To learn more about GEM, please see pages 18-20.

Featured Highlights

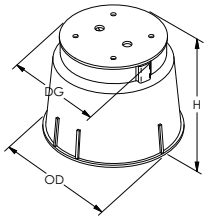
- Maintains constant resistance for the life of the system once in its set form
- Performs in all soil conditions even during dry spells
- Does not require periodic charging treatments or placement
- Does not require the continuous presence of water to maintain its conductivity
- Fully sets within 3 days, fully cures within 28 days
- Does not dissolve, decompose, or leach out with time
- Non-corrosive
- Reduces vandalism and theft since conductors are hard to remove from concrete
- Easy-to-handle 25 lb (11.3kg) bags or buckets
- Requires only one person to install
- Exceeds IEC® 62561-7 which sets the benchmark for corrosion, leaching, sulfur content, and other environmental regulations
- Complies to the United States Environmental Protection Agency (EPA) Toxicity Characteristic Leaching Procedure (TCLP), EPA test method 1311
- Can be installed using trench or ground rod backfill methods

Unit Weight: 25 lb

Part Number	Packaging
GEM25A	Bag with handles
GEM25ABKT	Plastic bucket with locking lid

Inspection Housing, High Density Polyethylene (HDPE)





Featured Highlights

- Pedestrian load rating
- Suitable for lighter load rating applications in turf
- Chemical, UV and corrosion resistant
- 3/8" x 1 3/4" (44 mm) stainless steel lock bolt included
- Boxes and covers nest in 3 1/4" (83 mm) increments
- Two 3 1/2" x 1 1/2" (89 x 38 mm) knockouts per box
- T416BH includes four additional holes in the cover to allow water to enter the inspection well, typically for use with chemical ground rods

Material: High Density Polyethylene (HDPE)
Color: Green
Load Rating: 300 psf

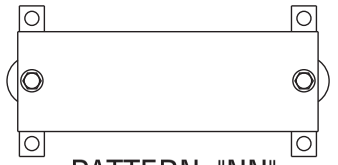
Part Number	Diameter, Grade Level	Outer Diameter	Height	Unit Weight
T416B	10 1/4"	13.1"	10"	4.5 lb
T416BH	10 1/4"	13.1"	10"	4.5 lb

ERITECH®

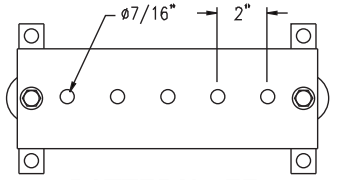
Grounding Bus Bars

Power System Grounding Bus Bars

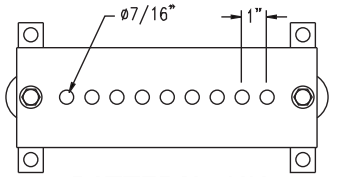
BOLT PATTERN	NO. & SIZE OF HOLES*	GROUNDING BUS BAR DESCRIPTION	LENGTH	PART #	MAX ORDER QTY
ERICO "NN"	0	2" x 1/4" Cu	12"	EGBA14212NN	6
	0	2" x 1/4" Cu	24"	EGBA14224NN	6
	0	4" x 1/4" Cu	12"	EGBA14412NN	6
	0	4" x 1/4" Cu	20"	EGBA14420NN	6
	0	4" x 1/4" Cu	24"	EGBA14424NN	6
ERICO "EE"	5 ea. 7/16"	2" x 1/4" Cu	12"	EGBA14212EE	4
ERICO "HH"	9 ea. 7/16"	2" x 1/4" Cu	12"	EGBA14212HH	4
	21 ea. 7/16"	2" x 1/4" Cu	24"	EGBA14224HH	4
ERICO "BB"	5 pair 7/16"	2" x 1/4" Cu	12"	EGBA14212BB	4
	5 pair 7/16"	4" x 1/4" Cu	12"	EGBA14412BB	4
ERICO "GG"	21 pair 7/16"	2" x 1/4" Cu	24"	EGBA14224GG	4
	9 pair 7/16"	4" x 1/4" Cu	12"	EGBA14412GG	4
	21 pair 7/16"	4" x 1/4" Cu	24"	EGBA14424GG	4
ERICO "CC" NEMA STD	5 sets of 3 - 7/16"	4" x 1/4" Cu	12"	EGBA14412CC	4
	9 sets of 3 - 7/16"	4" x 1/4" Cu	20"	EGBA14420CC	4
	11 sets of 3 - 7/16"	4" x 1/4" Cu	24"	EGBA14424CC	4
ERICO "LL" NEMA STD	9 set of 3 - 7/16"	4" x 1/4" Cu	12"	EGBA14412LL	4
	17 set of 3 - 7/16"	4" x 1/4" Cu	20"	EGBA14420LL	4
	21 set of 3 - 7/16"	4" x 1/4" Cu	24"	EGBA14424LL	4
ERICO "QQ" NEMA STD	23 sets of 4 holes 7/16" and slotted	4" x 1/4" Cu	20"	EGBA14420QQ	4
	28 sets of 4 holes 7/16" and slotted	4" x 1/4" Cu	24"	EGBA14424QQ	4



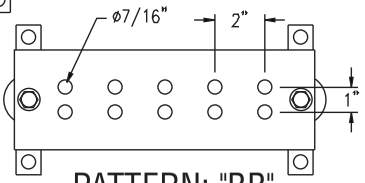
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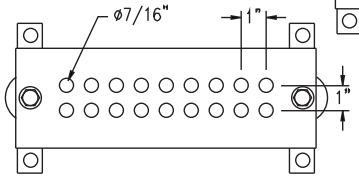
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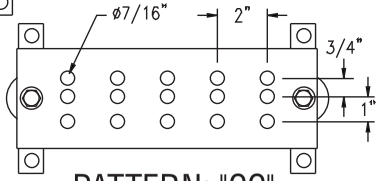
PATTERN: "HH"



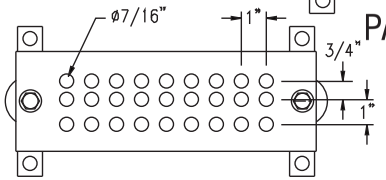
PATTERN: "BB"



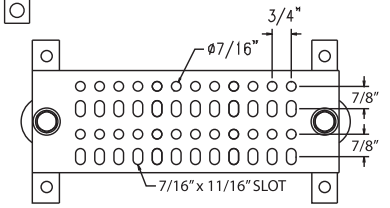
PATTERN: "GG"



PATTERN: "CC"



PATTERN: "LL"



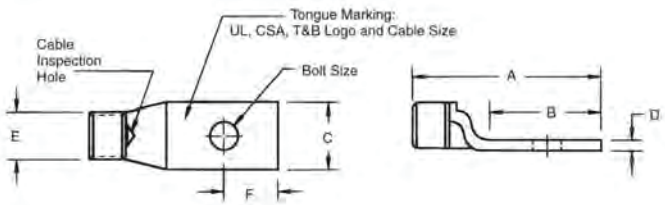
PATTERN: "QQ"

*Does not include mounting holes
All bars have stainless steel brackets, mounting bolts and insulators

ERICO®

One-Hole Lugs – Standard Barrel Certified to 600V and Recommended up to 35 kV¥





Material: High-Conductivity Wrought Copper

Finish: Electro Tin Plate

CAT. NO.	WIRE SIZE		Bolt Size	Dimensions in. (mm)						Die Code	Die Color
	Code	Flex Class G, H, I, K, M		A	B	C	D	E	F		
54101	#14-10 AWG		1/4	1.23 (31.2)	0.56 (14.2)	0.50 (12.7)	0.05 (1.3)	0.20 (5.1)	0.25 (6.4)	ERG2002	Yellow
256-30695-1351			#8	1.36 (34.5)	0.68 (17.3)	0.36 (9.1)	0.05 (1.3)	0.20 (5.1)	0.25 (6.4)	ERG2002	Yellow
256-30695-1352			1/4	1.36 (34.5)	0.68 (17.3)	0.41 (10.4)	0.05 (1.3)	0.20 (5.1)	0.25 (6.4)	ERG2002	Yellow
256-30695-263			1/4	1.69 (43.0)	0.81 (20.6)	0.50 (12.7)	0.07 (1.8)	0.20 (5.1)	0.25 (6.4)	ERG2002	Yellow
54104	#8 AWG	#8 str., 23 Navy #8 Weld 37/24 0.180	#10	1.16 (29.5)	0.50 (12.7)	0.39 (9.9)	0.08 (2.0)	0.25 (6.4)	0.22 (5.6)	21	Red
54130			1/4	1.20 (30.5)	0.61 (15.5)	0.45 (11.4)	0.07 (1.8)	0.25 (6.4)	0.25 (6.4)	21	Red
54131			5/16	1.33 (33.8)	0.64 (16.3)	0.56 (14.2)	0.05 (1.3)	0.25 (6.4)	0.28 (7.1)	21	Red
54132			3/8	1.33 (33.8)	0.64 (16.3)	0.56 (14.2)	0.05 (1.3)	0.25 (6.4)	0.28 (7.1)	21	Red
256-30695-424			1/2	1.75 (44.5)	1.31 (33.3)	1.00 (25.4)	0.13 (3.3)	0.25 (6.4)	0.50 (12.7)	21	Red
256-30695-1361			#12	1.23 (31.2)	0.53 (13.5)	0.44 (11.2)	0.07 (1.8)	0.31 (7.8)	0.22 (5.6)	24	Blue
54134			#10	1.23 (31.2)	0.53 (13.5)	0.44 (11.2)	0.07 (1.8)	0.31 (7.8)	0.22 (5.6)	24	Blue
54105	#6 AWG	#6 str., #30 Navy #6 Weld 61/24 133/0.014, 0.227	1/4	1.23 (31.2)	0.53 (13.5)	0.44 (11.2)	0.07 (1.8)	0.31 (7.8)	0.22 (5.6)	24	Blue
54135			5/16	1.41 (35.8)	0.67 (17.0)	0.60 (15.2)	0.07 (1.8)	0.31 (7.8)	0.31 (7.9)	24	Blue
54136			3/8	1.41 (35.8)	0.67 (17.0)	0.60 (15.2)	0.07 (1.8)	0.31 (7.8)	0.31 (7.9)	24	Blue
256-30695-282			3/8	1.41 (35.8)	0.75 (19.1)	0.56 (14.2)	0.06 (1.5)	0.31 (7.8)	0.31 (7.9)	24	Blue
256-30695-422			1/2	1.75 (44.5)	1.31 (33.3)	1.00 (25.4)	0.13 (3.3)	0.31 (7.8)	0.50 (12.7)	24	Blue
256-30595-1362	#4 AWG	# 5 str., 40-50 Navy 91/24 133/0.0177, 49/0.029 0.265	#12	1.38 (35.1)	0.60 (15.2)	0.55 (14.0)	0.09 (2.3)	0.37 (9.4)	0.25 (6.4)	29	Grey
54138			#10	1.38 (35.1)	0.60 (15.2)	0.55 (14.0)	0.09 (2.3)	0.37 (9.4)	0.25 (6.4)	29	Grey
54106			1/4	1.38 (35.1)	0.60 (15.2)	0.55 (14.0)	0.09 (2.3)	0.37 (9.4)	0.25 (6.4)	29	Grey
54139			5/16	1.42 (36.1)	0.66 (16.8)	0.61 (15.5)	0.07 (1.8)	0.37 (9.4)	0.31 (7.9)	29	Grey
54140			3/8	1.42 (36.1)	0.66 (16.8)	0.61 (15.5)	0.07 (1.8)	0.37 (9.4)	0.31 (7.9)	29	Grey
256-30695-233			3/8	1.56 (37.0)	0.75 (19.1)	0.59 (15.0)	0.06 (1.5)	0.37 (9.4)	0.31 (7.9)	29	Grey
256-30695-264			1/2	2.20 (56.0)	1.40 (35.6)	1.00 (25.4)	0.06 (1.5)	0.37 (9.4)	0.50 (12.7)	29	Grey
54107	#2 AWG	#3 str., #60 Navy 125/24 #4 Weld 0.300	1/4	1.50 (38.1)	0.65 (16.5)	0.59 (15.0)	0.11 (2.8)	0.41 (10.4)	0.25 (6.4)	33	Brown
54142-TB			5/16	1.73 (43.9)	0.88 (22.4)	0.59 (15.0)	0.11 (2.8)	0.41 (10.4)	0.38 (9.7)	33	Brown
54143-TB			3/8	1.65 (41.9)	0.80 (20.3)	0.59 (15.0)	0.11 (2.8)	0.41 (10.4)	0.38 (9.7)	33	Brown
54145-TB			1/2	1.92 (48.8)	1.08 (27.4)	0.75 (19.1)	0.08 (2.0)	0.41 (10.4)	0.50 (12.7)	33	Brown
54108	#1 AWG	#2 str., 75 Navy, #2 Weld 150/24 175/24 133/0.0223, 0.360	1/4	1.50 (38.1)	0.65 (16.5)	0.68 (17.3)	0.11 (2.8)	0.47 (11.9)	0.25 (6.4)	37	Green
54147			5/16	1.73 (43.9)	0.93 (23.6)	0.68 (17.3)	0.11 (2.8)	0.47 (11.9)	0.38 (9.7)	37	Green
54148			3/8	1.78 (45.2)	0.98 (24.9)	0.68 (17.3)	0.11 (2.8)	0.47 (11.9)	0.38 (9.7)	37	Green
54150			1/2	2.10 (53.3)	1.25 (31.8)	0.76 (19.3)	0.11 (2.8)	0.47 (11.9)	0.50 (12.7)	37	Green
54152-TB	1/0 AWG	1 AWG, #100 Navy #1 Weld 225/24 133/0.0254, 0.389 min.	1/4	1.60 (40.6)	0.65 (16.5)	0.75 (19.1)	0.13 (3.3)	0.52 (13.2)	0.25 (6.4)	42	Pink
54153-TB			5/16	1.83 (46.5)	0.88 (22.4)	0.75 (19.1)	0.13 (3.3)	0.52 (13.2)	0.38 (9.7)	42	Pink
54109			3/8	1.88 (47.8)	0.93 (23.6)	0.75 (19.1)	0.13 (3.3)	0.52 (13.2)	0.38 (9.7)	42	Pink
54155-TB			1/2	2.20 (55.9)	1.25 (31.8)	0.75 (19.1)	0.13 (3.3)	0.52 (13.2)	0.50 (12.7)	42	Pink
256-30695-1383			5/8	2.54 (64.5)	1.50 (38.1)	0.88 (22.4)	0.13 (3.3)	0.52 (13.2)	0.63 (16.0)	42	Pink
54157	2/0 AWG	1/0 AWG, 125 Navy 1/0 Weld 275/24 427/0.0155, 438 min. 133/0.0282	1/4	1.65 (41.9)	0.65 (16.5)	0.83 (21.1)	0.13 (3.3)	0.57 (14.5)	0.25 (6.4)	45	Black
54158			5/16	1.88 (47.8)	0.88 (22.4)	0.83 (21.1)	0.13 (3.3)	0.57 (14.5)	0.38 (9.7)	45	Black
54110			3/8	1.93 (49.0)	0.93 (23.6)	0.83 (21.1)	0.13 (3.3)	0.57 (14.5)	0.38 (9.7)	45	Black
54160			1/2	2.25 (57.2)	1.25 (31.6)	0.83 (21.1)	0.13 (3.3)	0.57 (14.5)	0.50 (12.7)	45	Black
256-30695-131			5/8	2.56 (65.0)	1.50 (38.1)	0.83 (21.1)	0.13 (3.3)	0.57 (14.5)	0.63 (16.0)	45	Black

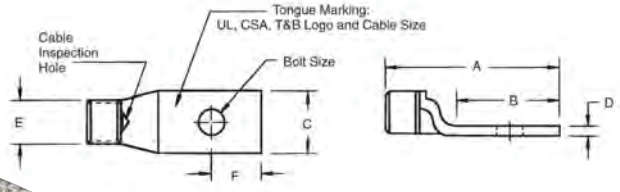
Call your Regional Sales Office for sizes not listed.
Tooling: pp. 116–145 *Die Selector Chart: pp.146–153*

¥ For installations from 16 kV up to 35 kV, consult shielded cable manufacturers for stress relief and insulation requirements.

Connectors for Copper Conductors

One-Hole Lugs – Standard Barrel Certified to 600V and Recommended up to 35 kV¥ *(Continued)*





Material: High-Conductivity Wrought Copper

Finish: Electro Tin Plate

CAT. NO.	WIRE SIZE		Bolt Size	Dimensions in. (mm)						Die Code	Die Color
	Code	Flex Class G, H, I, K, M		A	B	C	D	E	F		
54162-TB	3/0 AWG	2/0 AWG, 150 Navy 2/0 Weld 325/24 133/0.0316, 259/0.0227 427/0.0177, 0.500 min.	1/4	1.75 (44.5)	0.65 (16.5)	0.92 (23.4)	0.13 (3.3)	0.63 (16.0)	0.25 (6.4)	50	Orange
54163-TB			5/16	1.98 (50.3)	0.88 (22.4)	0.92 (23.4)	0.13 (3.3)	0.63 (16.0)	0.38 (9.7)	50	Orange
54111			3/8	2.03 (51.6)	0.93 (23.6)	0.92 (23.4)	0.13 (3.3)	0.63 (16.0)	0.38 (9.7)	50	Orange
54165-TB			1/2	2.35 (59.7)	1.25 (31.8)	0.92 (23.4)	0.13 (3.3)	0.63 (16.0)	0.50 (12.7)	50	Orange
54167			1/4	1.90 (48.3)	0.65 (16.5)	1.03 (26.2)	0.14 (3.6)	0.70 (17.8)	0.25 (6.4)	54	Purple
54168	4/0 AWG	3/0 AWG, 200 Navy 3/0 Weld 450/24 703/0.0154, 0.560	5/16	2.13 (54.1)	0.87 (22.1)	1.03 (26.2)	0.14 (3.6)	0.70 (17.8)	0.38 (9.7)	54	Purple
54112			3/8	2.18 (55.4)	0.93 (23.6)	1.03 (26.2)	0.14 (3.6)	0.70 (17.8)	0.38 (9.7)	54	Purple
54170			1/2	2.50 (63.5)	1.25 (31.8)	1.03 (26.2)	0.14 (3.6)	0.70 (17.8)	0.50 (12.7)	54	Purple
256-30695-1174			3/4	2.86 (72.6)	1.56 (39.6)	1.03 (26.2)	0.14 (3.6)	0.70 (17.8)	0.75 (19.1)	54	Purple
58161		4/0 Weld 550/24 130/0.0399 259/0.0286 66 min.	1/4	2.23 (56.6)	0.78 (19.8)	1.25 (31.8)	0.15 (3.8)	0.79 (20.1)	0.38 (9.7)	62	Yellow
58162			5/16	2.33 (59.2)	0.88 (22.4)	1.25 (31.8)	0.15 (3.8)	0.79 (20.1)	0.38 (9.7)	62	Yellow
58163			3/8	2.38 (60.5)	0.93 (23.6)	1.25 (31.8)	0.15 (3.8)	0.79 (20.1)	0.38 (9.7)	62	Yellow
58165			1/2	2.76 (70.1)	1.25 (31.8)	1.25 (31.8)	0.15 (3.8)	0.79 (20.1)	0.50 (12.7)	62	Yellow
58166			5/8	3.03 (77.0)	1.58 (40.1)	1.25 (31.8)	0.15 (3.8)	0.79 (20.1)	0.83 (21.1)	62	Yellow
54172-TB	250 kcmil	4/0 250 Navy 0.629 min.	1/4	2.00 (50.8)	0.65 (16.5)	1.13 (28.7)	0.14 (3.6)	0.77 (19.6)	0.50 (12.7)	62	Yellow
54173			5/16	2.23 (56.6)	0.88 (22.4)	1.13 (28.7)	0.14 (3.6)	0.77 (19.6)	0.38 (9.7)	62	Yellow
54174			3/8	2.28 (57.9)	0.93 (23.6)	1.13 (28.7)	0.14 (3.6)	0.77 (19.6)	0.38 (9.7)	62	Yellow
54113			1/2	2.60 (66.0)	1.25 (31.8)	1.13 (28.7)	0.14 (3.6)	0.77 (19.6)	0.50 (12.7)	62	Yellow
58168		250 Weld 650/24 = 262 kcmil 259/0.0311, 703/0.0189	1/2	2.70 (68.6)	1.25 (31.8)	1.25 (31.8)	0.15 (3.8)	0.85 (21.6)	0.50 (12.7)	66	White
54178	300 kcmil	250 kcmil 300 Navy 0.660	5/16	2.33 (59.2)	0.88 (22.4)	1.25 (31.8)	0.15 (3.8)	0.85 (21.6)	0.38 (9.7)	66	White
54179			3/8	2.43 (61.7)	0.93 (23.6)	1.25 (31.8)	0.15 (3.8)	0.85 (21.6)	0.38 (9.7)	66	White
54114			1/2	2.70 (68.6)	1.25 (31.8)	1.25 (31.8)	0.15 (3.8)	0.85 (21.6)	0.50 (12.7)	66	White
54181			5/8	3.03 (77.0)	1.58 (40.1)	1.25 (31.8)	0.15 (3.8)	0.85 (21.6)	0.75 (19.1)	66	White
58171		300 Weld, 259/0.034 427/0.0265, 889/0.0183 775/24 = 313 kcmil 0.719	1/2	2.85 (72.4)	1.25 (31.8)	1.36 (34.5)	0.18 (4.6)	0.93 (23.6)	0.50 (12.7)	71	Red
256-30695-112	350 kcmil	350 Navy 0.719	3/8	2.90 (73.7)	1.25 (31.8)	1.36 (34.5)	0.18 (4.6)	0.93 (23.6)	0.50 (12.7)	71	
54115			1/2	2.85 (72.4)	1.25 (31.8)	1.36 (34.5)	0.18 (4.6)	0.93 (23.6)	0.50 (12.7)	71	Red
54183			5/8	3.21 (81.5)	1.28 (32.5)	1.36 (34.5)	0.18 (4.6)	0.93 (23.6)	0.75 (19.1)	71	Red
58174		350 Weld, 259/0.0368 427/0.0285 889/0.0201	1/2	3.35 (85.1)	1.25 (31.8)	1.61 (40.9)	0.22 (5.6)	1.09 (27.7)	0.50 (12.7)	76	Blue
54116	400 kcmil	300 kcmil 400 Navy, 0.757	1/2	3.20 (81.3)	1.25 (31.8)	1.41 (35.8)	0.17 (4.3)	0.96 (24.4)	0.50 (12.7)	76	Blue
54185			5/8	3.53 (89.7)	1.58 (40.1)	1.41 (35.8)	0.17 (4.3)	0.96 (24.4)	0.75 (19.1)	76	Blue

Call your Regional Sales Office for sizes not listed.
Tooling: pp. 116–145 *Die Selector Chart: pp.146–153*
¥ For installations from 16 kV up to 35 kV, consult shielded cable manufacturers for stress relief and insulation requirements.

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 16/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 015 **Referencing** 262726
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : HUBBELL + INTERMATIC

Descriptions / comments

Wiring device + photocell

Comments of Professionnal :

- Please also provide cover plates, Refer to 26 27 26 2.3
- Switches to be 20A rated, (26 27 26 2.1.1)

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb 17, 2023

DILLON CONSULTING

Switches, Single Pole
15A, 120-277V AC
Specification Grade Commercial Switch

HUBBELL

Features

- Thread cleaning captive mounting screw
- Abuse resistant nylon toggle
- Steel, zinc plated bridge is corrosion resistant



Ordering Information

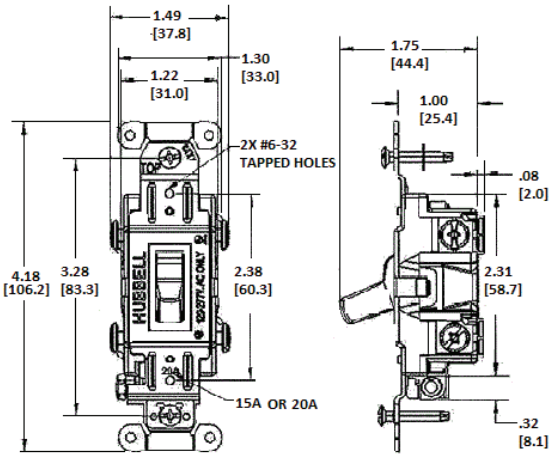
Description	Toggle Color	UPC	Catalog Number
Toggle, side wired only	Ivory	783585901053	CS115I

Listings

UL Listed
CSA Certified
Fed. Spec. W-S-896

Specifications

Top Material	Thermoplastic, Gray
Base Material	Thermoplastic, Black
Toggle Material	Nylon
Contacts	Silver Alloy
Terminal Screws	Brass
Auto Grounding Mounting Bridge	Zinc Plated Steel
Ground Screw	Brass (Green)



Performance

Electrical

Dielectric Voltage	Withstands 1500V AC minimum for 1 minute
Max. Continuous Current	15A
Max. Working Voltage	277V AC
Overload	Minimum 4.8 times rated current for 100 cycles
Temperature Rise	30°C maximum at rated current

Mechanical

Terminal Accommodations	#14 AWG min. - #10 AWG max. solid and stranded copper wire only

Environmental

Flammability	UL 94V-2
Operating Temperature	Max. continuous: 75°C; Min. continuous: -40°C without impact

Online Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL®
Wiring Device-Kellems

Switches, Three Way
15A, 120-277V AC
Specification Grade Commercial Switch

HUBBELL

Features

- Thread cleaning captive mounting screw
- Abuse resistant nylon toggle
- Steel, zinc plated bridge is corrosion resistant



Ordering Information

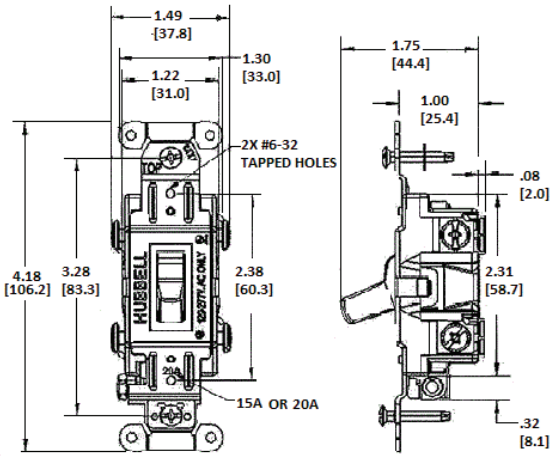
Description	Toggle Color	UPC	Catalog Number
Toggle, side wired only	Ivory	783585902050	CS315I

Listings

UL Listed
CSA Certified
Fed. Spec. W-S-896

Specifications

Top Material	Thermoplastic, Gray
Base Material	Thermoplastic, Black
Toggle Material	Nylon
Contacts	Silver Alloy
Terminal Screws	Brass
Auto Grounding Mounting Bridge	Zinc Plated Steel
Ground Screw	Brass (Green)



Performance

Electrical

Dielectric Voltage	Withstands 1500V AC minimum for 1 minute
Max. Continuous Current	15A
Max. Working Voltage	277V AC
Overload	Minimum 4.8 times rated current for 100 cycles
Temperature Rise	30°C maximum at rated current

Mechanical

Terminal Accommodations	#14 AWG min. - #10 AWG max. solid and stranded copper wire only

Environmental

Flammability	UL 94V-2
Operating Temperature	Max. continuous: 75°C; Min. continuous: -40°C without impact

Online Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL®
Wiring Device-Kellems

Switches, Double Pole
15A, 120-277V AC
Specification Grade Commercial Switch

HUBBELL

Features

- Thread cleaning captive mounting screw
- Abuse resistant nylon toggle
- Steel, zinc plated bridge is corrosion resistant



Ordering Information

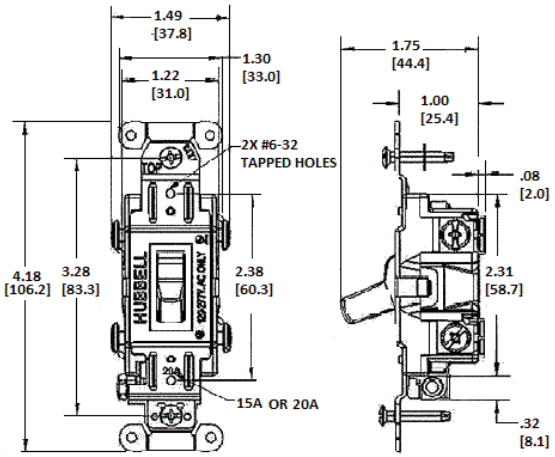
Description	Toggle Color	UPC	Catalog Number
Toggle, back and side wired	Ivory	783585153834	CSB215I

Listings

UL Listed
CSA Certified
Fed. Spec. W-S-896

Specifications

Top Material	Thermoplastic, Gray
Base Material	Thermoplastic, Black
Toggle Material	Nylon
Contacts	Silver Alloy
Terminal Screws	Brass
Auto Grounding Mounting Bridge	Zinc Plated Steel
Ground Screw	Brass (Green)



Performance

Electrical

Dielectric Voltage	Withstands 1500V AC minimum for 1 minute
Max. Continuous Current	15A
Max. Working Voltage	277V AC
Overload	Minimum 4.8 times rated current for 100 cycles
Temperature Rise	30°C maximum at rated current

Mechanical

Terminal Accommodations	#14 AWG min. - #10 AWG max. solid and stranded copper wire only

Environmental

Flammability	UL 94V-2
Operating Temperature	Max. continuous: 75°C; Min. continuous: -40°C without impact

Online Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

HUBBELL®
Wiring Device-Kellems

Switches, Double Pole
20A, 120-277V AC
Specification Grade Commercial Switch

HUBBELL

Features

- Thread cleaning captive mounting screw
- Abuse resistant nylon toggle
- Steel, zinc plated bridge is corrosion resistant



Ordering Information

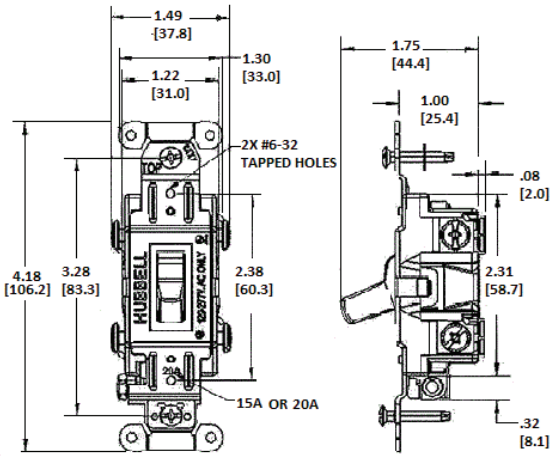
Description	Toggle Color	UPC	Catalog Number
Toggle, back and side wired	Ivory	783585154138	CSB220I

Listings

UL Listed
CSA Certified
Fed. Spec. W-S-896

Specifications

Top Material	Thermoplastic, Gray
Base Material	Thermoplastic, Black
Toggle Material	Nylon
Contacts	Silver Alloy
Terminal Screws	Brass
Auto Grounding Mounting Bridge	Zinc Plated Steel
Ground Screw	Brass (Green)



Performance

Electrical

Dielectric Voltage	Withstands 1500V AC minimum for 1 minute
Max. Continuous Current	20A
Max. Working Voltage	277V AC
Overload	Minimum 4.8 times rated current for 100 cycles
Temperature Rise	30°C maximum at rated current

Mechanical

Terminal Accommodations	#14 AWG min. - #10 AWG max. solid and stranded copper wire only

Environmental

Flammability	UL 94V-2
Operating Temperature	Max. continuous: 75°C; Min. continuous: -40°C without impact

Online Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL®
Wiring Device-Kellems

Straight Blade Devices
15A, 125V, 2 Pole, 3 Wire Grounding
HBL® Extra Heavy Duty Specification Grade Duplex Receptacle

HUBBELL

Features

- Back wired ground terminal allows faster, easier installation
- One-piece brass integral ground strap
- Finder Groove Face
- Deep body design with circuit ID face



Ordering Information

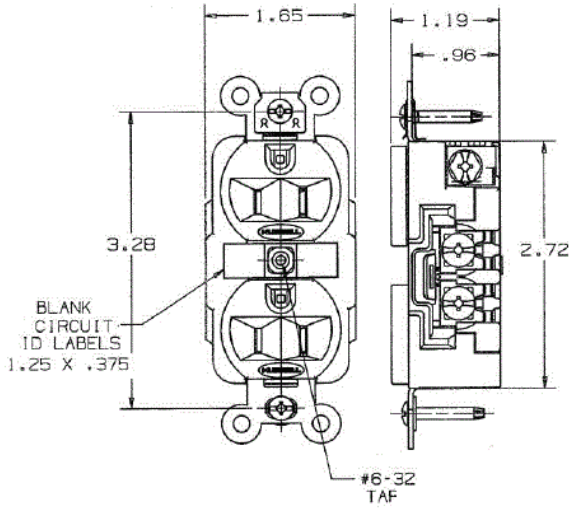
Description	Device Color	UPC	Catalog Number
Deep body design with circuit ID face. Back and side wired.	Ivory	783585435169	HBL5262I

Listings

UL Listed to UL498 File No. E2186
Certified to CSA 22.2, No. 42 File 285
Fed. Spec. W-C-596
NEMA® WD-6 Compliant

Specifications

Face	Nylon
Base	PBT
By-Pass Power Contacts	.036". (.9) Brass
Ground Contacts	.031 in. (.8) Brass
Clamping Plate	Nickel plated brass
Terminal Screws	Plated brass
Mounting Strap	.050 in. (1.3) Brass
Automatic Self-grounding Clip	Stainless steel
Mounting Screws	Zinc plated steel



Performance

Electrical

Current Interrupting	Certified for current interrupting at full rated current
Dielectric Voltage	Withstands 2,000V minimum

Mechanical

Product Identification	Ratings are a permanent part of the device
Terminal Accommodation	#14-#10 AWG copper stranded or solid conductor only
Terminal Identification	Terminals identified in accordance with UL 498 and CSA

Environmental

Flammability	Top: UL 94V-2, Base: UL 94V-0
Operating Temperatures	Maximum continuous 75°C; minimum -40°C (w/o impact)

Accessories

Wallplate or Weatherproof Cover Duplex Opening

Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL® Wiring Device-Kellems

Straight Blade Devices
20A, 125V, 2 Pole, 3 Wire Grounding
HBL® Extra Heavy Duty Specification Grade Duplex Receptacle

HUBBELL

Features

- Back wired ground terminal allows faster, easier installation
- One-piece brass integral ground strap
- Finder Groove Face
- Deep body design with circuit ID face



Ordering Information

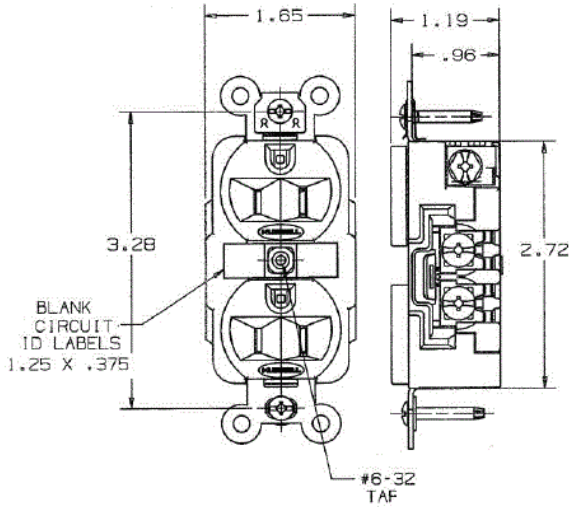
Description	Device Color	UPC	Catalog Number
Deep body design with circuit ID face. Back and side wired.	Ivory	783585435282	HBL5362I

Listings

UL Listed to UL498 File No. E2186
Certified to CSA 22.2, No. 42 File 285
Fed. Spec. W-C-596
NEMA® WD-6 Compliant

Specifications

Face	Nylon
Base	PBT
By-Pass Power Contacts	.036". (.9) Brass
Ground Contacts	.031 in. (.8) Brass
Clamping Plate	Nickel plated brass
Terminal Screws	Plated brass
Mounting Strap	.050 in. (1.3) Brass
Automatic Self-grounding Clip	Stainless steel
Mounting Screws	Zinc plated steel



Performance

Electrical

Current Interrupting	Certified for current interrupting at full rated current
Dielectric Voltage	Withstands 2,000V minimum

Mechanical

Product Identification	Ratings are a permanent part of the device
Terminal Accommodation	#14-#10 AWG copper stranded or solid conductor only
Terminal Identification	Terminals identified in accordance with UL 498 and CSA

Environmental

Flammability	Top: UL 94V-2, Base: UL 94V-0
Operating Temperatures	Maximum continuous 75°C; minimum -40°C (w/o impact)

Accessories

Wallplate or Weatherproof Cover Duplex Opening

Resources

Customer Use Drawing
eCatalog

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL® Wiring Device-Kellems

Ground Fault Products
Commercial Standard GFCI Receptacles

HUBBELL

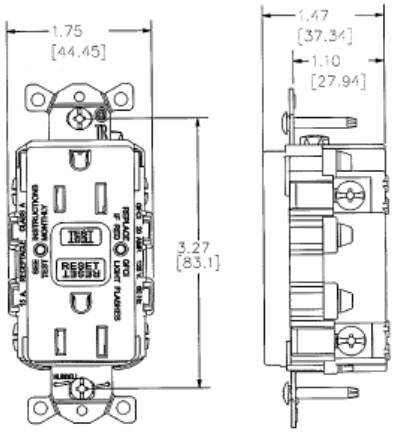
Features

- Patented AUTOGUARD® self test technology
- Internal back wiring clamp and guide for quick and secure termination
- Triple wipe construction



Ordering Information

Description	Color	UPC	Catalog Number
15A, 125V, Style Line®, AUTOGUARD® self test GFCI receptacle, flush face, back and side wired, multiple drive screws	Ivory	883778122033	GFRST15I



Listings

UL Listed - Canadian and U.S.
Meets ADA Standards
Meets all NEC® requirements
CSA Certified
NEMA® WD-6 Compliant

Specifications

Face	Nylon
Base	Nylon
Power Contacts	Brass
Ground Contacts	Brass
Mounting Strap	Zinc plated steel
Mounting Screws	Zinc plated steel

Online Resources

Customer Use Drawing
eCatalog
Installation Instructions

Dimensions in Inches (mm)

HUBBELL®
Wiring Device-Kellems

Twist-Lock® Devices

20A, 3 Phase 250V AC, 3 Pole, 4 Wire Grounding

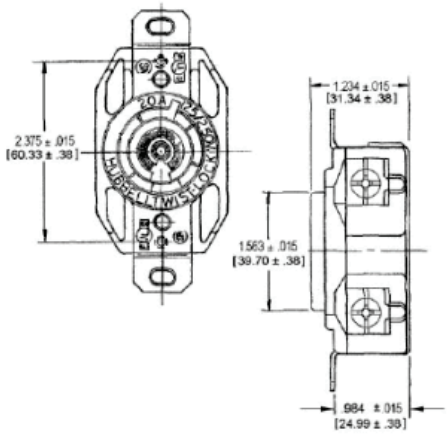
Single Flush Receptacle

HUBBELL



20A 3Ø 250V AC
NEMA L15-20R
UL/CSA
3 HP





Features

- Wire restraint recess for both back and side wiring, greatly reduces the possibility of loosening the terminal connection
- Face color coding by voltage facilitates locating and mating of proper devices
- All-brass mounting and grounding system provides a lower resistance ground path and greater resistance to corrosion than steel mounting systems

Ordering Information

Description	Device Color	UPC	Catalog Number
Nylon face, back and	Black	783585235752	HBL2420

Listings

Listed to UL 498
Fed.Spec. W-C-596
Certified to CSA C22.2 No.42

Specifications

Face	Nylon
Base	Glass-Reinforced thermoplastic polyester (RTP)
Contacts	Brass
Terminal Screws	#10 - 32 Brass
Mounting Strap	Brass

Performance

Electrical

Current Interrupting	Certified for current interrupting at full rated current
Dielectric Voltage	Withstands 2,000V minimum

Mechanical

Terminal Accommodation	#16 AWG - #8 AWG solid or stranded copper wire only.
Terminal Identification	Terminals identified in accordance with UL 498

Environmental

Flammability	V2 or better per UL94/CSA 22.2 No.0.17
Moisture Resistance	IP20 Suitability
Operating Temperatures	Maximum Continuous 75°C; Minimum -40°C (w/o impact)

Online Resources

Customer Use Drawing
eCatalog
Installation Instructions

Accessories

Plug	**HBL2421**
Wallplate or Weatherproof Cover	**1.60" Opening**
Switched Enclosure	**SETL3**

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

HUBBELL®
Wiring Device-Kellems

Twist-Lock® Devices

30A, 3 Phase 250V AC, 3 Pole, 4 Wire Grounding

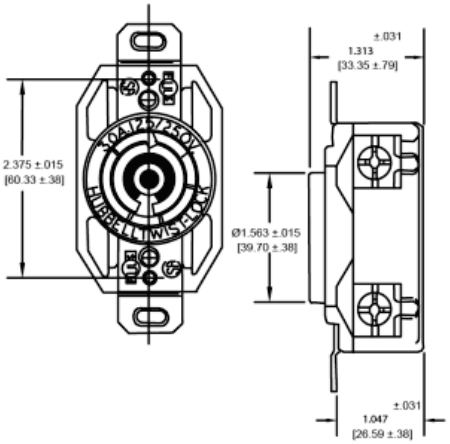
Single Flush Receptacle

HUBBELL



30A 3Ø 250V AC
NEMA L15-30R
UL/CSA
3 HP





Features

- Wire restraint recess for both back and side wiring, greatly reduces the possibility of loosening the terminal connection
- Face color coding by voltage facilitates locating and mating of proper devices
- All-brass mounting and grounding system provides a lower resistance ground path and greater resistance to corrosion than steel mounting systems

Ordering Information

Description	Device Color	UPC	Catalog Number
Nylon face, back and	Black	783585236131	HBL2720

Listings

Listed to UL 498
Fed.Spec. W-C-596
Certified to CSA C22.2 No.42

Specifications

Face	Stainless steel
Base	Glass-Reinforced thermoplastic polyester (RTP)
Contacts	Brass
Terminal Screws	#10 - 32 Brass
Mounting Strap	Brass

Performance

Electrical

Current Interrupting	Certified for current interrupting at full rated current
Dielectric Voltage	Withstands 2,000V minimum

Mechanical

Terminal Accommodation	#16 AWG - #8 AWG solid or stranded copper wire only.
Terminal Identification	Terminals identified in accordance with UL 498

Environmental

Flammability	V2 or better per UL94/CSA 22.2 No.0.17
Moisture Resistance	IP20 Suitability
Operating Temperatures	Maximum Continuous 75°C; Minimum -40°C (w/o impact)

Online Resources

Customer Use Drawing
eCatalog
Installation Instructions

Accessories

Plug	**HBL2721**
Wallplate or Weatherproof Cover	**1.60" Opening**
Switched Enclosure	**SETL3**

Dimensions in Inches (mm)

HUBBELL®
Wiring Device-Kellems

Project:

Location:

Product Type:

Contact/Phone:

Model #:

K4200 Series

Stem and Swivel Mounting

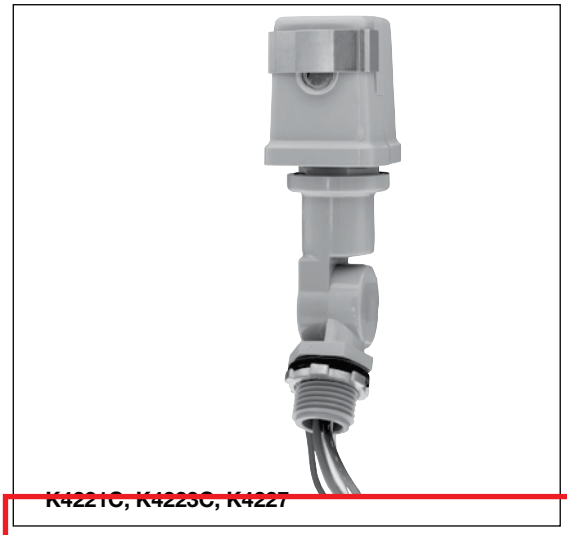
The K4200 Series Photo Controls feature stem and swivel mounting, with thermal-type controls. Thermal-type photo controls, which are available in single or multi-voltage models, provide dusk-to-dawn lighting control and a delay action, which eliminates loads switching OFF due to car headlights, and lightning. The thermal-type controls feature a cadmium sulfide photocell and a sonic-welded polycarbonate case and lens to seal out moisture. The design utilizes a dual temperature compensating bi-metal and composite resistor for reliable long life operation over ambient temperature extremes.

Features

- Cadmium sulfide photocell
- Sonic welded polycarbonate housing and lens to seal out moisture
- Delay action eliminates load switching OFF due to car headlights, and lightning
- 6" leads
- K4251 and K4253 Models are designed for spot/flood type fixtures
- Controls come with a washer gasket and locking nut

Ratings

Size:	½" – 14" threaded swivel, 1 9/16" (4.0 cm) square, 5 ½" (14.0 cm) long; Model K4235 and K4236 – 6¼" (15.9 cm) High, 3" (7.6 cm) diameter Models K4251 and K4253 – 4" (10.2 cm) High, 1 ⅜" (3.5 cm) Diameter
Color:	Gray
Electrical Rating:	See table on back
Activation:	1-5 FC ON; 3-15 FC OFF (photo eye clear on models with shield)
Power Consumption:	Averages under 2 Watts
Operating Temperature:	-40°F to 158°F (-40°C to 70°C)
Shipping Weight:	K4200 Series – .21 lb (.09 kg) K4235 and K4236 – .45 lb (.20 kg)
Agency Listing:	See table on back



K4221C, K4223C, K4227



K4251, K4253



K4235, K4236

K4200 Series

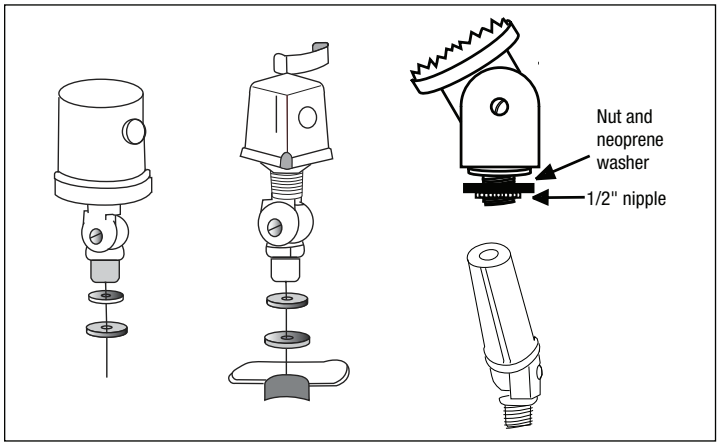
Model Number	Tungsten (Watts)	Ballast (VA)	Tungsten (Amps)	Ballast (Amps)	Volts AC	Agency Listing
K4221C	1800	1000	15	8.3	120	UL
K4223C	3100-4150	1700-2300	15	8.3	208-277	CSA, C/US
K4227	5205	2880	15	8.3	347	CSA, C/US
K4235*	7200	4000	15	8.3	480	
K4236C	1800-4150	1000-2300	15	8.3	120-277	UL, CSA
K4251	1800	1000	15	8.3	120	CSA, C/US
K4253	3100-4150	1700-2300	15	8.3	208-277	CSA, C/US

*Not Agency certified

Specification

The photo control shall provide automatic switching for outdoor lighting loads. The control shall be a thermal design with built-in delay to ensure that the controlled lighting does not switch off due to ambient light or light striking the photocell. The photo control shall have a rating of _____Watts and _____Amps tungsten and _____Watts and _____Amps ballast based on agency testing at 50% power factor for ballast loads. The photo control shall provide switching for nominal voltage fixtures of _____Volts ±10% to accommodate fluctuations in supply voltage. The photo control mounting shall be the stem and swivel type with all necessary mounting hardware and instructions. The photo control housing shall be constructed of high impact polycarbonate. The photo control components shall consist of a resistor, dual temperature compensating bi-metal blades, snap action contact blades, chemically treated/polymer encapsulated cadmium sulfide photocell and silver alloy contacts to ensure reliable operation. The photo control shall be 100% factory tested for function within specified light levels. The photo control shall be agency certified (unless otherwise noted) and tested accordingly. The photo control shall function over temperature range of -40°F to 158°F (-40°C to 70°C). The photo control shall be Intermatic model _____(See Model Numbers Listed).

Diagrams



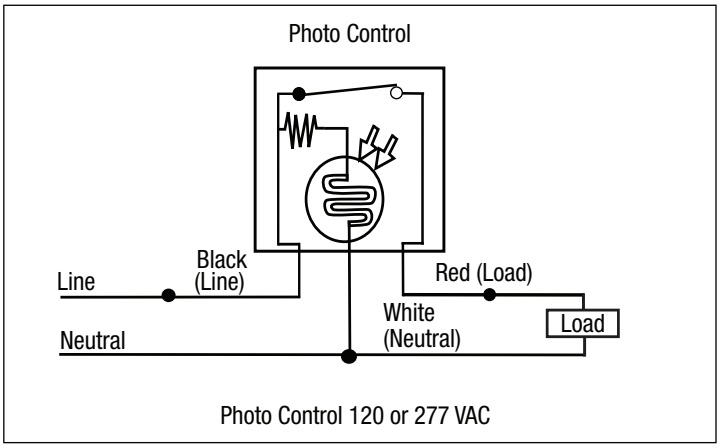


Photo Control 120 or 277 VAC

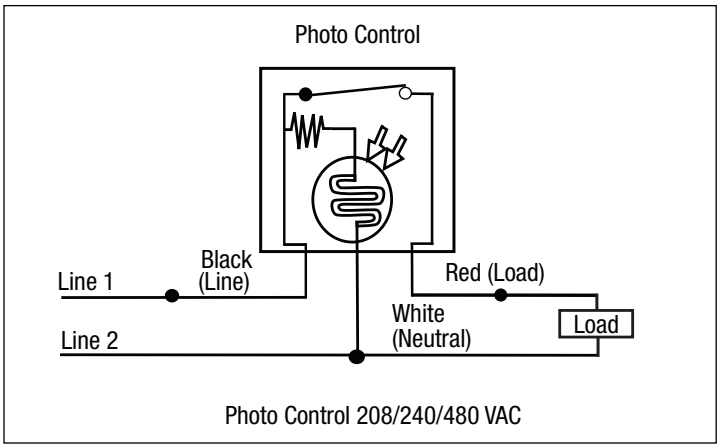


Photo Control 208/240/480 VAC

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑎᓱᒪᓕᕆᔨᒃ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 09/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 016 **Referencing** nothing
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : THERMON

Descriptions / comments

Heating cable

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

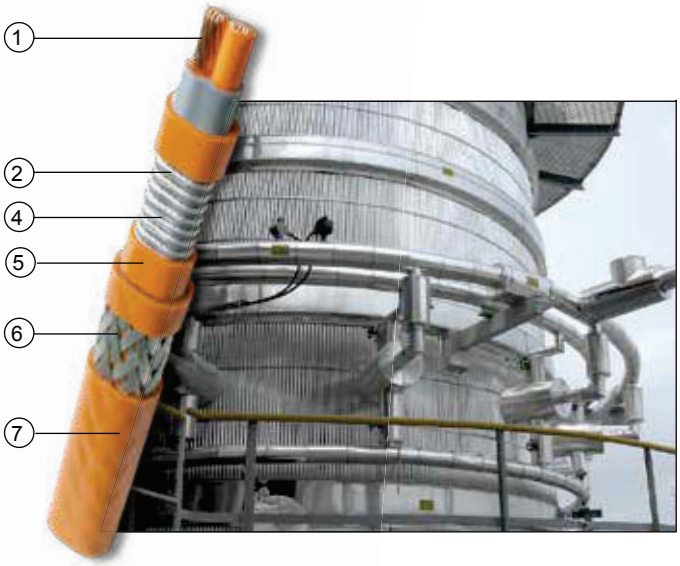
X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb 10, 2023

DILLON CONSULTING

PRODUCT SPECIFICATIONS

FP PARALLEL CONSTANT WATT HEATING CABLE



APPLICATION

FP parallel resistance constant watt heating cables are designed to provide freeze protection or process temperature maintenance to piping, tanks and equipment. The parallel resistance configuration allows the cable to be cut to length and terminated in the field with easy-to-use Thermon supplied kits.

FP cables provide consistent and reliable heat outputs regardless of circuit length. FP cables are not subject to the inrush current associated with self-regulating heating cables, therefore the need for over sizing power distribution equipment is eliminated.

FP cables are approved for use in ordinary (nonclassified) areas, hazardous (classified) areas, and Zones 1 and 2 classified areas.

RATINGS

Available watt densities ..... 2.5, 5, 8, 10 w/ft (8, 16, 26, 33 w/m)
Supply voltages ..... 120/240 Vac nominal [1]
Max. maintenance temperature ..... 150°F (65°C)
Max. continuous exposure temperature
Power-off ..... 400°F (204°C)
Minimum installation temperature ..... -76°F (-60°C)
Minimum bend radius
@ 5°F (-15°C) ..... 0.38” (10 mm)
@ -76°F (-60°C) ..... .75” (19 mm)
T-rating [2]
Based on stabilized design [3] ..... T3 to T6

Notes

1. Additional operating voltages are shown on page 2.
2. T-rating per internationally recognized testing agency guidelines.
3. Thermon heating cables are approved for the listed T-ratings using the stabilized design method. This enables the cable to operate in hazardous areas without limiting thermostats. The T-rating may be determined using CompuTrace® Electric Heat Tracing Design Software or contact Thermon for design assistance.

CONSTRUCTION

1 Copper bus wires (12 AWG)
2 Nichrome heating element
3 Heater bus connection (not shown)
4 Fiberglass overlay
5 Fluoropolymer dielectric Insulation
6 Tinned copper braid
7 Fluoropolymer overjacket provides additional protection for cable and braid where exposure to chemicals or corrosives is expected.

BASIC ACCESSORIES

Thermon offers system accessories designed specifically for rapid, trouble-free installation of Thermon heating cables.

All cables require a connection kit to comply with approval requirements. Information on accessories to complete a heater circuit installation can be found in the “Heating Cable Systems Accessories” product specification sheet (Form TEP0010C).

Form TEP0016C-0315 • © Thermon Manufacturing Co. • Printed in U.S.A. • Information subject to change.

FP PARALLEL CONSTANT WATT HEATING CABLE

POWER OUTPUT

The rated power output of FP cables is shown in the table below for the voltages indicated. The heating zone length is the distance between bus connections and represents the minimum circuit length for this type of cable. For maximum possible circuit lengths, see Circuit Breaker Sizing to the right. Contact Thermon before connecting cable to voltages other than those shown in this chart.

Catalog Number	Service Voltage	Power Output w/ft (m)	Zone Length in (cm)
FP 2.5-1	120	2.5 (8)	30 (76)
FP 5-1	120	5 (16)	24 (61)
FP 8-1	120	8 (26)	24 (61)
FP 10-1	120	10 (33)	24 (61)
FP 2.5-2	240	2.5 (8)	54 (137)
	277	3.3 (11)	54 (137)
FP 5-2	208	3.8 (12)	40 (102)
	240	5 (16)	40 (102)
	277	6.7 (22)	40 (102)
FP 8-2	208	6 (20)	40 (102)
	240	8 (26)	40 (102)
	277	10.7 (35)	40 (102)
FP 10-2	208	7.5 (25)	30 (76)
	240	10 (33)	30 (76)
FP 10-4	480	10 (33)	54 (137)
FP 5-5	575	5 (16)	84 (213)
FP 10-5	575	10 (33)	66 (168)

CIRCUIT BREAKER SIZING AND TYPE

Maximum circuit lengths for FP cables at rated voltages are shown below. Breaker sizing should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code.

The National Electrical Code and Canadian Electrical Code require ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for specific ground-fault protection requirements.

Catalog Number	Service Voltage	Max. Circuit Length ft (m)	Current Draw amps/ ft (m)
FP 2.5-1	120	605 (184)	0.021 (0.069)
FP 5-1	120	410 (125)	0.042 (0.138)
FP 8-1	120	310 (94)	0.067 (0.220)
FP 10-1	120	270 (82)	0.083 (0.272)
FP 2.5-2	240	1215 (370)	0.010 (0.033)
	277	1200 (366)	0.012 (0.039)
FP 5-2	208	840 (256)	0.018 (0.059)
	240	825 (251)	0.021 (0.069)
	277	805 (245)	0.024 (0.079)
FP 8-2	208	645 (197)	0.029 (0.095)
	240	625 (190)	0.033 (0.108)
	277	605 (184)	0.038 (0.125)
FP 10-2	208	565 (172)	0.036 (0.118)
	240	545 (166)	0.042 (0.138)
FP 10-4	480	1090 (332)	0.021 (0.069)
FP 5-5	575	1600 (488)	0.009 (0.029)
FP 10-5	575	1310 (399)	0.017 (0.056)

CERTIFICATIONS/APPROVALS

FM Approvals
Ordinary Locations
Hazardous (Classified) Locations
- Class I, Division 2, Groups A, B, C and D
- Class II, Division 2, Groups F and G
- Class III, Divisions 1 and 2
- Class I, Zones 1 and 2, AEx e II

Underwriters Laboratories Inc.
Ordinary Locations
Hazardous (Classified) Locations
- Class I, Division 2, Groups A, B, C and D
- Class II, Division 2, Groups F and G
- Class III, Divisions 1 and 2

Canadian Standards Association
Ordinary Locations
Hazardous (Classified) Locations
- Class I, Divisions 1 and 2, Groups A, B, C and D
- Class II, Divisions 1 and 2, Groups E, F and G
- Ex e II

PETK

Power and End Termination Kit

INSTALLATION PROCEDURES

- ☐ **PETK-1D** **for BSX, RSX, VSX-HT**
- ☐ **PETK-2D** **for KSX, HTSX, USX**
- ☒ **PETK-3D** **for HPT, FP**

Order separately to be used in conjunction with Thermon connection kits



THERMON

PETK

Receiving, Storing and Handling

1. Inspect materials for damage incurred during shipping.
2. Report damages to the carrier for settlement.
3. Identify parts against the packing list to ensure the proper type and quantity has been received.
4. Store in a dry location.

PETK Power and End Termination Kits (per cable)	
PETK-1D	for BSX, RSX, VSX-HT
PETK-2D	for KSX, HTSX, USX
PETK-3D	for HPT, FP

Kit Contents



Item	Qty.	Description
1	1	RTV Tube
2	1	Power Connection Boot
3	1	End Cap
4	1	Tape Strip (PETK-3D Only)
5	1	End Termination Caution Label
6	1	GRW-G Grommet (For PETK-3D Terminator kits only)

Installation Precautions

- To minimize the potential for arcing and fire caused by product damage or improper installation use ground-fault protection. The National Electrical Code (NEC) and Canadian Electrical Code (CEC) require ground-fault protection of equipment for each branch circuit supplying electric heat tracing.
- Installation must comply with Thermon requirements and be installed in accordance with the NEC, CEC, or any other applicable national and local codes.
- Component approvals and performance ratings are based on the use of Thermon specified parts only.
- De-energize all power sources before opening enclosure.
- Keep ends of heating cable and kit components dry before and during installation.
- Individuals installing these products are responsible for complying with all applicable safety and health guidelines. Proper Personal Protective Equipment (PPE) should be utilized during installation. Contact Thermon if you have any additional questions.

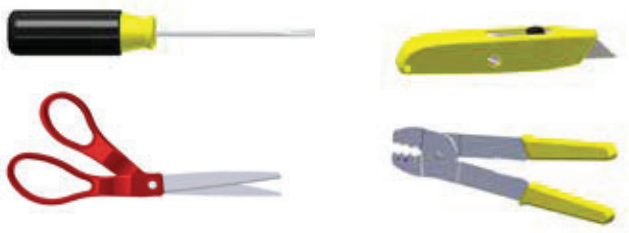
PETK Certifications/Approvals[1]

FM Approved

Note:

1. These sets have been evaluated as components of Thermon's Approved connection kits, such that the area use ratings depend on the rating of the connection kits.

Tools Required



IMPORTANT!

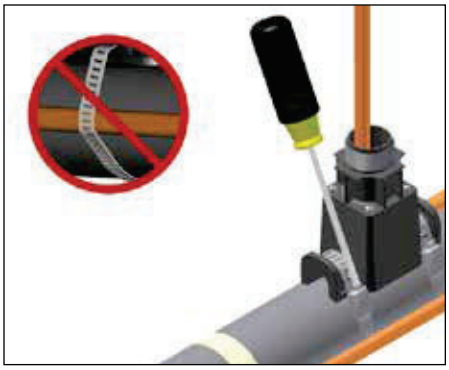
Heating cable must be properly installed within expediter assembly and mounted to pipe prior to terminating with PETK kit.

See Terminator and/or TracePlus Installation Instructions for expediter mounting details.



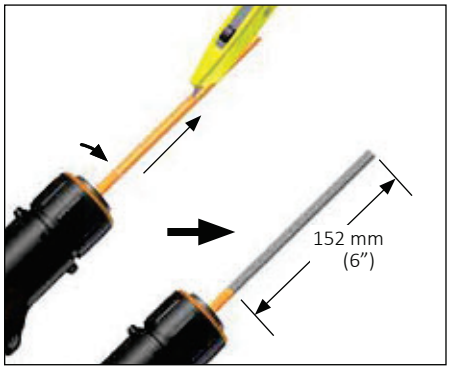
Terminator: Route cable through base entry and mount expediter to pipe using pipe band. Do not band over cable.

Note: For HPT and FP cable exchange grommet in Terminator with GRW-G provided in PETK-3D.



TracePlus: Route cable through base entry and mount expediter to pipe using pipe band. Do not band over cable.

Step 1: Remove Heating Cable Overjacket and Separate Metallic Braid to Form Pigtail



1a. Cut and remove heating cable overjacket.

Do not cut metallic braid.

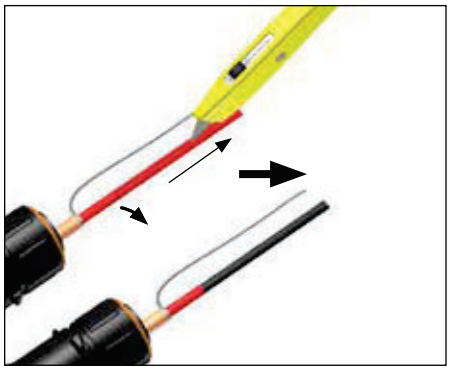


1b. Separate braid strands at edge of overjacket and pull cable through opening in braid.

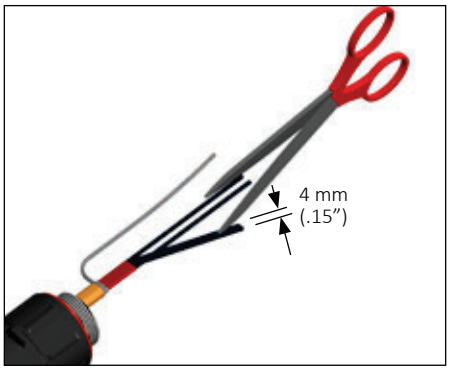


1c. Twist braid into a pigtail. Trim ends of braid.

Step 2: Matrix Removal for BSX, RSX, HTSX, KSX, USX, and VSX-HT Cables

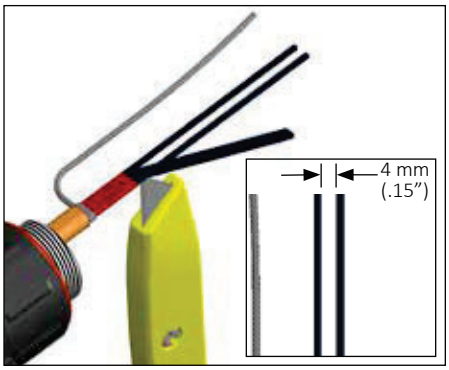


2a. Cut and remove primary insulation jacket (BSX and RSX cables only).



2b. Cut a 4 mm strip of conductive matrix between the conductors.

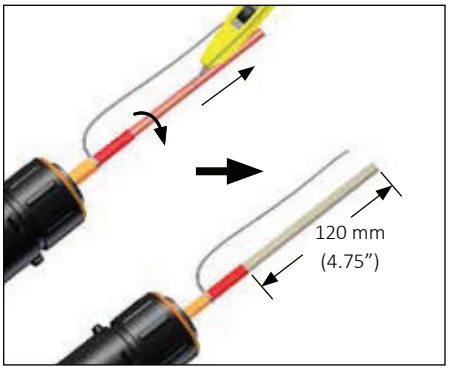
Do not cut bus wire strands.



2c. Cut and remove the 4 mm matrix strip.

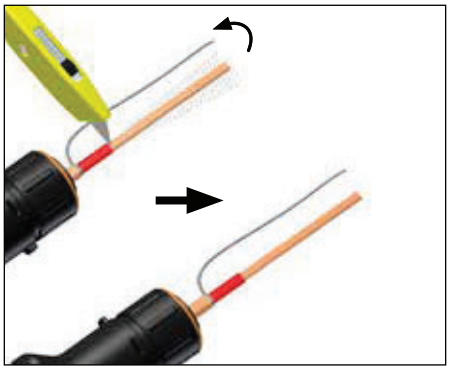
PETK

Step 2: Heating Element Removal for HPT and FP Cables

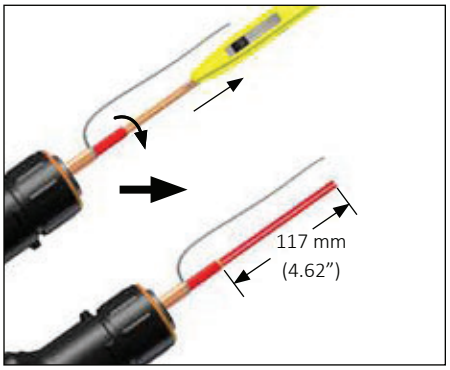


2a. Cut and remove primary insulation jacket.

NOTE: Bus connection must be no more than 50 mm (2") from pipe as addressed in connection kit instructions.



2b. Cut and remove fiberglass overlay and heating element. Push any remaining heating element wire under the primary insulation jacket.



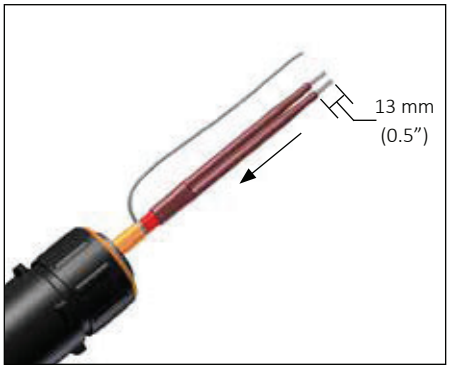
2c. Cut and remove pairing jacket.

Do not cut bus wire insulation.

Step 3: Install Power Boot on Heating Cables

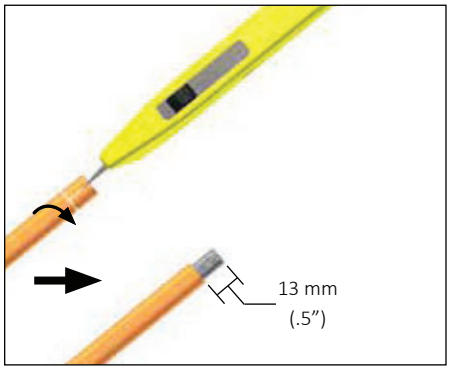


3a. Apply RTV sealant to cable to cover distance of at least 3 mm and slide boot onto the end of the cable.

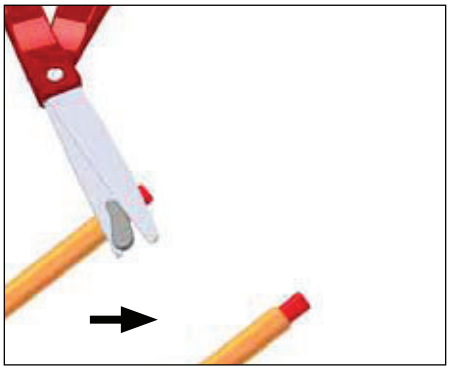


3b. Slide boot onto the end of the cable. Expose 13 mm (0.5") of bus wire.

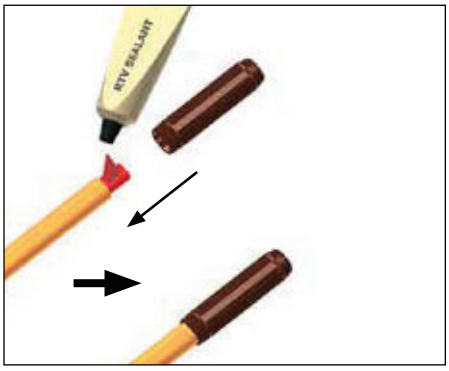
Step 4: End Termination for BSX, RSX, HTSX, KSX, USX, and VSX-HT



4a. Cut and remove heating cable overjacket.

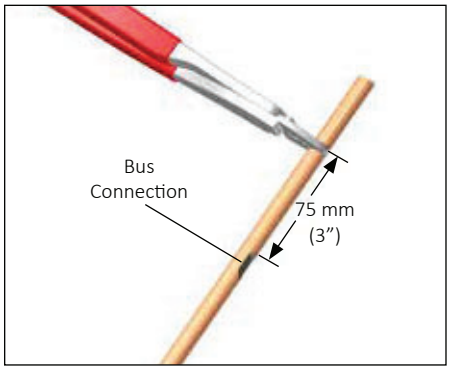


4b. Trim away exposed braid from cable.

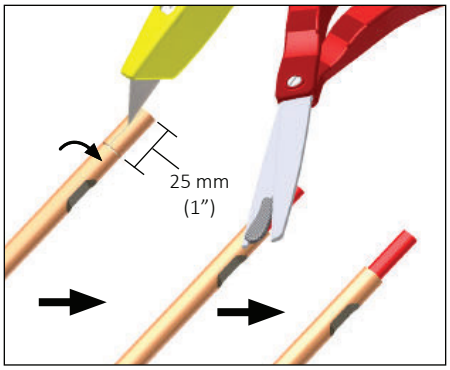


4c. Fill the end cap with RTV sealant and apply a circumferential bead to cable [minimum of 3 mm (0.12") wide]. Slide end cap onto end of cable.

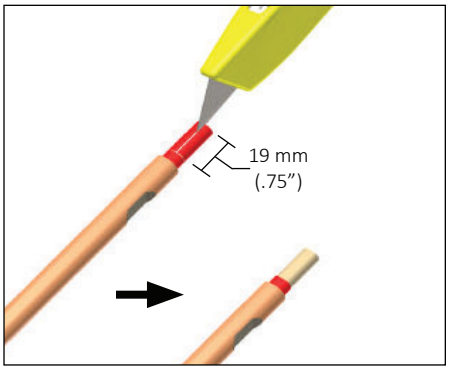
Step 4: End Termination for HPT and FP



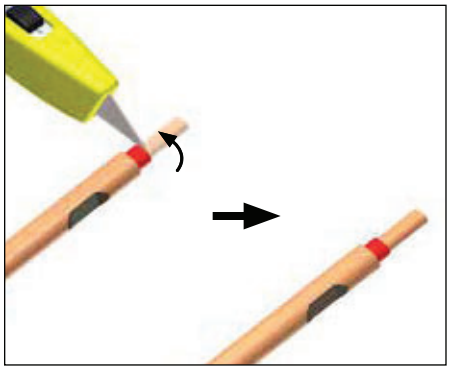
4a. Trim the cable 75 mm (3") from the bus connection.



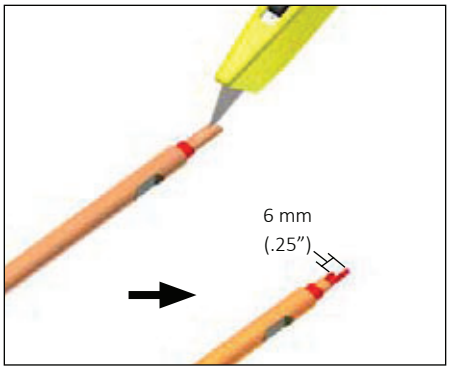
4b. Cut and remove overjacket and trim away exposed braid from cable.



4c. Cut and remove primary insulation jacket.

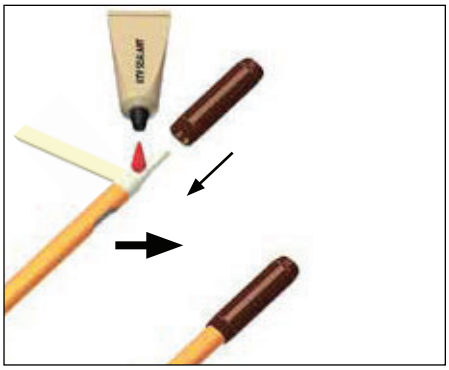


4d. Cut and remove fiberglass overlay and heating element. Push any remaining heating element wire under the primary insulation jacket.



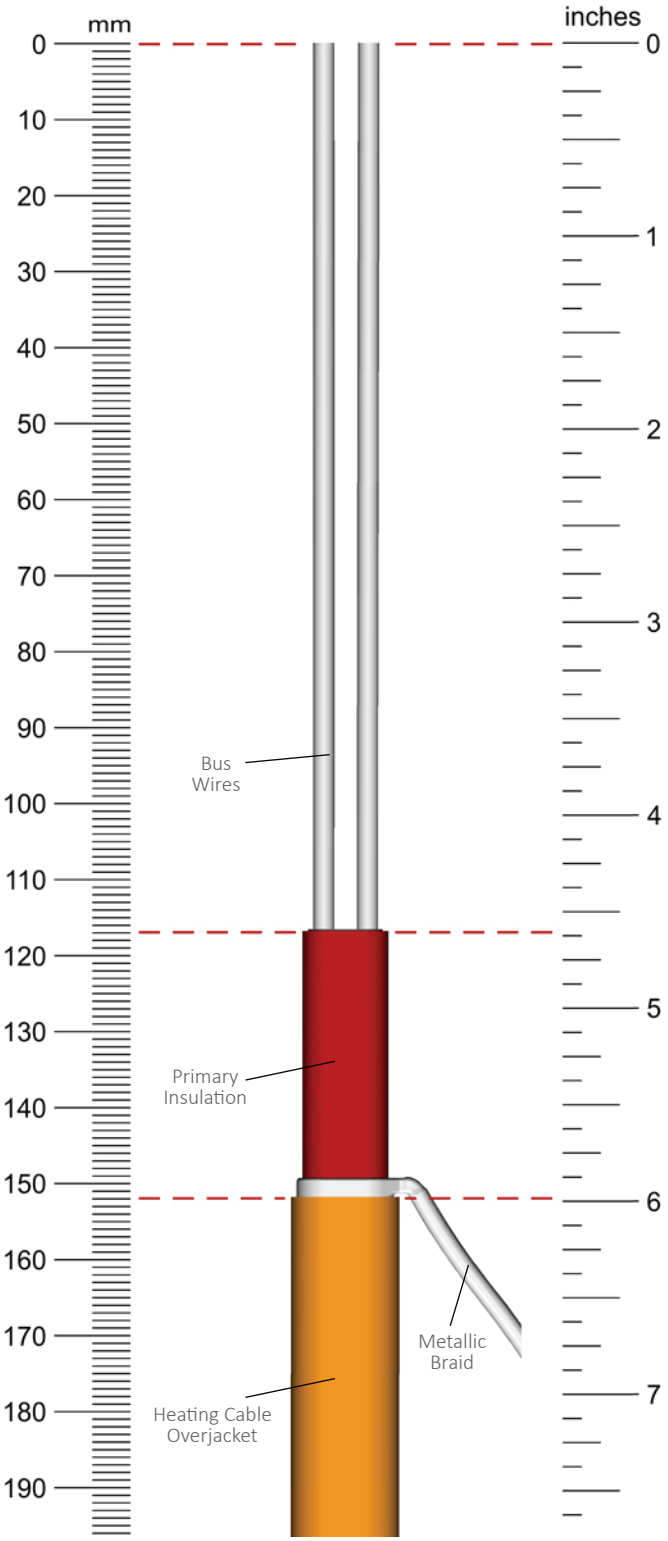
4e. Cut and remove pairing jacket. Stagger cut one of the bus wires.

Do not cut bus wire strands.

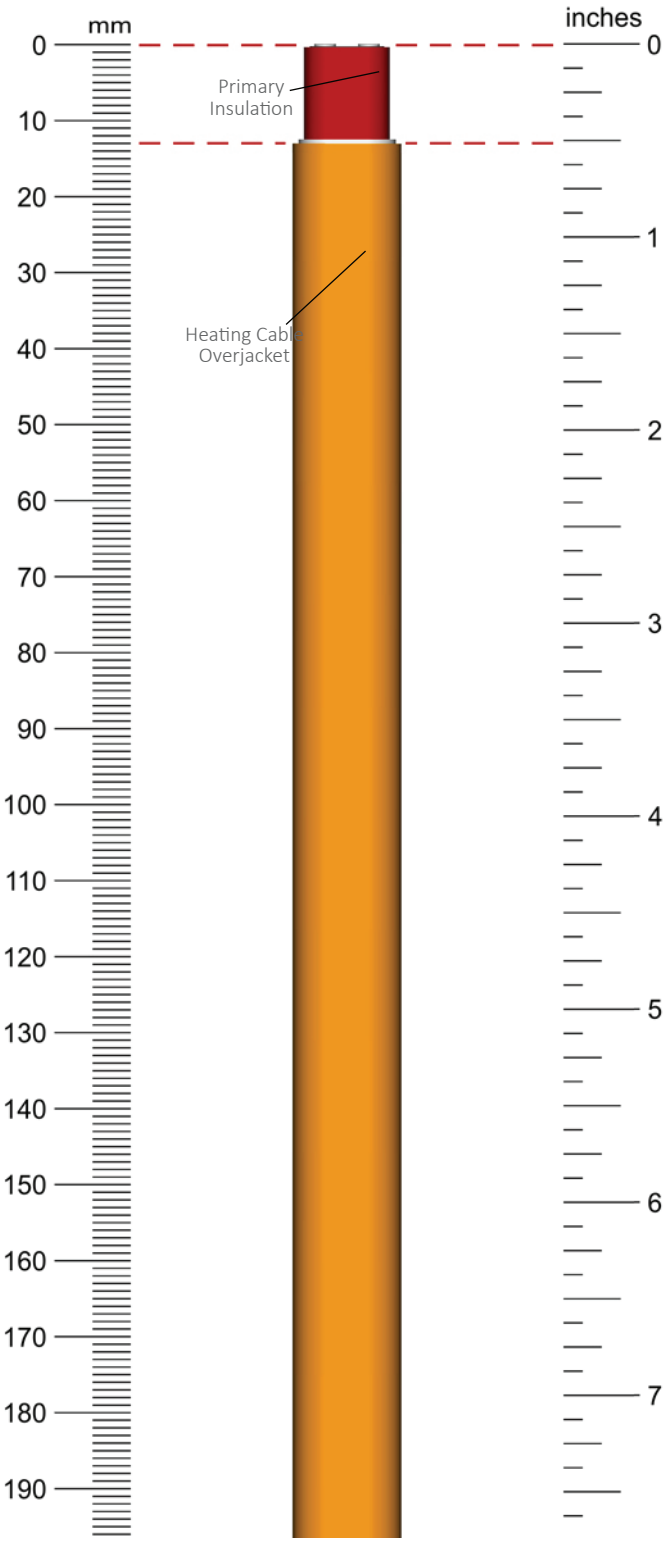


4f. Tape bus wires individually and then together. Continue taping to cover overjacket. Fill the end cap with RTV sealant and apply a circumferential bead to cable [minimum of 3 mm (0.12") wide]. Slide end cap onto end of cable.

Cable Take-off for BSX, RSX, HTSX, KSX, USX, and VSX-HT



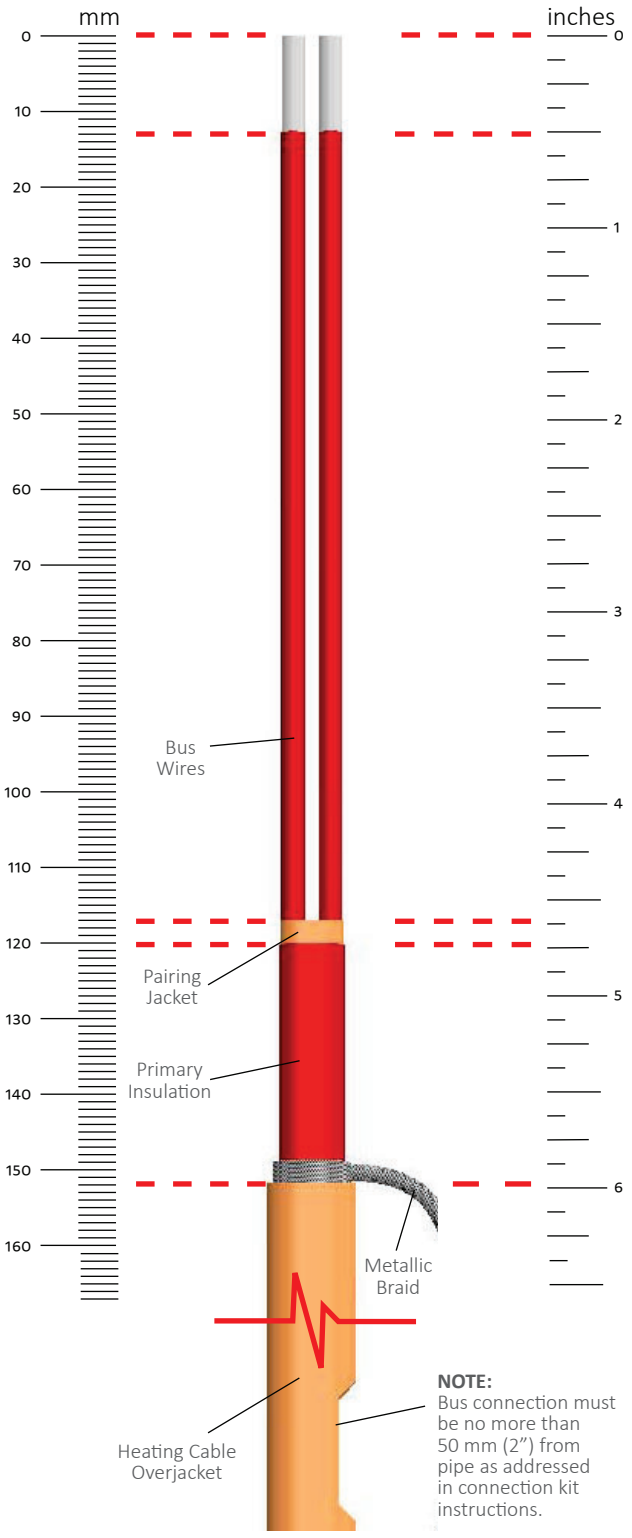
For Power Connecton Boot Termination



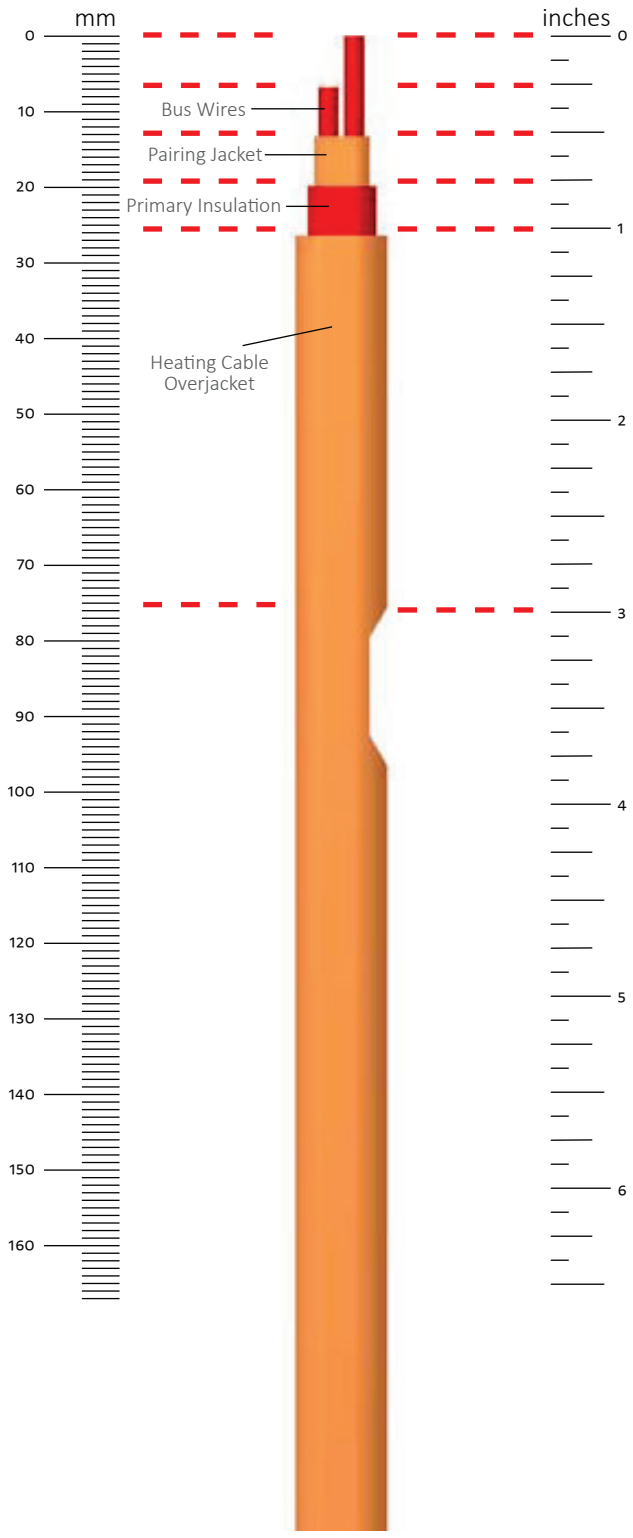
For End Cap Termination

NOTE: Images may not be printed to scale.

Cable Take-off for HPT and FP Heating Cables



For Power Connection Boot Termination



For End Cap Termination

NOTE: Images may not be printed to scale.

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TRACON® MODEL GPT-130

SINGLE-POINT HEAT-TRACE CONTROL THERMOSTAT

PACKING LIST

QTY.	PART NO.	DESCRIPTION
1	25170	TRACON MODEL GPT 130 Single-Point General Purpose Heat-Trace Control
1	25076	Temperature Sensor
1	25299	GPT 130 Quick-Reference Installation Guide (this document)
-	25166	TRACON MODEL GPT-130 Installation & Operation Manual
		Available online at: networketi.com/product-manuals

PRIOR TO INSTALLATION

1. Read these installation instructions and manual prior to beginning installation.
2. Install this device only if you are a qualified electrician trained to perform such work.
3. Before beginning installation, lay out the system components, the heat trace cable and the temperature probe in their approximate locations to visualize the system and evaluate exact component and junction box placement, as well as required cable and conduit lengths.

INSTALLATION

The GPT 130 Automatic Heat-Trace Control should be installed by a qualified, licensed electrician. Installation must conform to all applicable local and national electrical codes and laws. The unit's NEMA 4X IP66 enclosure allows for indoor or outdoor applications.

The GPT 130 controller has an ambient operating temperature range of −40 °F to 131 °F (−40 °C to 55 °C). To avoid potential internal condensation mount the unit out of direct sunlight.

Install the GPT on a fixed, flat, vertical surface using the unit's mounting flanges. The mounting flanges accommodate 1/4" or 6.3 mm fasteners.

The GPT 130's nonmetallic enclosure has one 1.046" hole for conduit entry; this can hold both power and load wiring.

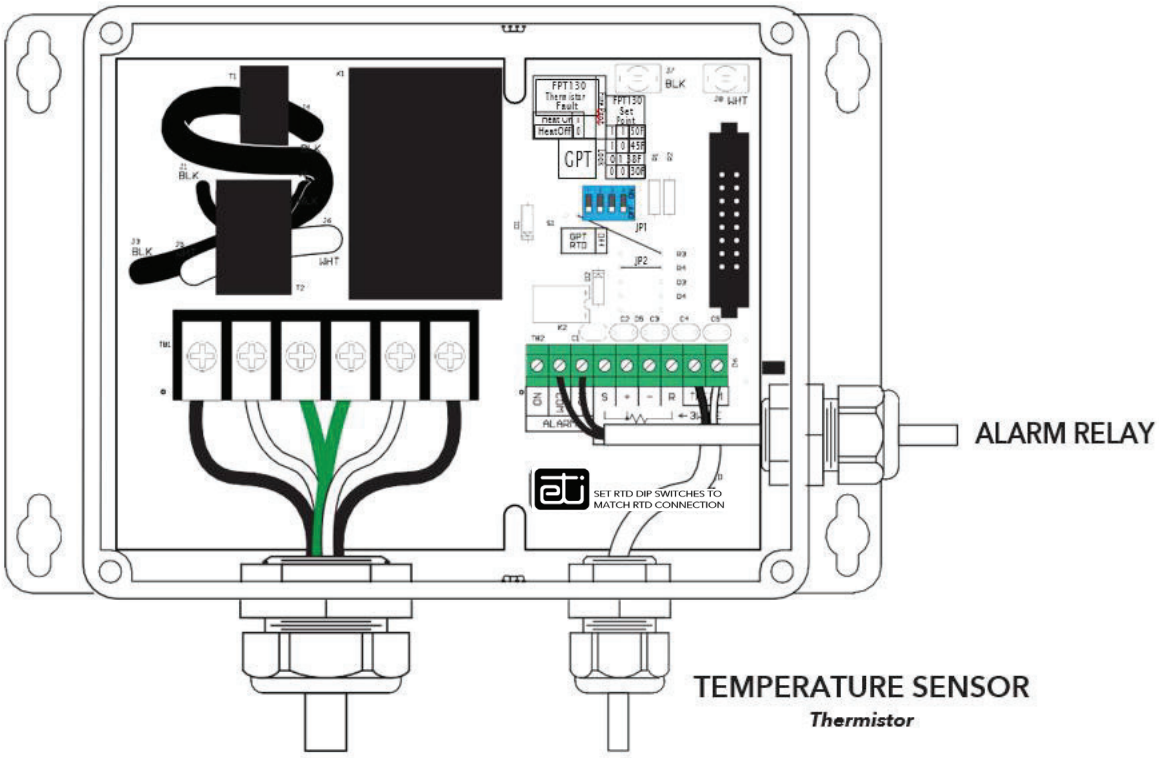
Use only Listed Type 4X IP66 liquid-tight conduit hubs or cable glands. Connect the hub to the conduit system before connecting the hub to the enclosure.

The unit comes with two installed liquid-tight cable glands. One of these fittings is for the temperature sensor cable, and the other is for the alarm relay cable.

The cable glands can accommodate cable diameters 0.08" to 0.24" (2 mm to 6 mm). The temperature sensor may be located up to 2,000' (610m) from the GPT.

There is a removable electrical insulation divider that must be in place when there is power applied to the unit. All leads should be terminated; no unsecured leads should be left inside the wiring compartment.

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Line: BLACK / Line 1
Neutral: WHITE / Line 2
Ground: GREEN

Line: BLACK / Line 1
Neutral: WHITE / Line 2
Ground: GREEN

FIGURE 1. The GPT 130 wiring layout.

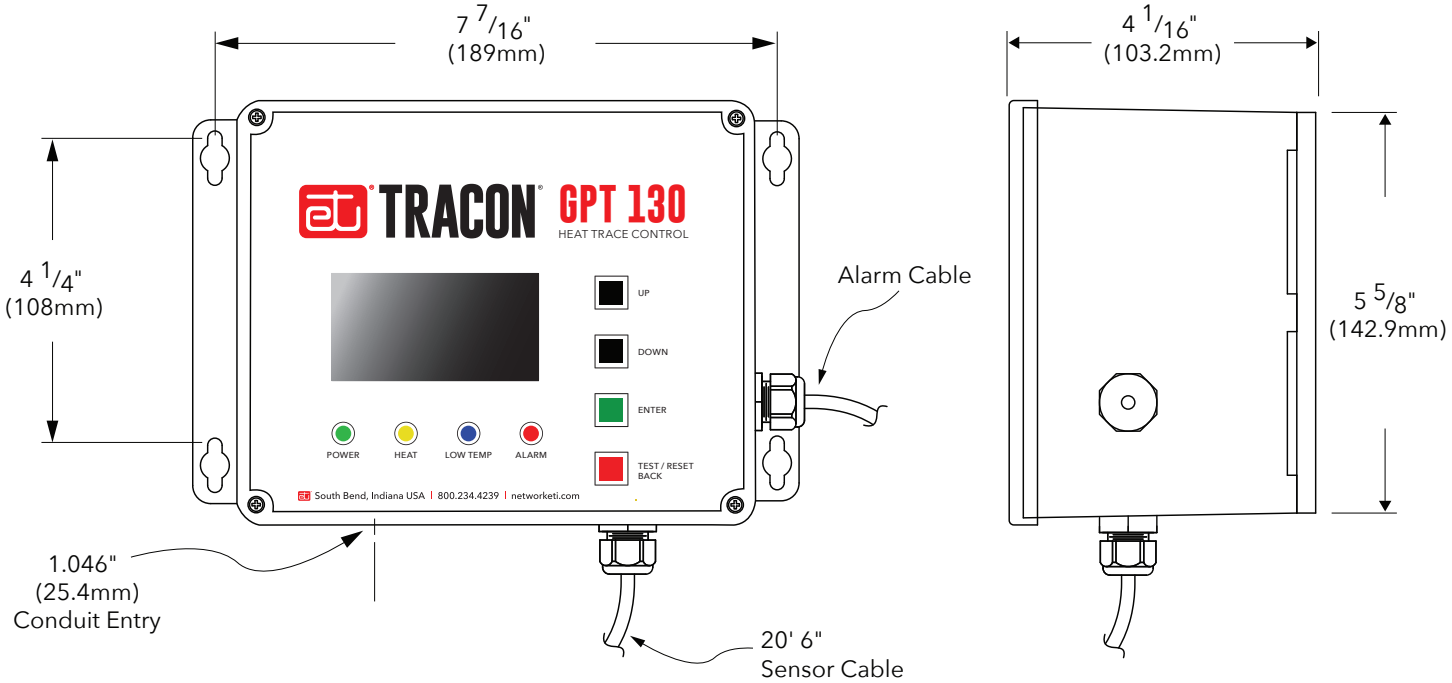


FIGURE 2. Mounting dimensions.

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NOTE: **Perform the following steps with the circuit breaker to the unit OFF. The TRACON GPT 130 is permanently connected equipment and does not have an internal disconnect device. When power is applied, the system will start.**

1. INSTALL THE CONTROL BOX

Use the box itself as a template to determine the mounting hole footprint. Install the box to a solid, stable surface capable of supporting four times the weight of the box, or about 20 pounds. Use all four mounting holes. Install the control box to the wall using heavy-duty 1/4" or 6.3 mm fasteners long enough to fasten the box securely. Do not fully tighten mounting hardware at this time. Leave the mounting hardware loose enough to work the conduit into place. Hardware will be fully tightened following installation of the conduit.

2. CONNECT THE SUPPLY AND LOAD

Feed the Input Supply (Input Power) and the Load (Heater Cable) through the Conduit Entry Hole in the enclosure as shown, then connect the leads, as shown in the Figure 3. Line is black; neutral is white; ground is green.

Note: Both the power and the load require a #10 AWG wire.

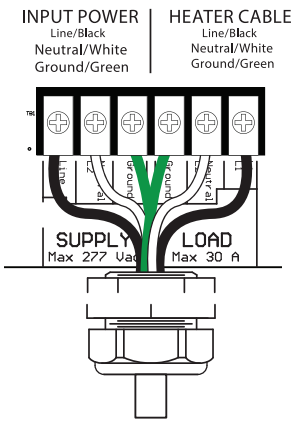


FIGURE 3. Contractor connections.

3. INSTALL THE TEMPERATURE SENSOR

The GPT 130 can use either a thermistor (provided), or a 3-wire RTD sensor. The configuration of the DIP switches must match the type of RTD sensor wiring connection.

Thermistor (25076)

The GPT 130 comes with a thermistor temperature sensor with a 20 ft. jacketed cable that has an operating range of −40 °F to 230 °F (−40 ˚C to 110 ˚C). See the diagram below for proper wiring and DIP switch configuration when using a thermistor sensor. Refer to Figure 4.

RTD

The unit can use an RTD sensor for applications requiring a wider temperature range. The GPT 130 can operate with 3-wire RTD sensors. Refer to Figure 4.

The Thermistor input is NOT affected by the DIP switches.

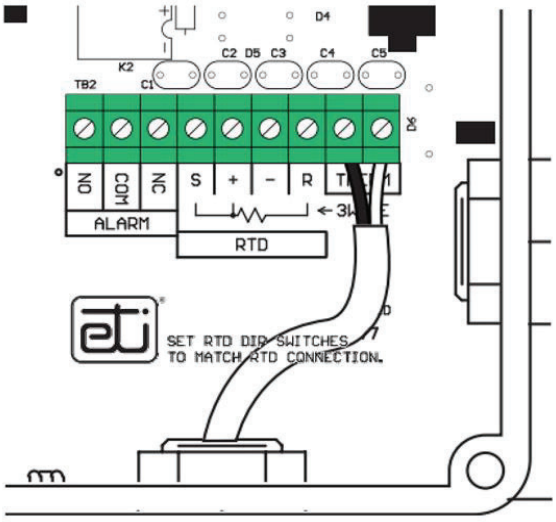


FIGURE 4. Temperature sensor wiring

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4. INSTALL THE EXTERNAL ALARM

An alarm or power-off condition can be communicated by either opening or closing a relay contact. It is important to make the proper alarm relay connections to achieve the desired result. The middle terminal labeled COM (Common) is used in both wiring configurations. Connect one alarm relay lead to the COM terminal. If the system needs a contact to close to signal an alarm or power-off condition, connect the other alarm relay lead to the NC (Normally Closed) terminal.

If the system needs a contact to open to signal an alarm or power-off condition, then connect the other alarm relay lead to the NO (Normally Open) terminal.
If the unit has power, and there are no alarm conditions then the NO and COM terminals will be connected. If the unit loses power or an alarm condition occurs then the NC and COM terminals will be connected.

5. PANEL LOCKOUT

To prevent unauthorized changes of control settings, the second DIP switch can be set to the on position to Lock the settings. With Lock enabled, the control panel will allow viewing but not changing any of the settings; only the °C or °F option can be selected. .

Note: The GPT reads the Lock DIP switch position when the Settings screen is entered. If the switch is changed, you need to re-enter the Settings screen.

6. INSTALL THE CONDUIT AND FULLY TIGHTEN HARDWARE

Install the conduit runs to the control box. Use only Listed Type 4X IP66 liquid-tight conduit hubs. With cabling routed through conduit and conduit is secure, fully tighten the control box mounting hardware and re-assemble control box panels and cover in their original location.

Note: At this point the circuit breaker to the unit can be turned on providing power to the unit.

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7. SETUP AND SETTINGS EDITING

Please refer to the GPT 130 Manual for comprehensive instructions for Setup and Settings Editing.



Pilot Duty

The GPT 130 Automatic Heat-Trace Control with GFEP cannot be used for Pilot Duty applications.

Devoir du pilote

Le thermostat à usage général GPT 130 avec GFEP ne peut pas être utilisé pour les applications Pilot Duty

Resistive Load Usage Only

This product is not for use with Inductive loads. Inductive loads may create nuisance tripping of the Ground-Fault Equipment Protection circuit.

Utilisation de charge résistive uniquement

Ce produit n'est pas destiné à être utilisé avec des charges inductives. Les charges inductives peuvent créer un déclenchement intempestif du circuit de protection de l' équipement contre les défauts à la terre



Abnormal Odor or Smoke

In the event of smoke or a burning or abnormal odor, immediately interrupt power to the unit by turning off the circuit breaker protecting the unit.

Odeur ou fumée anormale

En cas de fumée ou de brûlure ou d'odeur anormale, coupez immédiatement l' alimentation de l'unité en fermant le disjoncteur protégeant l' unité.







Electrical Shock / Fire Hazard

Any installation involving electric heater wiring must be grounded to earth to protect against shock and fire hazard . Suitable ground fault detection and interrupting systems must be in use at all times to reduce shock and fire hazard and to protect equipment.

Electric wiring to heating elements must be installed in accordance with National Electrical Code (NEC)/ Canadian Electrical Code requirements , as well as all other local and applicable electrical codes and any thirdparty standards . This product is intended for commercial and industrial applications . Follow the installation instructions contained in this manual and those provided by the heater manufacturer.

Size the circuit breaker appropriately for the expected load and inrush current. The maximum rated current for the GPT 130 is 30 amps with resistive load.

Heater loads and their controls should not share a circuit branch with other types of equipment . A shared circuit may result in electromagnetic interference that can affect system operation.

Make certain that the heater shield is properly grounded . Failure to do so may result in damage to the equipment or fire.

Following installation and prior to beginning system operation, refer to and perform the Post-Installation Test described in this manual.

Risque de choc électrique / d'incendie

Toute installation impliquant un câblage de chauffage électrique doit être mise à la terre pour se protéger contre les chocs et les risques d 'incendie . Des systèmes appropriés de détection et d'interruption des défauts à la terre doivent toujours être utilisés pour réduire les risques de choc et d'incendie et protéger l'équipement. Le câblage électrique des éléments chauffants doit être installé conformément aux exigences du Code national de l'électricité (NEC) / du Code canadien de l 'électricité ainsi qu'à tous les autres codes électriques locaux et applicables et à toute norme tierce. Ce produit est destiné aux applications commerciales et industrielles . Suivez les instructions d'installation contenues dans ce manuel et celles fournies par le fabricant de l' appareil de chauffage . Dimensionnez le disjoncteur en fonction de la charge et du courant d'appel attendus . Le courant nominal maximum pour le GPT 130 est de 30 ampères avec une charge résistive.

Les charges de chauffage et leurs commandes ne doivent pas partager une branche de circuit avec d' autres types d' équipement . Un circuit partagé peut entraîner des interférences électromagnétiques qui peuvent affecter opération Système. Assurez- vous que le blindage du radiateur est correctement mis à la terre . Ne pas le faire peut endommager l'équipement ou provoquer un incendie.

Après l'installation et avant de commencer le fonctionnement du système, reportez-vous et effectuez le test de post -installation décrit dans ce manuel.

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For assistance, contact Customer Service. Office hours are from 8:00 AM until 5:00 PM ET.

Email: info@networketi.com

Web: networketi.com

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TRACON MODEL GPT 130

SINGLE-POINT GENERAL PURPOSE HEAT-TRACE CONTROL

THE GPT 130

Heat-Trace Control is a single-point microprocessor-based heat-trace control thermostat. It is ideal for applications which require Ground-Fault Equipment Protection (GFEP). Ideal uses include freeze protection, hot water temperature maintenance, grease line trace, tank heating, and other temperature monitoring and control applications.

The GPT 130 Heat-Trace Control operates from the heater's power source. A universal power supply allows the GPT 130 to operate from 100 V ac to 277 V ac, and control a resistive load up to 30 A.

ADJUSTABLE TEMPERATURE SETPOINT AND ALARMS

The temperature setpoint is adjustable from −99.9 °F to 999 °F (−73.3 °C to 537.7 °C) to a tenth degree resolution.

SENSOR INPUTS

The GPT 130 comes with a 100K ohm thermistor temperature sensor with a 20 ft. jacketed cable. The included sensor has an operating range of −40 °F to 230 °F (−40 °C to 110 °C). The GPT 130 can also can also use a 3-wire RTD sensor for systems requiring high-temperature sensing.

PRECISION MONITORING AND CONTROL

The GPT 130 monitors temperature, load current, and ground leakage current. Alarms include high temperature, low temperature, high load current, low load current, ground fault, sensor fault, internal fault, and power fail. These alarms are easy to adjust and observe from the front panel. The GPT 130 can be set to energize or de-energize the heaters during a sensor fault.

GROUND-FAULT EQUIPMENT PROTECTION

The GPT 130 Heat-Trace Control includes integral GFEP. This eliminates the extra expenses associated with having to provide separate GFEP components in the circuit panel. The GPT 130 normally disconnects power immediately when ground fault current exceeds the set value. If it is set to Fire Protect mode, for critical fire protection systems, then it will generate the alarm but power will be maintained to prevent freezing.

AUTOMATIC GFEP CIRCUIT SELF-TEST

To ensure continued safe operation, the GPT 130 performs a self-test of the GFEP circuit when power is first applied, along with a load ground fault test, and this repeats periodically thereafter at an adjustable interval.

For complete information describing its application, installation, and features, please contact Customer Service or check on the web at networketi.com.

SPECIFICATIONS

GENERAL

Certifications	UL 60730–1, UL 1053, CSA E60730–1:13

ENVIRONMENTAL

Area of use	Nonhazardous locations
Operating temperature range	–40 °F to 131 °F (–40 °C to 55 °C)

ENCLOSURE

Dimensions	8 1/8" (W) x 5 1/2" (H) x 4 3/8" (D) 207 mm (W) x 140 mm (H) x 112 mm (D)
Ingress protection	NEMA 4X, IP66
Cover attachment	Polycarbonate cover, plastic screws
Cable entries	Two liquid–tight cable glands installed for sensor and alarm leads, cable diameter 0.08" to 0.24" (2 mm to 6 mm) One 1.046" hole to accommodate a 3/4" conduit fitting for power wiring connection
Material	Polycarbonate
Weight	2.7 lb. (1.22 kg)
Mounting	Wall mount with flanges

WIRING TERMINAL RATINGS

Power	Barrier Strip Terminals for Line, Neutral, and Ground; use 10 AWG wires rated for at least 194 °F (90 °C)
Sensors	Terminal Block, rising cage clamp, 12–28 AWG leads
Alarm relay	Terminal Block, rising cage clamp, 12–28 AWG leads

PARAMETER SETTINGS

Temperature setpoint heat ON	Adjustable –99.9 °F to 999 °F (–73.3 °C to 537.7 °C) Default 38 °F (3.33 °C)
Temperature setpoint heat OFF	Adjustable –99.9 °F to 999 °F (–73.3 °C to 537.7 °C) Default 40 °F (4.44 °C)
Low–temperature alarm threshold	–99.9 °F to 999 °F (–73.3 °C to 537.7 °C) Default 35 °F (–1.7 °C) Disabled
Low–temperature alarm delay	0 s to 3000 s Default 300 s
High–temperature alarm threshold	–99.9 °F to 999 °F (–73.3 °C to 537.7 °C) Default 140 °F (60 °C) Disabled
High–temperature alarm delay	0 s to 3000 s Default 300 s
Low–current alarm threshold	0.0 A to 10.0 A Default 0.1 A Enabled
Low–current alarm delay	0 s to 300 s Default 5 s Enabled
High–current alarm threshold	0.0 A to 55.0 A Default 30.0 A Disabled
High–current alarm delay	0 s to 600 s Default 300 s
Ground fault limit current	1.0 mA to 300.0 mA Default 30 mA
Self–test interval	1 h to 250 h Default 24 h Enabled
Temperature Unit	°F or °C Default °F

USER INTERFACES

Pushbuttons	UP, DOWN, ENTER, TEST / RESET BACK
DIP switches	Panel lockout

REMOTE INTERFACE

Alarm relay	Isolated SPDT 1 AMP Class 2 contact

INDICATORS

Status indicator	Power (Green) Heater (Yellow) Low Temperature (Blue) Summary alarm (Red)
Display	2.7" OLED graphic 128x64 Low temperature
Summary alarm relay reporting	Low temperature High temperature Low load current High load current High ground fault current Stuck relay Sensor fault Internal fault

CONTROL RATINGS

Temperature accuracy	+/– 2 °F (1 °C)

TEMPERATURE SENSORS

Temperature inputs	(Included) Thermistor: 100k ohms at 25 °C, range –40 °F to 230 °F (–40 °C to 110 °C), 20ft Lead (25076) RTD Sensor: Platinum, Alpha = 0.00385, ITS–90, 100 ohms at 0 °C Input supports 3-wire connection Sensor operates at 1 mA

GFEP (GROUND–FAULT EQUIPMENT PROTECTION)

Operation	Continuously tests ground fault current whenever the load is on; also manually and periodically tests equipment ground fault current with each self–test.
Range	Adjustable 1 mA to 300 mA, Default 30 mA
Automatic self–test	Verifies GFEP functionality every 24 hr. and whenever the load is energized

POWER

Supply voltage	100 – 277 V ac 50/60 Hz
Controller power consumption	5 W maximum, 2 W idle
Load rating	30 A, 100 – 277 V ac resistive

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
25170	Tracon MODEL GPT 130 Single-Point General Purpose Heat–Trace Control
25076	Temperature Sensor
25239	TRACON MODEL GPT-130 Data Sheet (this document) available online at: networketi.com/product-manuals

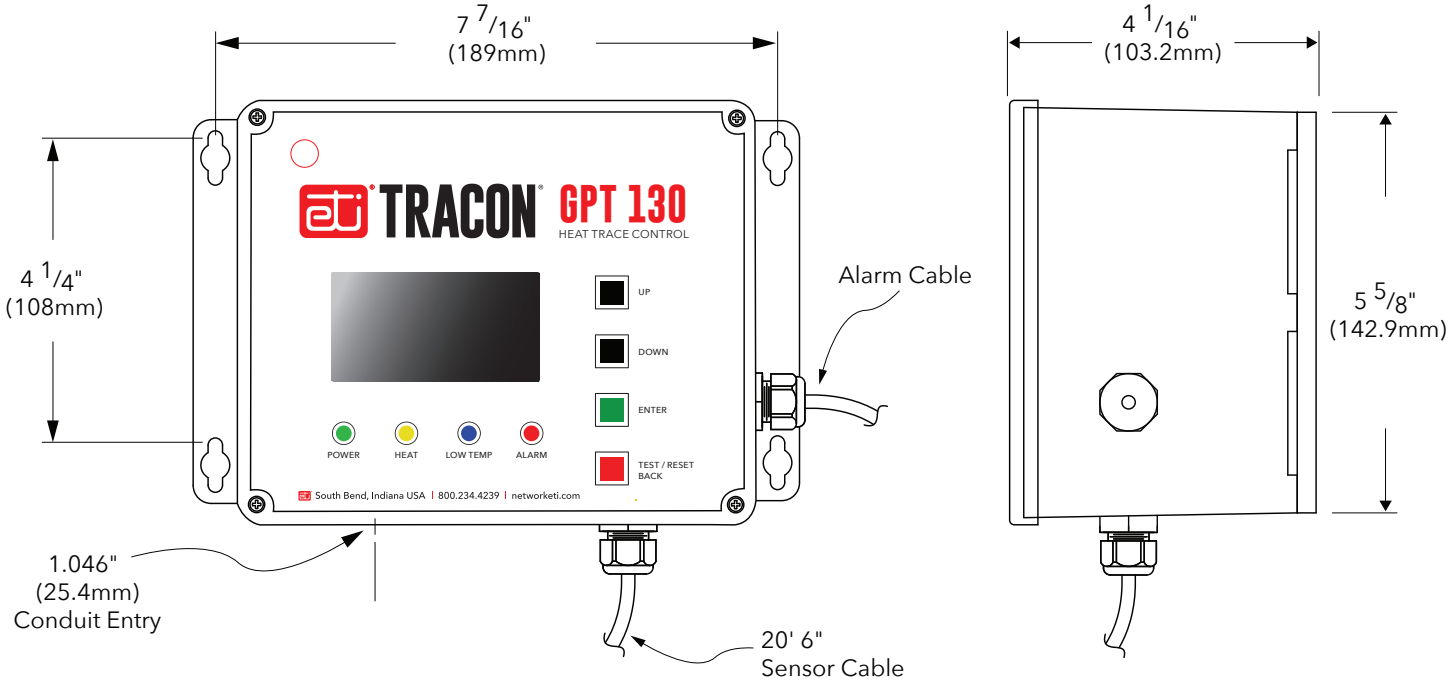
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PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 31/01/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 017 **Referencing** --------
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : SUPERSTRUT + THOMAS & BETTS

Descriptions / comments

cantruss + tray

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

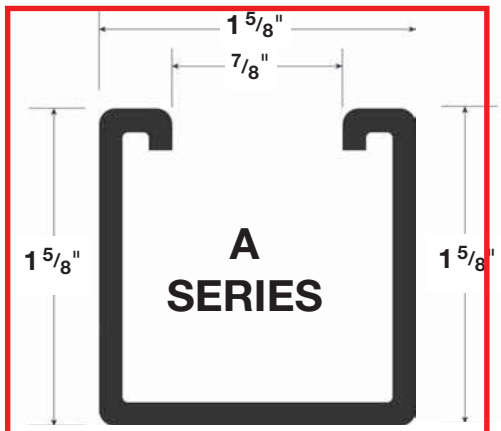
- [x] REVIEWED
- [ ] REVIEWED AS NOTED
- [ ] REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543 (WTS)
BY K.Speidel
DATE Jan 31. 2023

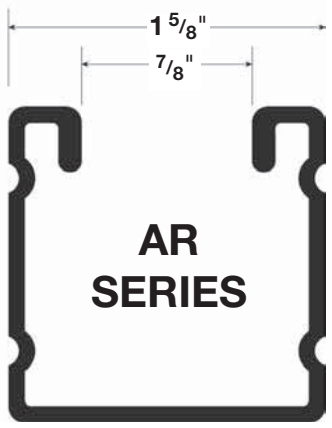
DILLON CONSULTING

Channels at Full Scale

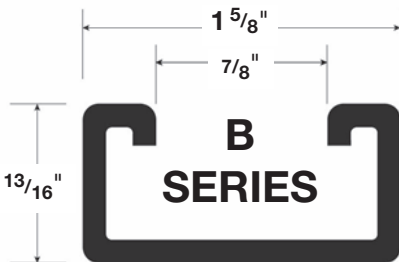
Available in 10 and 20 foot lengths



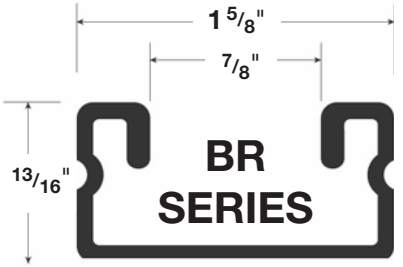
A1200 12 gauge
A1400 14 gauge



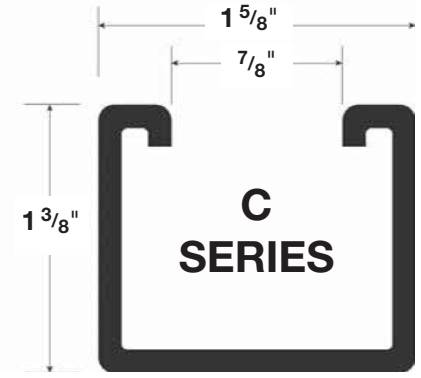
16 gauge only



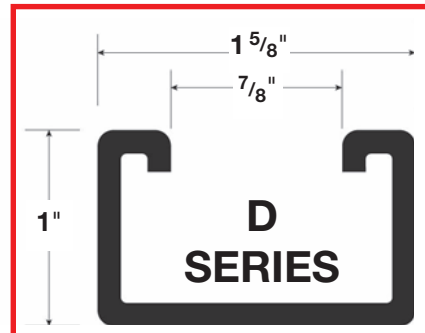
B1200 12 gauge
B1400 14 gauge



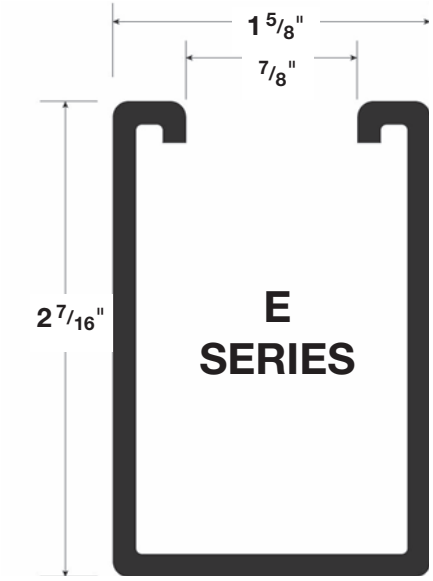
16 gauge only



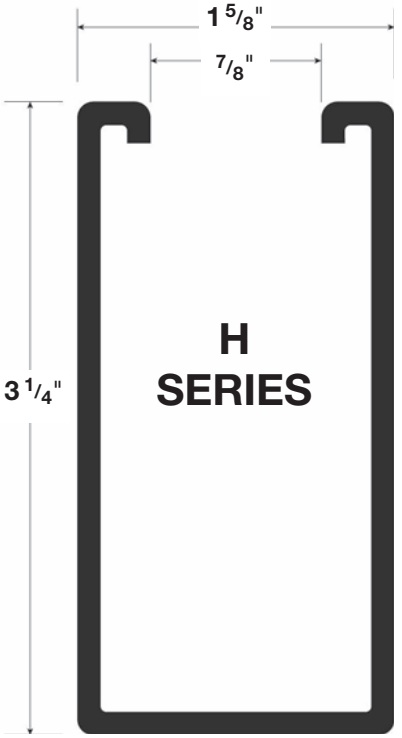
C1200 12 gauge



D1200 12 gauge



E1200 12 gauge



H1200 12 gauge

Channel Selection Chart

CHANNEL	HOLE CONFIGURATIONS					LENGTH	FINISH ON STEEL							MATÉRIAUX SPÉCIAUX		
Series	HS	S	SW	P	KO	ft	BC	PG(C)	EG(C)	GoldGalv®	HDG(C)	GR,GY,WH	PV(C)	AL(C)	T316L	SS6(C)
A1200	■	■	■	■	■	10 or 20	▒	X	■	■	■	▒	■	■	■	■
A1400	■	■	■	■	■	10 or 20	▒	■	■	■	■	▒				
AR1600	■	■	■	■	■	10 or 20	▒	■			▒	▒				
B1200	■	■	■	■	■	10 or 20	▒	■	■	■	■	▒		■	■	■
B1400	■	■	■	■		10 or 20	▒	■	■	■	■	▒	■		▒	▒
BR1600	■	■	■	■		10 or 20	▒	■			▒	▒				
C1200	■	■		■	■	10 or 20	▒	■	▒	■	■	▒				
D1200	■	■	■	■		10 or 20	▒	X	▒	▒	■	▒		■	■	■
E1200	■	■		■	■	10 or 20	▒	■	▒	■	■	▒		▒		
H1200	■	■		■	■	10 or 20	▒	■	▒	■	■	▒				

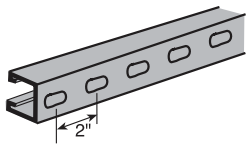
A1200-20-PGC
D1200-20-PGC

Legend

EXAMPLES	HOLE CONFIGURATION		FINISH ON STEEL		SPECIAL MATERIALS	
A120010PG Plain channel, 10 ft., pre-galvanized finish	Suffix		Suffix		Suffix	
B1400P10 Punched channel, 10 ft., GoldGalv® finish	**blank**	Plain, no holes	**BC**	Bare	**AL**	Aluminum
E1200HS20HDG Half slot channel, 20 ft hot dipped galvanized	**HS**	Half slot	**PGC**	Pre-galvanized	**SS6 (C)**	Stainless Steel Type 316
	S	Slotted	**EGC**	Electrogalvanized	**T316L**	Stainless Steel Type 316L
	SW	Slotted wide	**No Suffix**	GoldGalv®	**SS (C)**	Stainless Steel Type 304 *
	P	Punched	**HDGC**	Hot dipped galvanized		
	KO	Knockout	**GR,GY,WH**	Epoxy paint in green (GR), grey (GY), or white (WH)		
■ Standard offering.			▒ A minimum order quantity may apply.		*Check with your Regional Sales Office	

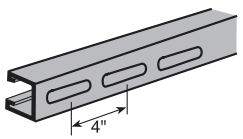
Hole Configuration

Half Slot Channel



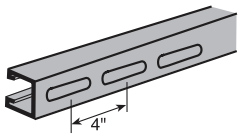
Slots: 9/16" X 1-1/8"

Slotted Channel



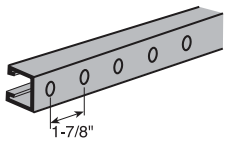
Slots: 7/16" X 3"

SW "Slotted Wide" Channel



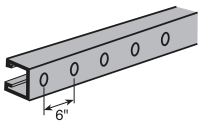
Slots: 9/16" X 3"

Punched Channel



Holes: 9/16"

Channel with Knockouts



KO: 1/2"

Straight Lengths

Tray Bottom Types
Ladder, ventilated and solid trough



Ladder

- Extra wide aluminum rungs are welded to extruded aluminum I-beam side rails. Every second rung is reversed to allow for easy top or bottom mounting of cable ties and clamps. All edges and welds are rounded and smooth to prevent cable damage.

Ventilated

- A fabricated structure consisting of integral or separate longitudinal rails and a bottom having openings sufficient for the passage of air and utilizing 75% or less of the plan area of the surface to support cables. The maximum open spacings between cable support surfaces of transverse elements do not exceed 102 mm (4 in) in the direction parallel to the tray side rails (rung edge to rung edge).

Note: For load CSA Class C/3M, NEMA 8C or less, please see alternative ventilated series of cable tray called – One-Piece found on pages A160 to A191 of the catalogue.

Solid Trough

- A fabricated structure consisting of a bottom without ventilation openings within separate longitudinal side rails.

Note : Fast and easy snap-in splice plates are provided with each straight section.

Straight Lengths

Number Selection



How to Create Part Numbers

Thomas & Betts has created a numbering system based on the order of selection criteria. For example the first selection issue is the environment which the cable tray will be subjected to. This selection will lead to the best material for your application. For complete details on cable tray selection process, see page A8 in the technical section.

Methods

1. Select the material best suited to your environment.
   Refer to technical section page A8.

2. Determine the tray series using the NEMA/CSA Load/Span Designations page A16, and Sizing Cable Tray page A23.

3. Select nominal depth and width of tray based on Cable Loading.
   See «Sizing Cable Tray» page A23.

4. Select the bottom type based on cables and spacing requirements.

5. The last number is the length of the cable tray in meters or inches.

Straight Lengths

4 in. Straight Sections / Series 1-4

Ladder, ventilated and solid trough

Straight Section Number Selection

(AH1-4) 24-L09-144

Material Prefix	Style Prefix	Series	Side Rail Height (in.)	Width	Bottom Type	Length
A • Aluminum	H • H-Beam	1 • Series 1 **	4	06 • (6 in.) 09 • (9 in.) 12 • (12 in.) 18 • (18 in.) 24 • (24 in.) 30 • (30 in.) 36 • (36 in.) 42 • (42 in.)	L06 (6 in. rung spacing) L09 (9 in. rung spacing) L12 (12 in. rung spacing) V (ventilated) *** S (solid trough)	144 (12 ft.) 288 (24 ft.) 3 (3 meters) 6 (6 meters)

** Series 1 is available in 12 ft. or less.

*** For load CSA Class C/3M, NEMA 8C or less, please see an alternative ventilated series of cable tray called - One-Piece found on pages A160 to A191 of this catalogue.

Technical Specifications

All calculations and data are based on 42 in. wide cable trays with rungs spaced on 12 in. centers with tray supported as simple spans with deflection measured at the midpoint. Continuous spans may reduce deflection by as much as 50%.

Deflection factor: For lighter loads, deflection can be calculated by multiplying the load by the deflection factor.

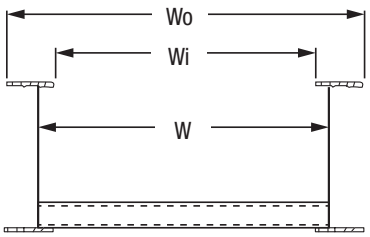
For Fittings consult pages A50 to A91.

Series		Support Span (Feet)							
		6	8	10	12	14	16	18	20
AH1-4	Load (lb.)/ft.	252	142	91	63	–	–	–	–
	Deflection (in.)	0.284	0.506	0.790	1.138	–	–	–	–
	Deflection Factor	0.001	0.004	0.009	0.018	–	–	–	–

Straight Lengths

4 in. Straight Sections / Series 1-4

Ladder, ventilated and solid trough



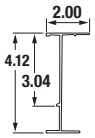


Dimensions

AH1-4		
W (in.)	**Wo (in.)**	**Wi (in.)**
6	8.86	4.86
9	11.86	7.86
12	14.86	10.86
18	20.86	16.86
24	26.86	22.86
30	32.86	28.86
36	38.86	34.86
42	44.86	40.86

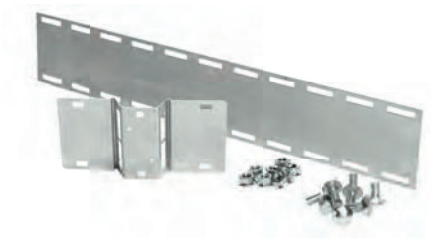
Technical Specifications

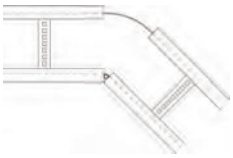
LOAD RATINGS: 1.5 Safety factor. All tray sections will support an additional 200 lb. concentrated load on any portion of tray (side rail, rung, etc.) above and beyond published load class.

Series	Dimensions	Side Rail Design Factors • 1 Pair	Classifications		
			NEMA	CSA	UL
AH1-4		Ix = 2.58 in.^{4} Sx = 1.224 in.^{3} Area = 0.968 in.^{2}	12B, 8C	C/3 m	UL cross sectional Area : 0.60 in.^{2}

Aluminum splice plates

Horizontal and vertical adjustable plates

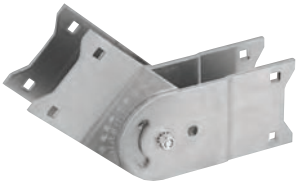




Horizontal adjustable plate

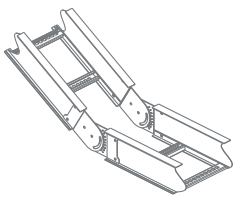
Cat. no.	Material	Cover series	Cover offset (in.)*
ABW-(*)06HBP	Aluminum	4 to 7	06
ABW-(*)09HBP	Aluminum	4 to 7	09
ABW-(*)12HBP	Aluminum	4 to 7	12
ABW-(*)18HBP	Aluminum	4 to 7	18
ABW-(*)24HBP	Aluminum	4 to 7	24
ABW-(*)30HBP	Aluminum	4 to 7	30
ABW-(*)36HBP	Aluminum	4 to 7	36
ABW-(*)42HBP	Aluminum	4 to 7	42

Furnished in pairs with hardware.
(*) Insert side rail height.



- Hinged vertical plates provide maximum flexibility for changes in elevation
- Furnished in pairs with hardware
- Kit contents: 10 carriage bolts, 2 cap screws, 12 serrated flange nuts, ⅜ in. diameter

Vertical adjustable plate



Cat. no.	Material	Side rail height (in.)
ABW-4-VSP	Aluminum	4
ABW-5-VSP	Aluminum	5
ABW-6-VSP	Aluminum	6
ABW-7-VSP	Aluminum	7

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 16/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 018 **Referencing** 271005+WTS-E07
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : BELDEN + CORNING + AVALON

Descriptions / comments

TELECOM + OPTIC FIBER

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. 004
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb 17, 2023

DILLON CONSULTING

BELDEN
SENDING ALL THE RIGHT SIGNALS



Part Number: 2412

DataTwist 2400 Cat 6+ Cable, U/UTP, PVC, 4 Pair, AWG 23, Riser

Product Description

CAT6+ (350MHz), 4-Pair, U/UTP-unshielded, Riser-CMR, Premise Horizontal cable, 23 AWG solid bare copper conductors, polyolefin insulation, tape separator, ripcord, PVC jacket

Technical Specifications

Product Overview

Environmental Space:	Riser
Suitable Applications:	Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM

Physical Characteristics (Overall)

Conductor

AWG	Stranding	Material	No. of Pairs
23	Solid	BC - Bare Copper	4

Conductor Count:	8
Total Number of Pairs:	4
Conductor Size:	23 AWG

Insulation

Material
PO - Polyolefin

Bonded-Pair:	N/A

Color Chart

Number	Color	Number	Color
1	White/Blue Stripe & Blue	3	White/Green Stripe & Green
2	White/Orange Stripe & Orange	4	White/Brown Stripe & Brown

Outer Jacket Material

Material	Nominal Diameter	Ripcord	Separator Material
PVC - Polyvinyl Chloride	0.224 in	Yes	Patented Dielectric Tape

Electrical Characteristics

Conductor DCR

Max. Conductor DCR	Max. DCR Unbalance
78 Ohm/km	3 %

Capacitance

Max. Capacitance Unbalance	Nom.Mutual Capacitance
330 pF/100m	17 pF/ft

Delay

Frequency [MHz]	Max. Delay	Max. Delay Skew	Nominal Velocity of Propagation (VP) [%]
100 MHz	537.6 ns/100m	35 ns/100m	70 %

High Freq

Frequency [MHz]	Max. Insertion Loss (Attenuation)	Min. NEXT [dB]	Min. PSNEXT [dB]	Min. ACR [dB]	Min. PSACR [dB]	Min. ACRF (ELFEXT) [dB]	Min. PSACRF (PSELFEXT) [dB]	Min. RL (Return Loss) [dB]	Max./Min. Input Impedance (unFitted)	Max./Min. Fitted Impedance
1 MHz	2.0 dB/100m	75.3 dB	75.3 dB	73.3 dB	73.3 dB	70.8 dB	67.8 dB	20.0 dB	100 ± 15 Ohm	102 ± 15 Ohm
4 MHz	3.7 dB/100m	66.3 dB	66.3 dB	62.6 dB	62.6 dB	58.8 dB	55.8 dB	23.0 dB	100 ± 15 Ohm	100 ± 15 Ohm
8 MHz	5.2 dB/100m	61.8 dB	61.8 dB	56.6 dB	56.6 dB	52.7 dB	49.7 dB	24.5 dB	100 ± 15 Ohm	100 ± 15 Ohm
10 MHz	5.8 dB/100m	60.3 dB	60.3 dB	54.5 dB	54.5 dB	50.8 dB	47.8 dB	25.0 dB	100 ± 15 Ohm	100 ± 15 Ohm
16 MHz	7.4 dB/100m	57.2 dB	57.2 dB	49.9 dB	49.9 dB	46.7 dB	43.7 dB	25.0 dB	100 ± 15 Ohm	100 ± 15 Ohm
20 MHz	8.3 dB/100m	55.8 dB	55.8 dB	47.5 dB	47.5 dB	44.8 dB	41.8 dB	25.0 dB	100 ± 15 Ohm	100 ± 15 Ohm
25 MHz	9.3 dB/100m	54.3 dB	54.3 dB	45.1 dB	45.1 dB	42.8 dB	39.8 dB	24.3 dB	100 ± 15 Ohm	100 ± 15 Ohm
31.25 MHz	10.4 dB/100m	52.9 dB	52.9 dB	42.5 dB	42.5 dB	40.9 dB	37.9 dB	23.6 dB	100 ± 15 Ohm	100 ± 15 Ohm
62.5 MHz	15.0 dB/100m	48.4 dB	48.4 dB	33.4 dB	33.4 dB	34.9 dB	31.9 dB	21.5 dB	100 ± 15 Ohm	100 ± 15 Ohm
100 MHz	19.3 dB/100m	45.3 dB	45.3 dB	26.0 dB	26.0 dB	30.8 dB	27.8 dB	20.8 dB	100 ± 15 Ohm	100 ± 15 Ohm
155 MHz	24.6 dB/100m	42.4 dB	42.4 dB	17.9 dB	17.9 dB	27.0 dB	24.0 dB	19.5 dB	100 ± 22 Ohm	100 ± 15 Ohm
200 MHz	28.3 dB/100m	40.8 dB	40.8 dB	12.5 dB	12.5 dB	24.8 dB	21.8 dB	18.7 dB	100 ± 22 Ohm	100 ± 15 Ohm
250 MHz	32.1 dB/100m	39.3 dB	39.3 dB	7.2 dB	7.2 dB	22.8 dB	19.8 dB	18.0 dB	100 ± 32 Ohm	100 ± 15 Ohm
300 MHz	35.6 dB/100m	38.1 dB	38.1 dB	2.5 dB	0.5 dB	21.3 dB	18.3 dB	17.5 dB	100 ± 32 Ohm	100 ± 15 Ohm
350 MHz	38.9 dB/100m	37.1 dB	35.1 dB	-1.8 dB	-3.8 dB	19.9 dB	16.9 dB	17.0 dB	100 ± 32 Ohm	100 ± 15 Ohm
400 MHz	42.0 dB/100m	36.3 dB	34.3 dB	-5.7 dB	-7.7 dB	18.8 dB	15.8 dB	16.6 dB	100 ± 32 Ohm	100 ± 15 Ohm
450 MHz	45.0 dB/100m	35.5 dB	33.5 dB	-9.5 dB	-11.5 dB	17.7 dB	14.7 dB	16.2 dB	100 ± 32 Ohm	100 ± 15 Ohm
500 MHz	47.9 dB/100m	34.8 dB	32.8 dB	-13.1 dB	-15.1 dB	16.8 dB	13.8 dB	15.9 dB	100 ± 32 Ohm	100 ± 15 Ohm
550 MHz	50.6 dB/100m	34.2 dB	32.2 dB	-16.4 dB	-18.4 dB	16.0 dB	13.0 dB	15.6 dB	100 ± 32 Ohm	100 ± 15 Ohm

Voltage

UL Voltage Rating
300 V RMS

Temperature Range

Installation Temp Range:	0°C To +50°C
UL Temp Rating:	75°C
Storage Temp Range:	-20°C To +75°C
Operating Temp Range:	-20°C To +75°C

Mechanical Characteristics

Bulk Cable Weight:	22 lbs/1000ft
Max Recommended Pulling Tension:	25 lbs
Min Bend Radius During Installation:	2.25 in
Min Bend Radius/Minor Axis:	1.0 in

Standards

NEC Articles:	800
NEC/(UL) Specification:	CMR
CEC/C(UL) Specification:	CMR
ISO/IEC Compliance:	11801 ed 2.2 (2011) Class E
CPR Euroclass:	Eca
Data Category:	Category 6
ANSI Compliance:	S-116-732-2013 Category 6, ANSI/NEMA WC-66 Category 6
Telecommunications Standards:	ANSI/TIA-568-C.2 Category 6
IEEE Specification:	IEEE 802.3bl Type 1, Type 2, Type 3, Type 4
Third Party Performance Verification:	Category 6

Applicable Environmental and Other Programs

EU Directive 2000/53/EC (ELV):	Yes
EU Directive 2002/95/EC (RoHS):	Yes
EU Directive 2002/96/EC (WEEE):	Yes
EU Directive 2003/11/EC (BFR):	Yes
EU Directive 2003/96/EC (BFR):	Yes
EU Directive 2011/65/EU (ROHS II):	Yes
EU Directive 2012/19/EU (WEEE):	Yes

EU Directive 2015/863/EU:	Yes
EU Directive Compliance:	Yes
EU CE Mark:	Yes
EU REACH SVHC Compliance (yyyy-mm-dd):	2017-07-10
EU RoHS Compliance Date (yyyy-mm-dd):	2004-01-01
CA Prop 65 (CJ for Wire & Cable):	Yes
MII Order #39 (China RoHS):	Yes

Suitability

Suitability - Aerial:	No
Suitability - Burial:	No
Suitability - Hazardous Locations:	No
Suitability - Indoor:	Yes
Suitability - Non-Halogenated:	No
Suitability - Oil Resistance:	No
Suitability - Outdoor:	No
Suitability - Sunlight Resistance:	No

Flammability, LS0H, Toxicity Testing

C(UL) Flammability:	FT4
UL Flammability:	UL 1666 Riser
CSA Flammability:	CMR FT 4
ISO/IEC Flammability:	IEC 60332-1-2
UL voltage rating:	300 V RMS

Plenum/Non-Plenum

Plenum (Y/N):	No
Plenum Number:	2413

Part Number

Variants

Item #	Color	UPC	Length	Footnote
2412 0101000	Black	612825061199	1,000 ft	
2412 010A1000	Black	612825061205	1,000 ft	
2412 010U1000	Black	612825062165	1,000 ft	
2412 0061000	Blue	612825061045	1,000 ft	
2412 0061400	Blue	612825061076	1,400 ft	
2412 0062500	Blue	612825061069	2,500 ft	
2412 0065000	Blue	612825062134	5,000 ft	C
2412 006A1000	Blue	612825061052	1,000 ft	
2412 006U1000	Blue	612825061236	1,000 ft	
2412 0081000	Gray	612825061168	1,000 ft	
2412 008A1000	Gray	612825061175	1,000 ft	
2412 008U1000	Gray	612825061243	1,000 ft	
2412 0051000	Green	612825061083	1,000 ft	
2412 005A1000	Green	612825061090	1,000 ft	
2412 005U1000	Green	612825062127	1,000 ft	
2412 003A1000	Orange	612825061212	1,000 ft	
2412 003U1000	Orange	612825062103	1,000 ft	
2412 007A1000	Purple	612825061182	1,000 ft	
2412 007U1000	Purple	612825062141	1,000 ft	
2412 002A1000	Red	612825061229	1,000 ft	C
2412 0091000	White	612825061106	1,000 ft	
2412 0092500	White	612825061120	2,500 ft	
2412 0095000	White	612825062158	5,000 ft	C
2412 009A1000	White	612825061113	1,000 ft	
2412 009U1000	White	612825061250	1,000 ft	
2412 0041000	Yellow	612825061137	1,000 ft	
2412 0042500	Yellow	612825061144	2,500 ft	

2412 004A1000	Yellow	612825061151	1,000 ft
2412 004U1000	Yellow	612825062110	1,000 ft

Footnote:	C - CRATE REEL PUT-UP.
Patent:	https://www.belden.com/resources/patents

Product Notes

Notes:	Values above 350 MHz are for Engineering Information Only. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0.

History

Update and Revision:	Revision Number: 0.441 Revision Date: 05-02-2019

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Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX104193 Modular Connectors - CAT6+ Modular Jack - KeyConnect





For more Information please call

1-800-Belden1

General Description:

CAT6+ Modular Jack, RJ45, KeyConnect style, Blue

Usage (Overall)

Suitable Applications:	IBDN System 2400, 3600 and 4800, TIA Category 6+, ISO Class E, 1000 BASE-T
Related Parts:	Compatible with KeyConnect Faceplates, Adapters, Boxes and Patch Panels

Physical Characteristics (Connectivity)

Dimensions

Dimensions:

Height (mm)	Width (mm)	Depth (mm)
22.352	16.256	32.766

Materials

Materials:

Description	Type	Material
Front Connection	Lead Frame	Copper Alloy with 50u Inch Gold over Nickel
Rear Connection	IDC	Copper Alloy with Nickel Plating
Connector Body		Plastic - UL940V-0

Color

Color:	Blue

Wiring Scheme

Wiring Scheme:	T568A/B

Weight

Weight:	0.006 kg

Included Parts

Included Parts:	1 T-Bar

Packaging

Packaging:	Individually packaged in a plastic bag. Standard pack of 50 units.

Mechanical Characteristics (Connectivity)

Footprint/Type:	KeyConnect
Plug / Jack Compatibility:	RJ45, RJ11

Termination Interface:

Termination	Connection	Durabilities
Front	Mated Connection	1,000 cycles
Rear	Gas Tight IDC Connection	20 terminations

Connector/Hardware Retention:	88.964 N
Plug/Connector Retention:	50.042 N
Storage Temperature Range:	-40°C To +70°C
Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C
Tool Compatibility:	Belden 110 Connecting Tool, MediaFlex Termination Station

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

Other Standards:	FCC Part 68, Subpart F, IEC 60603-7
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	EUP 50

Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX104193 Modular Connectors - CAT6+ Modular Jack - KeyConnect

Telecommunications Standards:	Category 6 - TIA 568.C.2, ISO/IEC 11801:2002 Ed.2
Third Party Performance Verification:	ETL - Verified Category 6
Safety Listing:	ACA, c(UL)us Listed
Other Specification:	UL 1863

Suitability

Suitability - Indoor:	Yes - Indoor

Transmission Characteristics (Connectivity)

Mated Connection Table 1:

Frequency (MHz)	Max. Insertion Loss TIA* (dB)	Max. Insertion Loss Belden** (dB)	Min. NEXT TIA* (dB)	Min. NEXT Belden** (dB)	Min. FEXT TIA* (dB)	Min. FEXT Belden** (dB)
1.000	0.100	0.100	75.000	77.000	75.000	77.000
4.000	0.100	0.100	75.000	77.000	71.100	75.100
8.000	0.100	0.100	75.000	77.000	65.000	69.000
10.000	0.100	0.100	74.000	77.000	63.100	67.100
16.000	0.100	0.100	69.900	72.900	59.000	63.000
20.000	0.100	0.100	68.000	71.000	57.100	61.100
25.000	0.100	0.100	66.000	69.000	55.100	59.100
31.250	0.110	0.100	64.100	67.100	53.200	57.200
62.500	0.160	0.120	58.100	61.100	47.200	51.200
100.000	0.200	0.160	54.000	57.000	43.100	47.100
200.000	0.280	0.240	48.000	51.000	37.100	41.100
250.000	0.320	0.280	46.000	49.000	35.100	39.100
300.000		0.310		44.500		37.600

Mated Connection Table - Footnote:

* TIA/EIA-568-C.2 Category 6 Standard.
** Worst-case performance for a CAT6+ mated connection using CAT6+ modular plugs.

Mated Connection Table 2:

Frequency (MHz)	Min. Return Loss TIA* (dB)	Min. Return Loss Belden** (dB)	Min. Balanced TCL TIA* (dB)	Min. Balanced TCL Belden** (dB)
1.000	30.000	32.000	40.000	42.000
4.000	30.000	32.000	40.000	42.000
8.000	30.000	32.000	40.000	42.000
10.000	30.000	32.000	40.000	42.000
16.000	30.000	32.000	40.000	42.000
20.000	30.000	32.000	40.000	42.000
25.000	30.000	32.000	40.000	42.000
31.250	30.000	32.000	38.100	42.000
62.500	28.100	32.000	32.100	36.100
100.000	24.000	28.000	28.000	32.000
200.000	18.000	22.000	22.000	26.000
250.000	16.000	22.000	20.000	24.000
300.000		18.500		22.500

Dielectric Strength:	1,000 V RMS @ 60 Hz for 1 minute
Current Rating:	1.500 A
Insulation Resistance:	500 M-Ohm Minimum
Max. Contact Resistance:	20 m-Ohm
Termination Resistance:	2.5 m-Ohm

Notes (Overall)

Notes: Please see Installation Guide PX103329

Notes (Cont'd.):	IDC Wire Gauge: 22~24 AWG

Product Family

Part Number List:

Item Number	Color
AX101318	Gray
AX101319	Almond
AX101320	Elec. White
AX101321	Black
AX101322	Orange (TIA 606)
AX101323	Red (TIA 606)
AX101324	Yellow (TIA 606)

Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX104193 Modular Connectors - CAT6+ Modular Jack - KeyConnect

AX101325	Green (TIA 606)
AX101326	Blue (TIA 606)
AX101327	Purple (TIA 606)
AX101328	Brown (TIA 606)
AX103076	Ivory
AX104189	Orange
AX104190	Red
AX104191	Yellow
AX104192	Green
AX104193	Blue
AX104194	Purple

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
AX104193	1 EA	0.024 LB			CAT6+ JACK KCONN BLUE (DARK)

Revision Number: 1 Revision Date: 09-08-2017

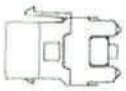
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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

AX101320 Modular Connectors - CAT6+ Modular Jack - KeyConnect


For more Information please call

1-800-Belden1

General Description:

CAT6+ Modular Jack, RJ45, KeyConnect style, Electrical White

Usage (Overall)

Suitable Applications:	IBDN System 2400, 3600 and 4800, TIA Category 6+, ISO Class E, 1000 BASE-T
Related Parts:	Compatible with KeyConnect Faceplates, Adapters, Boxes and Patch Panels

Physical Characteristics (Connectivity)

Dimensions

Dimensions:

Height (in.)	Width (in.)	Depth (in.)
0.880	0.640	1.290

Materials

Materials:

Description	Type	Material
Front Connection	Lead Frame	Copper Alloy with 50u inch Gold over Nickel
Rear Connection	IDC	Copper Alloy with Nickel Plating
Connector Body		Plastic - UL94V-0

Color

Color:	Elec. White

Wiring Scheme

Wiring Scheme:	T568A/B

Weight

Weight:	0.014 lbs.

Included Parts

Included Parts:	1 T-Bar

Packaging

Packaging:	Individually packaged in a plastic bag. Standard pack of 50 units.

Mechanical Characteristics (Connectivity)

Footprint/Type:	KeyConnect
Plug / Jack Compatibility:	RJ45, RJ11

Termination Interface:

Termination	Connection	Durabilities
Front	Mated Connection	1,000 cycles
Rear	Gas Tight IDC Connection	20 terminations

Connector/Hardware Retention:	20 lbs.
Plug/Connector Retention:	11.250 lbs.
Storage Temperature Range:	-40°C To +70°C
Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C
Tool Compatibility:	Belden 110 Connecting Tool, MediaFlex Termination Station

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

Other Standards:	FCC Part 68, Subpart F, IEC 60603-7
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	EUP 50

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

AX101320 Modular Connectors - CAT6+ Modular Jack - KeyConnect

Telecommunications Standards:	ISO/IEC 11801:2002 Ed.2
Third Party Performance Verification:	ETL - Verified Category 6
Safety Listing:	ACA, Bi-national Standard Listed
Other Specification:	UL 1863

Suitability

Suitability - Indoor:	Yes - Indoor

Transmission Characteristics (Connectivity)

Mated Connection Table 1:

Frequency (MHz)	Max. Insertion Loss TIA* (dB)	Max. Insertion Loss Belden** (dB)	Min. NEXT TIA* (dB)	Min. NEXT Belden** (dB)	Min. FEXT TIA* (dB)	Min. FEXT Belden** (dB)
1.000	0.100	0.100	75.000	77.000	75.000	77.000
4.000	0.100	0.100	75.000	77.000	71.100	75.100
8.000	0.100	0.100	75.000	77.000	65.000	69.000
10.000	0.100	0.100	74.000	77.000	63.100	67.100
16.000	0.100	0.100	69.900	72.900	59.000	63.000
20.000	0.100	0.100	68.000	71.000	57.100	61.100
25.000	0.100	0.100	66.000	69.000	55.100	59.100
31.250	0.110	0.100	64.100	67.100	53.200	57.200
62.500	0.160	0.120	58.100	61.100	47.200	51.200
100.000	0.200	0.160	54.000	57.000	43.100	47.100
200.000	0.280	0.240	48.000	51.000	37.100	41.100
250.000	0.320	0.280	46.000	49.000	35.100	39.100
300.000		0.310		44.500		37.600

Mated Connection Table - Footnote:

* TIA/EIA-568-C.2-1-2002 Category 6 Standard.
** Worst-case performance for a CAT6+ mated connection using CAT6+ modular plugs.

Mated Connection Table 2:

Frequency (MHz)	Min. Return Loss TIA* (dB)	Min. Return Loss Belden** (dB)	Min. Balanced TCL TIA* (dB)	Min. Balanced TCL Belden** (dB)
1.000	30.000	32.000	40.000	42.000
4.000	30.000	32.000	40.000	42.000
8.000	30.000	32.000	40.000	42.000
10.000	30.000	32.000	40.000	42.000
16.000	30.000	32.000	40.000	42.000
20.000	30.000	32.000	40.000	42.000
25.000	30.000	32.000	40.000	42.000
31.250	30.000	32.000	38.100	42.000
62.500	28.100	32.000	32.100	36.100
100.000	24.000	28.000	28.000	32.000
200.000	18.000	22.000	22.000	26.000
250.000	16.000	22.000	20.000	24.000
300.000		18.500		22.500

Dielectric Strength:	1,000 V RMS @ 60 Hz for 1 minute
Current Rating:	1.500 A
Insulation Resistance:	500 M-Ohm Minimum
Max. Contact Resistance:	20 m-Ohm
Termination Resistance:	2.5 m-Ohm

Notes (Overall)

Notes: Please see installation Guide PX103329

Notes (Cont'd.):	IDC Wire Gauge: 22~24 AWG

Product Family

Part Number List:

Item Number	Color
AX101318	Gray
AX101319	Almond
AX101320	Elec. White
AX101321	Black
AX101322	Orange (TIA 606)
AX101323	Red (TIA 606)
AX101324	Yellow (TIA 606)

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

AX101320 Modular Connectors - CAT6+ Modular Jack - KeyConnect

AX101325	Green (TIA 606)
AX101326	Blue (TIA 606)
AX101327	Purple (TIA 606)
AX101328	Brown (TIA 606)
AX103076	Ivory
AX104189	Orange
AX104190	Red
AX104191	Yellow
AX104192	Green
AX104193	Blue
AX104194	Purple

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
AX101320	1 EA	0.024 LB			CAT6+ JACK KCONN ELEC WHITE

Revision Number: 2 Revision Date: 09-12-2017

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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

C601106010 Cable Assemblies - CAT6+ Modular Cord





For more Information
please call

1-800-Belden1

General Description:

CAT6+ Patch Cord, Bonded-Pair, 4 Pair, 24 AWG Solid, CMR, T568A/B-T568A/B, Blue, 10 ft. (3.0 m).

Usage (Overall)

Suitable Applications: IBDN System 4800, IBDN System 2400,TIA Category 6, ISO Class E, 1000BASE-T

Related Parts: CAT6+ Modular Jacks, CAT6+ Patch Panels

Multi Conductor

Physical Characteristics

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
4	24	Solid	BC - Bare Copper

Insulation

Insulation Material:

Insulation Material
PO - Polyolefin

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Color Code Chart:

Color
Blue

Overall Cabling

Overall Cabling Fillers: Cross Web

Overall Diameter

Overall Nominal Diameter: 0.225 in.

Physical Characteristics (Connectivity)

Materials

Materials:

Description	Type	Material
Plug	RJ45	Polycarbonate
Boot		Elastomer
Front Connection	Blades	Phosphor Bronze with 50u inch Gold over Nickel Plating

Color

Boot Color: Translucent

Wiring Scheme

Wiring Scheme: T568A/B-T568A/B

Weight

Weight: 0.060 lbs.

Packaging

Packaging: Individually packaged in a clear plastic bag.

Mechanical Characteristics (Connectivity)

Plug / Jack Compatibility: RJ45

Termination Interface:

Termination	Connection	Durabilities
RJ45	Mated Connection	750 Cycles

Storage Temperature Range: -40°C To +70°C

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

C601106010 Cable Assemblies - CAT6+ Modular Cord

Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C
Max. Recommended Pull Tension:	25 lbs.
Min. Bend Radius (Overall Cable):	1.040 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

UL Rating:	Riser
Other Standards:	FCC Part 68, Subpart F, IEC 60603-7
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2006
MII Order #39 (China RoHS):	EUP 50
Telecommunications Standards:	Category 6 - TIA 568.C.2, ISO/IEC 11801:2002 Ed.2
Safety Listing:	ACA, Bi-national Standard Listed

Suitability

Suitability - Indoor:	Yes

Transmission Characteristics (Connectivity)

Performance Table 1:

Frequency (MHz)	Max. Insertion Loss TIA* (dB)	Max. Insertion Loss Belden (dB)	Min. PSNEXT TIA* (dB)	Min PSNEXT Belden (dB)	Min. PSACRF TIA* (dB)	Min. PSACRF Belden (dB)
1.000	2.400	2.000	72.300	73.300	64.800	67.800
4.000	4.500	3.700	63.300	64.300	52.800	55.800
8.000	6.400	5.200	58.800	61.300	46.700	49.700
10.000	7.100	5.900	57.300	59.800	44.800	47.800
16.000	9.100	7.400	54.200	56.600	40.700	43.700
20.000	10.200	8.300	52.800	55.100	38.800	41.800
25.000	11.400	9.300	51.300	53.500	36.800	39.800
31.250	12.800	10.400	49.900	52.000	34.900	37.900
62.500	18.500	14.900	45.400	47.100	28.900	31.900
100.000	23.800	19.000	42.300	43.800	24.800	27.800
200.000	34.800	27.500	37.800	38.900	18.800	21.800
250.000	39.400	31.000	36.300	37.300	16.800	19.800
300.000		34.200		36.100		18.300

Performance Table - Footnote:	100 Meter Cable Specifications - * TIA-EIA-568-C.2 Category 6 Standard -------- PSACRF is formally PSELFEXT

Performance Table 2:

Frequency (MHz)	Min. Return Loss TIA* (dB)	Min. Return Loss Belden (dB)	Min. Balanced TCL TIA* (dB)	Min. Balanced TCL Belden (dB)
1.000	20.000	20.000	40.000	40.000
4.000	23.000	23.000	40.000	40.000
8.000	24.500	24.500	40.000	40.000
10.000	25.000	25.000	40.000	40.000
16.000	25.000	25.000	38.000	38.000
20.000	25.000	25.000	37.000	37.000
25.000	24.200	24.300	36.000	36.000
31.250	23.300	23.600	35.100	35.100
62.500	20.700	21.500	32.000	32.000
100.000	19.000	20.800	30.000	30.000
200.000	16.400	18.700	27.000	27.000
250.000	15.600	18.000	26.000	26.000
300.000		17.500		

Dielectric Strength:	1,000 V RMS @ 60 Hz for 1 minute
Current Rating:	1.500 A
Insulation Resistance:	500 M-Ohm Minimum
Max. Contact Resistance:	20 m-Ohm

Electrical Characteristics (Overall)

Labeling

Labeling:	Labeling: Belden Part Number, Performance Acronym, Wiring Scheme and Cord Length.

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

C601106010 Cable Assemblies - CAT6+ Modular Cord

Notes (Overall)

Notes: C601106010 is subdivided as following C6-01-1-06-010 C6 stands for performance, 01 stands for cable type, 1 stands for termination type, 06 stands for color, 010 stands for length Use last 3 digits of the code to specify length in feet - 001-015 ft in increments of 1 ft than 20 ft or 25 ft

Notes (Cont'd.): www.belden.com/p

Product Family

Product List:

Length	Yellow	Green	Blue	Gray	White	Black	Purple
2 ft. (0.6 m)	C601104002	C601105002	C601106002	C601108002	C601109002	C601100002	C601107002
4 ft. (1.2 m)	C601104004	C601105004	C601106004	C601108004	C601109004	C601100004	C601107004
7 ft. (2.1 m)	C601104007	C601105007	C601106007	C601108007	C601109007	C601100007	C601107007
10 ft. (3.0 m)	C601104010	C601105010	C601106010	C601108010	C601109010	C601100010	C601107010
15 ft. (4.6 m)	C601104015	C601105015	C601106015	C601108015	C601109015	C601100015	C601107015
25 ft. (7.6 m)	C601104025	C601105025	C601106025	C601108025	C601109025	C601100025	C601107025

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
C601106010	1 EA	0.345 LB	BLUE, LIGHT		PATCHCORD BCAT6+ CMR BLU 10FT

Revision Number: 1 Revision Date: 01-07-2016

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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

BELDEN
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C601109010 Cable Assemblies - CAT6+ Modular Cord





For more Information
please call

1-800-Belden1

General Description:

CAT6+ Patch Cord, Bonded-Pair, 4 Pair, 24 AWG Solid, CMR, T568A/B-T568A/B, White, 10 ft. (3.0 m).

Usage (Overall)

Suitable Applications:	IBDN System 4800, IBDN System 2400,TIA Category 6, ISO Class E, 1000BASE-T
Related Parts:	CAT6+ Modular Jacks, CAT6+ Patch Panels

Multi Conductor

Physical Characteristics

Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
4	24	Solid	BC - Bare Copper

Insulation

Insulation Material:

Insulation Material
PO - Polyolefin

Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Color Code Chart:

Color
White

Overall Cabling

Overall Cabling Fillers:	Cross Web

Overall Diameter

Overall Nominal Diameter:	0.225 in.

Physical Characteristics (Connectivity)

Materials

Materials:

Description	Type	Material
Plug	RJ45	Polycarbonate
Boot		Elastomer
Front Connection	Blades	Phosphor Bronze with 50u inch Gold over Nickel Plating

Color

Boot Color:	Translucent

Wiring Scheme

Wiring Scheme:	T568A/B-T568A/B

Weight

Weight:	0.336 lbs.

Packaging

Packaging:	Individually packaged in a clear plastic bag.

Mechanical Characteristics (Connectivity)

Plug / Jack Compatibility:	RJ45

Termination Interface:

Termination	Connection	Durabilities
RJ45	Mated Connection	750 Cycles

Storage Temperature Range:	-40°C To +70°C

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

C601109010 Cable Assemblies - CAT6+ Modular Cord

Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C
Max. Recommended Pull Tension:	25 lbs.
Min. Bend Radius (Overall Cable):	1.040 in.

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

UL Rating:	Riser
Other Standards:	FCC Part 68, Subpart F, IEC 60603-7
EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	01/01/2006
MII Order #39 (China RoHS):	EUP 50
Telecommunications Standards:	Category 6 - TIA 568.C.2, ISO/IEC 11801:2002 Ed.2
Safety Listing:	ACA, Bi-national Standard Listed

Suitability

Suitability - Indoor:	Yes

Transmission Characteristics (Connectivity)

Performance Table 1:

Frequency (MHz)	Max. Insertion Loss TIA* (dB)	Max. Insertion Loss Belden (dB)	Min. PSNEXT TIA* (dB)	Min PSNEXT Belden (dB)	Min. PSACRF TIA* (dB)	Min. PSACRF Belden (dB)
1.000	2.400	2.000	72.300	73.300	64.800	67.800
4.000	4.500	3.700	63.300	64.300	52.800	55.800
8.000	6.400	5.200	58.800	61.300	46.700	49.700
10.000	7.100	5.900	57.300	59.800	44.800	47.800
16.000	9.100	7.400	54.200	56.600	40.700	43.700
20.000	10.200	8.300	52.800	55.100	38.800	41.800
25.000	11.400	9.300	51.300	53.500	36.800	39.800
31.250	12.800	10.400	49.900	52.000	34.900	37.900
62.500	18.500	14.900	45.400	47.100	28.900	31.900
100.000	23.800	19.000	42.300	43.800	24.800	27.800
200.000	34.800	27.500	37.800	38.900	18.800	21.800
250.000	39.400	31.000	36.300	37.300	16.800	19.800
300.000		34.200		36.100		18.300

Performance Table - Footnote:	100 Meter Cable Specifications - * TIA-EIA-568-C.2 Category 6 Standard -------- PSACRF is formally PSELFEXT

Performance Table 2:

Frequency (MHz)	Min. Return Loss TIA* (dB)	Min. Return Loss Belden (dB)	Min. Balanced TCL TIA* (dB)	Min. Balanced TCL Belden (dB)
1.000	20.000	20.000	40.000	40.000
4.000	23.000	23.000	40.000	40.000
8.000	24.500	24.500	40.000	40.000
10.000	25.000	25.000	40.000	40.000
16.000	25.000	25.000	38.000	38.000
20.000	25.000	25.000	37.000	37.000
25.000	24.200	24.300	36.000	36.000
31.250	23.300	23.600	35.100	35.100
62.500	20.700	21.500	32.000	32.000
100.000	19.000	20.800	30.000	30.000
200.000	16.400	18.700	27.000	27.000
250.000	15.600	18.000	26.000	26.000
300.000		17.500		

Dielectric Strength:	1,000 V RMS @ 60 Hz for 1 minute
Current Rating:	1.500 A
Insulation Resistance:	500 M-Ohm Minimum
Max. Contact Resistance:	20 m-Ohm

Electrical Characteristics (Overall)

Labeling

Labeling:	Labeling: Belden Part Number, Performance Acronym, Wiring Scheme and Cord Length.

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

C601109010 Cable Assemblies - CAT6+ Modular Cord

Notes (Overall)

Notes: C601109010 is subdivided as following C6-01-1-09-010 C6 stands for performance, 01 stands for cable type, 1 stands for termination type, 09 stands for color, 010 stands for length Use last 3 digits of the code to specify length in feet - 001-015 ft in increments of 1 ft than 20 ft or 25 ft

Notes (Cont'd.): www.belden.com/p

Product Family

Product List:

Length	Yellow	Green	Blue	Gray	White	Black	Purple
2 ft. (0.6 m)	C601104002	C601105002	C601106002	C601108002	C601109002	C601100002	C601107002
4 ft. (1.2 m)	C601104004	C601105004	C601106004	C601108004	C601109004	C601100004	C601107004
7 ft. (2.1 m)	C601104007	C601105007	C601106007	C601108007	C601109007	C601100007	C601107007
10 ft. (3.0 m)	C601104010	C601105010	C601106010	C601108010	C601109010	C601100010	C601107010
15 ft. (4.6 m)	C601104015	C601105015	C601106015	C601108015	C601109015	C601100015	C601107015
25 ft. (7.6 m)	C601104025	C601105025	C601106025	C601108025	C601109025	C601100025	C601107025

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
C601109010	1 EA	0.345 LB	WHITE		PATCHCORD BCAT6+ CMR WHI 10FT

Revision Number: 1 Revision Date: 01-14-2016

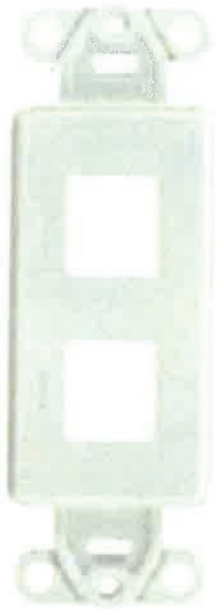
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Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX106573 Faceplates and Panels - KeyConnect Deco Adapter 2 Port



For more Information
please call

1-800-Belden1

General Description:

KeyConnect Deco Adapter 2 Port

Usage (Overall)

Suitable Applications:	- Compatible with a variety of modules that are suitable for use with Belden Systems 10GX, 4800,3600, 2400 and 1200.
Related Parts:	- Compatible with 10GX, CAT6+ and CAT5E KeyConnect and Multimedia Modules

Physical Characteristics (Connectivity)

Capacity

Max. Capacity:	2 Inserts

Access

Front Connection:	Flush

Dimensions

Dimensions:

Height (mm)	Width (mm)	Depth (mm)
105.500	35.700	10.000

Materials

Materials:

Description	Material	Color
AX106573-AL	Plastic - UL94V-0	Almond
AX106573-BK	Plastic - UL94V-0	Black
AX106573-EW	Plastic - UL94V-0	Elec. White
AX106573-GY	Plastic - UL94V-0	Grey

Weight

Weight:	0.018 kg

Included Parts

Included Parts:	screws, blank insert

Packaging

Packaging:	Individually packaged in a plastic bag.

Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX106573 Faceplates and Panels - KeyConnect Deco Adapter 2 Port

Mechanical Characteristics (Connectivity)

Footprint/Type:	KeyConnect
Connector/Hardware Retention:	88.964 N
Storage Temperature Range:	-40°C To +70°C
Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	Yes
Safety Listing:	Bi-national Standard Listed
Other Specification:	UL1863

Suitability

Suitability - Indoor:	Yes

Transmission Characteristics (Connectivity)

Notes (Overall)

Product Family

Part Numbers:

Description	Almond	Elec. White	Black	Grey
KeyConnect Deco Adapter Blank	AX106572-AL	AX106572-EW	AX106572-BK	AX106572-GY
KeyConnect Deco Adapter 2-Ports	AX106573-AL	AX106573-EW	AX106573-BK	AX106573-GY
KeyConnect Deco Adapter 3-Ports	AX106574-AL	AX106574-EW	AX106574-BK	AX106574-GY
KeyConnect Deco Adapter 4-Ports	AX106575-AL	AX106575-EW	AX106575-BK	AX106575-GY
KeyConnect Deco Adapter 6-Ports	AX106576-AL	AX106576-EW	AX106576-BK	AX106576-GY

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc

Revision Number: 0 Revision Date: 11-03-2015

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Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX102262 Faceplates and Panels - KeyConnect Blank Insert





For more Information please call

1-800-Belden1

General Description:

KeyConnect Blank Insert

Usage (Overall)

Related Parts:	- Compatible KeyConnect-style Faceplate and Patch Panel

Physical Characteristics (Connectivity)

Dimensions

Dimensions:

Height (mm)	Width (mm)	Depth (mm)
21.590	16.510	20.066

Materials

Materials:

Description	Material
Insert	Plastic - UL94V-0

Color

Color:	Elec. White

Weight

Weight:	0.001 kg

Packaging

Packaging:	50 units packaged in a plastic bag.

Mechanical Characteristics (Connectivity)

Footprint/Type:	KeyConnect
Connector/Hardware Retention:	88.964 N
Storage Temperature Range:	-40°C To +70°C
Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	Yes
Safety Listing:	Bi-national Standard Listed

Suitability

Suitability - Indoor:	Yes

Transmission Characteristics (Connectivity)

Notes (Overall)

Notes: For proper installation refer to Installation Guide PX103826. Visit our web site at http://www.belden.com/pdfs/Techpprs/InstallationGuide.pdf

Product Family

Part Numbers:

Item Number	Color
AX102261	Almond
AX102262	Elec. White
AX102263	Black
AX104229	Ivory
AX104456	Dark Gray
AX107026	Light Gray

Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX102262 Faceplates and Panels - KeyConnect Blank Insert

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
AX102262	1 EA	0.002 KG			KCONN BLANK MODULE, ELEC WHITE

Revision Number: 0 Revision Date: 10-18-2016

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Detailed Specifications & Technical Data

METRIC MEASUREMENT VERSION

AX101456 Faceplates and Panels - Flex Patch Panel - MDVO





For more Information please call

1-800-Belden1

General Description:

Flex Patch Panel, 24-port, 1U, Black (Empty)

Usage (Overall)

Suitable Applications:	- Compatible with a variety of modules that are suitable for use with Belden IBDN Systems 10GX, 4800, 3600, 2400 and 1200.
Related Parts:	- Compatible with 10GX, CAT6+ and CAT5E MDVO Modular Jacks

Physical Characteristics (Connectivity)

Capacity

Max. Capacity:	24 connectors

Access

Front Connection:	Flush
Termination Area:	Rear

Dimensions

Dimensions:

Height (mm)	Width (mm)	Depth (mm)
43.688	482.600	101.600

Materials

Materials:

Description	Material
Panel	Steel
Bezel	Plastic - UL94V-0

Color

Color:	Black

Weight

Weight:	0.454 kg

Included Parts

Included Parts:	4 Screws (10x32); 4 Screws (12x24); 1 Printable LabelFlex Half-Sheet; 1 Rear Cable Management Bar, 1 Installation Guide

Packaging

Packaging:	Individually packaged in a cardboard box.

Mechanical Characteristics (Connectivity)

Footprint/Type:	MDVO-Style
Storage Temperature Range:	-40°C To +70°C
Installation Temperature Range:	-10°C To +60°C
Operating Temperature Range:	-10°C To +60°C

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU Directive 2002/95/EC (RoHS):	Yes

AX101456 Faceplates and Panels - Flex Patch Panel - MDVO

EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	EUP 50
Safety Listing:	ACA, Bi-national Standard Listed

Suitability

Suitability - Indoor:	Yes

Notes (Overall)

Notes: For proper installation refer to Installation Guide PX103340 included with the product or visit our web site at http://www.belden.com

Product Family

Part Numbers:

Description	Item Number
AngleFlex PP 1U24P, Black	AX103248
AngleFlex PP 2U48P, Black	AX103249
Flex PP 1U24P, Black	AX101456
Flex PP 2U48P, Black	AX101458
AngleFlex PP 1U24P CAT6+ Coupler, Black	AX104568
AngleFlex PP 1U24P 10GX Coupler, Black	AX104569
AngleFlex PP 2U48P CAT6+ Coupler, Black	AX104570
AngleFlex PP 2U48P 10GX Coupler, Black	AX104571

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
AX101456	1 EA	1.543 LB			FLEX PATCH PANEL 24-P 1U BLK

Revision Number: 0 Revision Date: 12-09-2014

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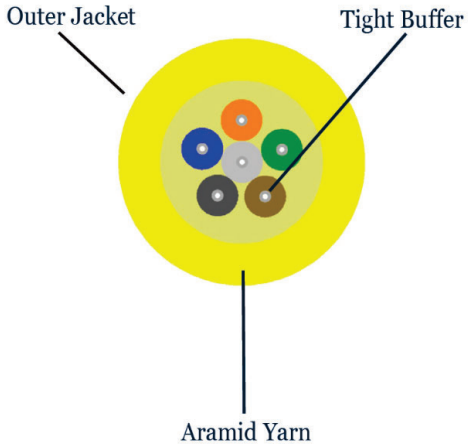
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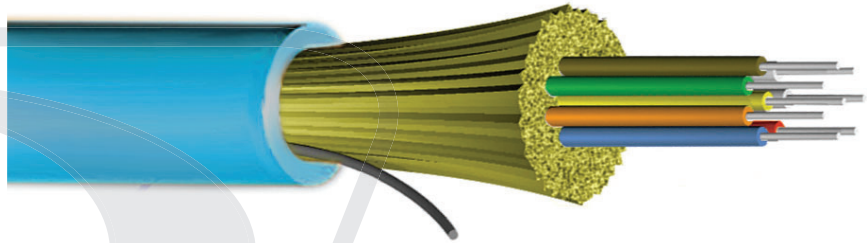
50 Micron Multimode (OM3) Indoor (Corning ClearCurve) OFNR (per meter) - Aqua

BK-FxCP-OM3-R-T - Specifications

Description

This bulk OM3 fiber cable is indoor riser rated and has a tight buffer construction. It is OFNR rated for riser and general inside plant environments. It is ideal for routing between communications closets and equipment rooms.





Physical Characteristics

Color	Aqua
Fiber Optic Type	OM3 50 micron Multimode Riser Indoor Tight Buffered Cable
Fiber Count	24-Strand
Glass Fiber	Corning ClearCurve
Sub Unit Diameter	900 Micron
Outer Jacket Material	Flame Retardant PVC
Tight Buffer Material	Flame Retardant PVC
Strength Member	Aramid Yard
Nominal Outer Diameter Min	4.8mm (6-Strand) 7.8mm (24-Strand)
Bend Radius, Installation	7.2mm (6-Strand) / 11.7cm (24-Strand)
Min Bend Radius, Operation	4.8mm (6-Strand) / 7.8cm (24-Strand)

Operating Temperature	-20 deg C ~ +70 deg C
Storage Temperature	-40 deg C ~ +70 deg C
Wavelength	850 / 1300nm
Maximum Attenuation	3.0 / 1.0 dB/km
Fire Rating	OFNR, FT4

Certifications

UL	Yes

Product Support

RoHS	Yes
Country of Origin	USA

Packaging Information

Product Weight	0.12 lbs

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Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

FC3X06SDFS Faceplates and Panels - FX ECX Splice Cassette



For more Information please call

1-800-Belden1

General Description:

FX ECX CASSETTE, OM3, 6 PORTS, SPLICING, SC DUPLEX, AQUA ADAPTERS

Usage (Overall)

Suitable Applications:	FiberExpress Solutions, Backbone, Telecommunications Room, Main Distribution Room, Data Centers
Related Parts:	FX ECX Panels, FX Pigtails, FX Brilliance, Belden Splice Sleeves (see notes)

Physical Characteristics (Connectivity)

Capacity

Max. Capacity:	12 Fibers, 6 SC Duplex Ports

Access

Front Connection:	Static

Dimensions

Dimensions:

Height (in.)	Width (in.)	Length (in.)
1.300	6.340	8.740

Materials

Materials:

Description	Type	Material	Color
Adapter Sleeve		Zirconia-Ceramic	
Front Connector Body	SC-Duplex	Plastic - UL94V-0	Aqua
Cassette assy		Plastic - UL94V-0	Black

Detailed Specifications & Technical Data

ENGLISH MEASUREMENT VERSION

FC3X06SDFS Faceplates and Panels - FX ECX Splice Cassette

Weight

Weight:	0.600 lbs.

Packaging

Packaging:	Individually packaged in a plastic shell, Shipped in cardboard box (12/box)

Mechanical Characteristics (Connectivity)

Storage Temperature Range:	-10°C To +75°C
Operating Temperature Range:	-10°C To +60°C

Applicable Specifications and Agency Compliance (Overall)

Applicable Standards & Environmental Programs

EU Directive 2002/95/EC (RoHS):	Yes
EU RoHS Compliance Date (mm/dd/yyyy):	07/01/2006
MII Order #39 (China RoHS):	EUP 50

Suitability

Suitability - Indoor:	Yes

Transmission Characteristics (Connectivity)

Notes (Overall)

Notes: Splice holder (FXFUSHSPCU) is included.

Splice holder compatible with Belden splice sleeves part numbers (Post-Shrink Diameter): FXFUHS900AB25(2.5mm), FXFUHS9T2CB25 (2.0mm), FXFUHS250DB25 (1.5mm) and FXFUHSRIBEB12 (oval 4.1mm x 4.6mm)

For additional information about this product, please contact our Technical Support group (ibdn.ts@belden.com) or your local sales representative.

Product Family

Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
FC3X06SDFS	1 EA	0.830 LB			FX ECX CASS OM3 06P SPLICING

Revision Number: 0 Revision Date: 09-26-2017

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Fiber Optic Jumper, 2 F, SC Duplex to SC Duplex, Zipcord Cable, Riser, 2.0 mm legs

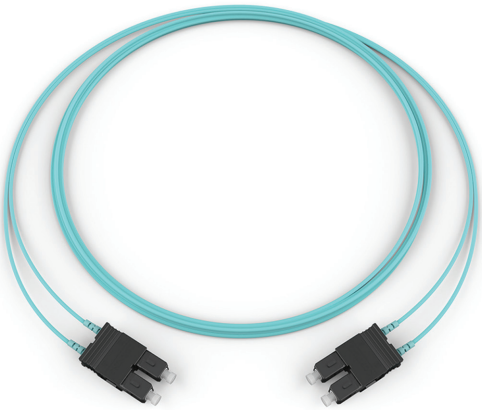
50 µm multimode (OM3), 3 m

CORNING

Two-fiber cable assemblies are offered with a variety of connector and cable combinations. Connector options include LC, SC, FC, ST® compatible, and MT-RJ. RoHS compliant Zipcord, DFX®, MIC®, Fanout, and RIC cables are available.

Additional detailed furcation images are available in the Cable Assembly Family Specification Sheet.

Many of our fiber optic cable assemblies are highly configurable. If you don't see what you are looking for here, please review the ordering matrix contained in the family spec sheet, or contact Customer Care at 1-800-743-2675.



Part Number: 575702T5120003M

Features and Benefits

Flame-retardant jacket
Rugged and durable

Superior Performance Testing
Every termination is tested to ensure the highest in network performance

State-Of-The-Art Manufacturing Processes
Corning proprietary manufacturing processes and advanced technology result in unsurpassed product consistency

Corning advantage
Integrated developer and manufacturer of cable, connectors and fiber to ensure overall cable assembly performance

Specifications

General Specifications	
Application	Vertical Riser, General Building Applications
Cable Type	Tight-Buffered
Flame Rating	Riser (OFNR)
Cable Assembly Type	Two Fiber
Fiber Category	50 µm MM (OM3)

Design - Connector A	
Connector Type	SC duplex
Ferrule Material	Ceramic

CORNING

Fiber Optic Jumper, 2 F, SC Duplex to SC Duplex, Zipcord Cable, Riser, 2.0 mm legs

50 µm multimode (OM3), 3 m

CORNING

Design - Connector A	
Housing Material	Composite
Housing Color	Black
Boot Color	Aqua

Optical Specifications - Connector A	
Insertion Loss, Typical	0.35 dB

Design - Connector B	
Connector Type	SC duplex
Ferrule Material	Ceramic
Housing Material	Composite
Housing Color	Black
Boot Color	Aqua

Optical Specifications - Connector B	
Insertion Loss, Typical	0.35 dB

Cable Design	
Fiber Count	2
Outer Jacket Color	Aqua

Mechanical Characteristics Cable	
Nominal Outer Diameter	4 mm (0.16 in)

Furcation - Connector A	
Plug Type	Heat-shrink sleeve
Plug Dimensions	25.4 x 3.5 x 5.5 mm (1 x 0.14 x 0.22 in)
Leg Diameter	2 mm
Leg Length	254 mm (+38.1 mm/-0 mm) (10 in (+1.5 in/-0 in))

Fiber Optic Jumper, 2 F, SC Duplex to SC Duplex, Zipcord Cable, Riser, 2.0 mm legs

50 µm multimode (OM3), 3 m

Furcation - Connector B	
Plug Type	Heat-shrink sleeve
Plug Dimensions	25.4 x 3.5 x 5.5 mm (1 x 0.14 x 0.22 in)
Leg Diameter	2 mm
Leg Length	254 mm (+38.1 mm/-0 mm) (10 in (+1.5 in/-0 in))

Chemical Characteristics	
RoHS	Free of hazardous substances according to RoHS 2011/65/EU

Fiber Specifications

Optical Characteristics (cabled)	
Fiber Core Diameter	50 µm
Fiber Category	OM3
Fiber Code	T
Performance Option Code	80
Wavelengths	850 nm / 1300 nm
Maximum Attenuation	2.8 dB/km / 1.0 dB/km
Serial 1 Gigabit Ethernet	1000 m / 600 m
Serial 10 Gigabit Ethernet	300 m / -
Min. Overfilled Launch (OFL) Bandwidth	1500 MHz*km / 500 MHz*km
Minimum Effective Modal Bandwidth (EMB)	2000 MHz*km / -

Ordering Information

Part Number	575702T5120003M
Product Description	Fiber Optic Jumper, 2 F, SC Duplex to SC Duplex, Zipcord Tight-Buffered Cable, Riser, with 2.0 mm legs, 50 µm multimode (OM3), 3 m
EAN Code	4056418178493
Length	3 m (9.8 ft)

Shipping Information

Units per Delivery	1/1

Fiber Optic Jumper, 2 F, SC Duplex to SC Duplex, Zipcord Cable, Riser, 2.0 mm legs

50 µm multimode (OM3), 3 m

Notes

RoHS COMPLIANT

Corning Optical Communications LLC • PO Box 489 • Hickory, NC 28603-0489 USA
800-743-2675 • FAX: 828-325-5060 • International: +1-828-901-5000 • www.corning.com/opcomm
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Product: FX Adapter Strip SC Simplex

FX Adapter Strip SC Simplex

Product Description

FiberExpress Adapter Strip, loaded 6 SC Simplex Singlemode Adapters Black

Technical Specifications

Product Overview

Environmental Space:	Indoor
Suitable Applications:	FiberExpress Solutions, Backbone, Telecommunications Room, Main Distribution Room

Construction

Weight:	0.093 kg
Height:	1 m
Width:	6.5
Length:	1.08 ft

Physical Specifications

Max Capacity:	6 Fibers, 6 SC Simplex Singlemode Adapter

Mechanical Characteristics

Front Connection:	Flush
Termination Style:	Front
Termination Type:	Front and Rear
Type of Connection:	Mated Connection
Cable/Connector Retention:	11.250 lbs.
Connector/Hardware Retention:	11.25 lbs
Durabilities@Termination1:	500 cycles

Temperature Range

Operating Temperature Range:	-10°C To +60°C
Storage Temperature Range:	-40°C To +75°C

Product Material

Materials

Element	Description	Color
Plastic - UL94V-1	Connector Body	Blue
SC	Connectory Body Type	
Zirconia-Ceramic	Adapter Sleve	

Related Part Numbers

Included Parts:	Dust Caps

Variants

Item #	Color	Port Count

AX100538+TW	Black	6 Port
AX100533+TW	Gray	12 Port

Product Notes

Packaging:	Individually packaged in a plastic bag. Standard pack of 30 units.
Notes:	For additional information about this product, visit our web site at http://www.belden.com.

History

Update and Revision:	Revision Number: 0.54 Revision Date: 11-09-2022

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12U 600 x 550 - Wall Mount - Double Section Cabinet

Avalon Cabinets are feature-rich rack enclosures optimized for easy installation, managing cables, integrating power distribution, and maximizing airflow. These racks are multi-functional rack enclosures designed to meet current IT market trends and applications ranging from high density computing and networking to broadcast and audio-video.

Dimensions

Type	19 inch standard
Size	12U
Width	600 mm
Height	600 mm
Depth	550 mm
Gross Weight	28 KG (Including the packaging)
Net Weight	26 KG



Cabinet Features

- 19" mounting angles
- Front Glass Door with Lock (Tempered Glass)
- Doors can be mounted to be opening from either side
- Lock on the front door with duplicate keys
- Removable side panels
- Extra cage nuts provided
- Earthing screws
- Cooling fan Optional with effective ventilation

IN ELECTRICAL ROOM

Technical Specifications

- All steel construction
- Frame made of 1.2 mm thick SPCC
- Fixed shelves made of 1.2 mm thick SPCC (Optional)
- Mounting angles made of 2.0 mm thick steel
- Strong structure of individually fabricated components
- Manufactured using CNC machine
- Surface Finish: Matt Black Epoxy Powder Coated Paint (RAL 9005)

Cooling fan with effective ventilation (Optional)

- Cooling Fan : Lower noise, Less than 48db, Air flow 50-110 CBM/H

Ordering Information

Size	Width	Depth	Part No.
12U	600 mm	550 mm	AN-WM12U600X550

9U 600 x 600 - Wall Mount - Single Section Cabinet

Avalon Cabinets are feature-rich rack enclosures optimized for easy installation, managing cables, integrating power distribution, and maximizing airflow. These racks are multi-functional rack enclosures designed to meet current IT market trends and applications ranging from high density computing and networking to broadcast and audio-video.

Dimensions

Type	19 inch standard
Size	9U
Width	600 mm
Height	500 mm
Depth	600 mm
Gross Weight	26 KG (Including the packaging)
Net Weight	24 KG



Cabinet Features

- 19" mounting angles
- Front Glass Door with Lock (Tempered Glass)
- Doors can be mounted to be opening from either side
- Lock on the front door with duplicate keys
- Removable side panels
- Extra cage nuts provided
- Earthing screws
- Cooling fan Optional with effective ventilation

Technical Specifications

IN OFFICE AND SCALE HOUSE

- All steel construction
- Frame made of 1.2 mm thick SPCC
- Fixed shelves made of 1.2 mm thick SPCC (Optional)
- Mounting angles made of 2.0 mm thick steel
- Strong structure of individually fabricated components
- Manufactured using CNC machine
- Surface Finish: Matt Black Epoxy Powder Coated Paint (RAL 9005)

Cooling fan with effective ventilation (Optional)

- Cooling Fan : Lower noise, Less than 48db, Air flow 50-110 CBM/H

Ordering Information

Size	Width	Depth	Part No.
9U	600 mm	600 mm	AN-WM9U600X600

Cabinet Fan

Avalon Rack Fans are used to help facilitate air flow within the rack by adding ventilation where it is needed the most. Rack fans can be mounted in cabinet doors, cabinet sides, and cabinet roofs.

Dimensions

- 120mm×120mm×38mm



Specifications

- Rated Voltage : 220 - 230 V
- Frequency: 50 / 60 Hz
- Rated Speed: 2600 / 3000 RPM
- Air flow: 75 / 90 CFM
- Rated Currant : 10 – 13 Amps
- Input Power : 30 Watts
- CE Approved
- Noise Level: less than 45db
- Motor Protection: Impedance Protected
- Operation Temperature: 20 degree C – 80 degree C
- Weight : 550 gm
- Color Black

Materials

- Die-Cast Aluminum
- Lead wire: 22 AWG
- Blade : Thermo plastic

Applications

- 19" Racks and cabinets

Ordering Information

Part No	Description
AN-FN13A-20	Cabinet Fan

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᔾᔨᕐᓯᐊᑯᓂᑦ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 20/02/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 019 R1 **Referencing** 283100
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Edwards

Descriptions / comments

Fire Alarm System

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

[X]	REVIEWED
[ ]	REVIEWED AS NOTED
[ ]	REVISE & RESUBMIT

DC SD NO. ELE-019
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Feb. 22, 2023

DILLON CONSULTING

Drawing on the best

CUSTOMER: **Yvon Roy inc**

PROJECT: Iqualuit-Solid Waste Facility

DATE: 01-Feb-2023





Troy Life & Fire Safety Ltd.

EDWARDS STRATEGIC PARTNER

www.troylfs.com

1-877-441-8769

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LIFE SAFETY & INCIDENT MANAGEMENT

Intelligent Fire Alarm Systems

iO64, iO1000



FM APPROVED
FDNY COA 6227
7165-1657: 0244
S3000

Overview

EDWARDS brand intelligent life safety systems offer the power of high-end intelligent processing in configurations that deliver uncomplicated solutions for small to mid-sized applications. With intelligent detection, electronic addressing, automatic device mapping, optional Ethernet® connectivity, and a full line of easily-configured option cards and modules, these flexible systems offer versatility that benefits building owners and contractors alike.

The iO64 provides one Class A or Class B intelligent device loop that supports up to 64 device addresses, and two Class B Notification Appliance Circuits (NACs). Optional Class A device wiring is available with the use of a module.

The iO1000 provides one Class A or Class B intelligent device loop that supports up to 250 device addresses. Loop controller modules may be added in combination to expand total system capacity in 250-point increments to up to 1,000 device addresses. The iO1000 panel includes four NACs that may be wired for either Class A or Class B operation.

The RZI16-2 module adds even more capacity to iO installations by adding up to 16 conventional device circuits and two additional notification appliance circuits. This makes them an ideal retrofit solution that can accommodate new intelligent detectors, as well as existing conventional devices.

iO Series supports a wide range of high-end features, including:

- Supports 10-Year Carbon Monoxide detectors
- R-Series remote annunciators
- SIGA-REL Releasing Modules
- Fully integrated CO detection using Signature Series detectors with or without audible signaling

Features

- Auto-programming reduces installation time
- Supports Signature Series intelligent modules and detectors
- Combines the Signature intelligent releasing module with Signature multisensor detectors for reliable fire suppression
- Electronic addressing with automatic device mapping
- Optional Ethernet port (SA-ETH) for central station monitoring service, programming, diagnostics and a variety of system reports.
- Two programmable switches with LEDs and custom labeling
- Supports Genesis horn silence over two wires, and UL 1971-compliant strobe synchronization
- Optional multi-protocol Field Server Bridge for interface to 3rd party Building Management Systems.
- Ground fault detection by module
- Supports up to eight serial annunciators, (LCD, LED-only, and graphic interface)
- Can use existing wiring for most retrofit applications
- Upload/download remotely or locally
- Optional USB module for local printing or programming using the configuration utility on a technician's laptop.
- Two-level maintenance alert reporting
- Pre-alarm and alarm verification by point
- Adjustable detector sensitivity
- 4 x 20 character backlit LCD display
- Optional earthquake hardening: seismic Importance Factor 1.5
- Standalone operation
- Alarm ON command manually activates alarm condition
- Form C contacts for alarm and trouble, Form A for supervisory

DATA SHEET E85001-0135
Not to be used for installation purposes. Issue 2.0

Application

EDWARDS iO Series life safety systems are powerful intelligent solutions for small to mid-sized buildings. Advanced intelligent technology delivers the benefits of flexible system installation, while clean and easy-to-operate user interfaces make panel operation and system maintenance quick and intuitive.

The smart choice

Signature Series electronic addressing eliminates the tedium of setting dipswitches, and automatic device mapping ensures that each device resides on the system at its correct location. Meanwhile, innovative programming allows the designer to customize the system to precisely suit the needs of the building owner.

Reliability you can count on

The inherent fault-tolerant characteristics of Analog/Addressable Technology boosts the reliability of EDWARDS fire alarm systems. When combined with iO Series smoke and heat detectors, these systems deliver a level of dependability not previously available for small to mid-sized applications. All EDWARDS systems are built to exacting reliability benchmarks.

Clear-cut remote annunciation

Remote annunciation is a strong suit of the iO Series fire alarm systems. Up to eight annunciators can be installed on a single system. Compatible annunciators include a range of LED and LCD models that provide zone or point annunciation, as well as common control capabilities. iO control panels also supports graphic annunciation with optional RA Graphic Annunciator interface modules. Each interface provides common control and 32 LEDs.

Flexibility built right in

Two fully-programmable front panel switch/LED combinations provide an added measure of flexibility. Their slide-in labels take the mystery out of custom applications, and present a clean finished appearance.

Perfect for retrofits

EDWARDS iO Series control panels are particularly well-suited to retrofit applications. All connections are made over standard wiring – no shielded cable required. This means that in most situations existing wiring can be used to upgrade a legacy control panel to iO technology without the expense or disruption of rewiring the entire building. iO control panels also support the ingenious RZI16-2 Zone Module, which adds up to 16 conventional circuits and two NACs. This combination easily accommodates new intelligent detection alongside existing conventional circuits, making it an superior solution in the retrofit market.

Scalable IP and Cellular Communications

Optional SA-ETH module supports IP connection to a central station's Sur-Gard receiver, meeting one of the methods of communication allowed by NFPA 72 as of the 2013 Edition. Several popular third-party IP/Cellular communicators have been tested with the iO control panels and are compatibility listed to UL864. The IP/Cellular communicators meet NFPA72 2013 edition requirements for sole or secondary transmission paths. Using IP/Cellular communicators can reduce the cost of ownership by eliminating POTS lines. Please see the iO control panel compatibility documentation part number 3102353-EN for a full list of compatible communicators.

Signals with a difference

iO system NACs are configurable to fully support the advanced signaling technology of EDWARDS Genesis and Enhanced Integrity notification appliances. These devices offer precision synchronization of strobes to UL 1971 standards. For Genesis devices, enabling this feature allows horns to be silenced while strobes on the same two-wire circuit continue to flash until the panel is reset.

A complete line of accessories

iO Series life safety systems are supported by a complete line of analog/addressable detectors, modules and related equipment. Consult the Ordering Information section for details.

Programming and remote diagnostics

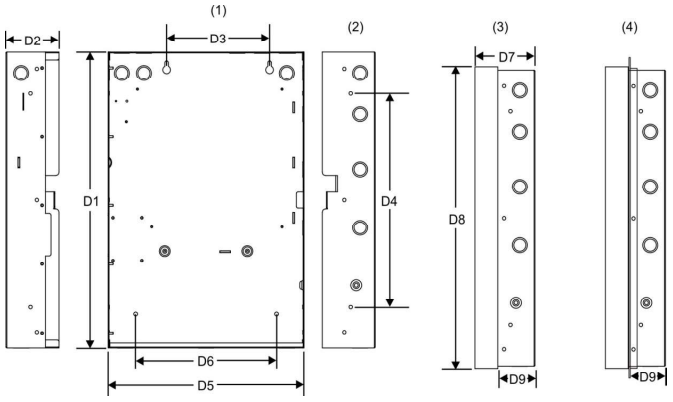
EDWARDS iO Series life safety systems are simple to set up, yet offer advanced programming features that put these small building panels into a class of their own. The auto programming feature quickly gets the panel operational using factory default settings. Basic zone and point settings can be programmed through the front panel interface, so the system is up and running in no time.

For more advanced system configuration and correlation groups programming, iO Series systems interface to a PC running compatible iO-CU software. This option offers full system configuration in the familiar Windows® operating environment. Connection is made to a laptop through the panel's optional RS-232 communications port, which can also be used to connect a system printer.

Among the many innovative features of iO Series control panels is the optional network card. This module provides a standard 10/100 Base T Ethernet® network connection that permits access to the control panel from any remote location with the correct communications protocols. The connection can be used to download to the panel from the iO-CU, or upload and view system reports using the iO-CU.

Available system reports include: Correlation groups, Device details, Device maintenance, History, Internal status, System configuration, System status, Walk test, Dialer, and CO runtime.

Dimensions



(1) Surface Mounting Holes
(2) Semi-flush mounting Holes
(3) Backbox with Door Attached
(4) Backbox with door and trim kit attached.

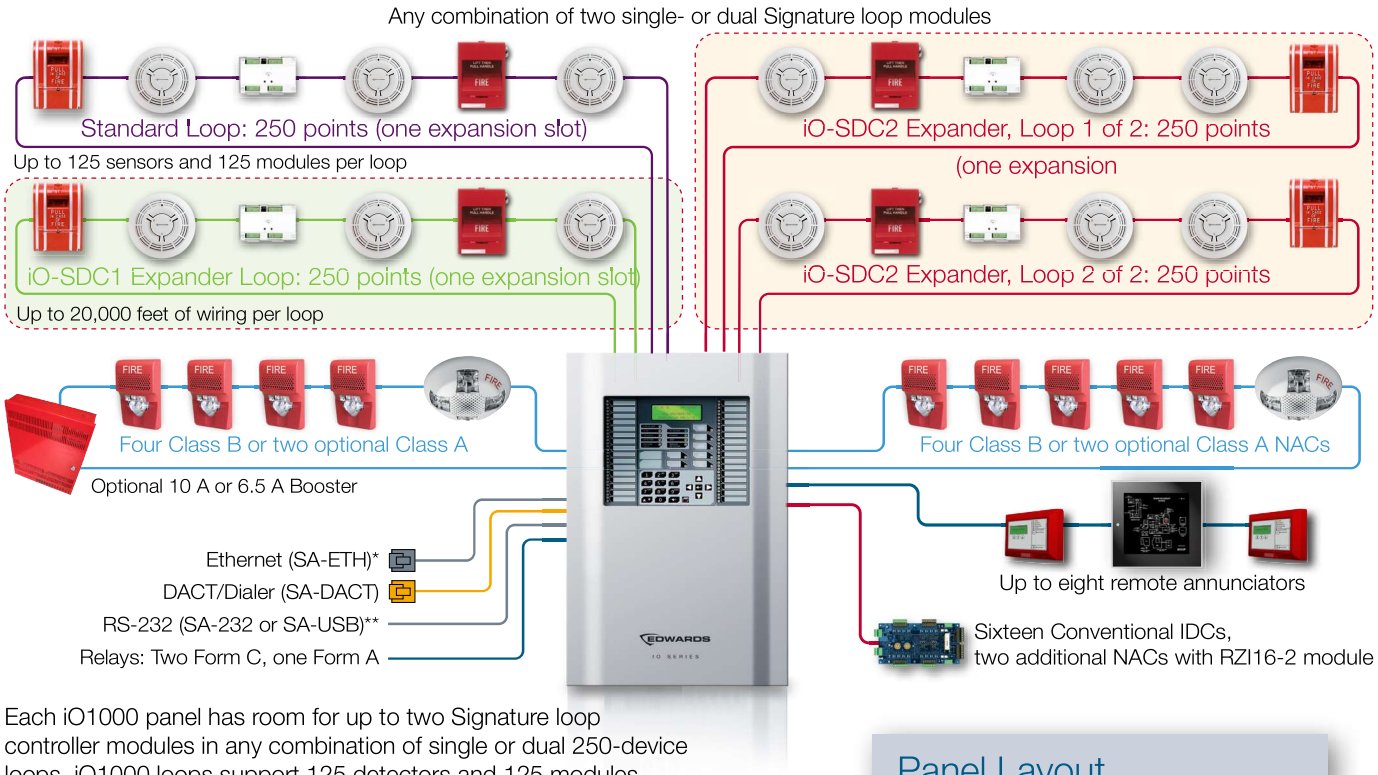
Panel dimensions, in (cm)

Model	D1*	D2	D3	D4	D5*	D6	D7	D8	D9
iO1000	28.0 (71.1)	3.85 (9.8)	9.0 (22.8)	22.0 (55.8)	15.75 (40.0)	10.25 (26.0)	4.4 (11.1)	28.2 (71.6)	2.7 (6.8)
iO64	21.5 (54.6)	3.85 (9.8)	7.5 (19.0)	15.5 (39.4)	14.25 (36.2)	10.25 (26.0)	4.5 (11.4)	21.7 (55.1)	2.7 (6.8)

* Add 1-1/2 in. (3.81 cm) to D1 and D5 dimensions for trim kit. The trim kit provides 0.75 inches (1.9 cm) of trim to the top, bottom, and sides of the backbox.

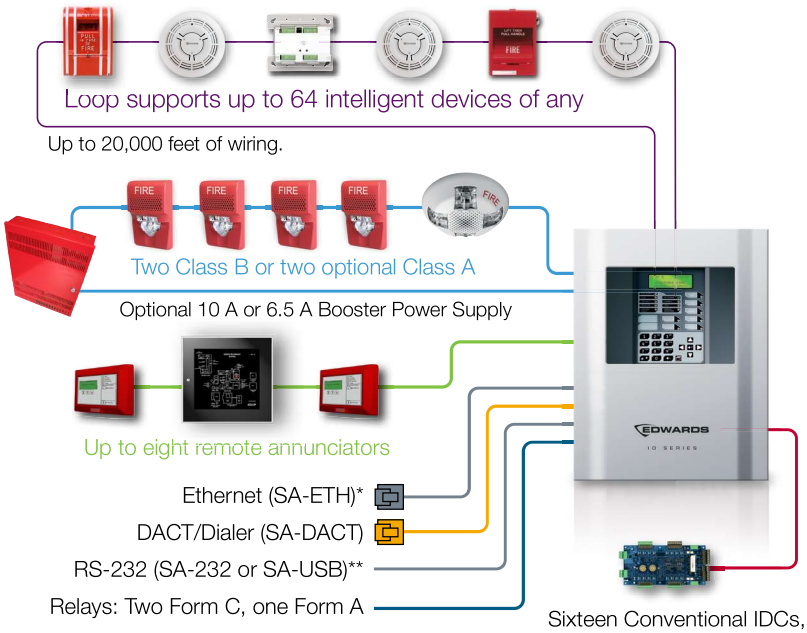
System Layout

iO1000



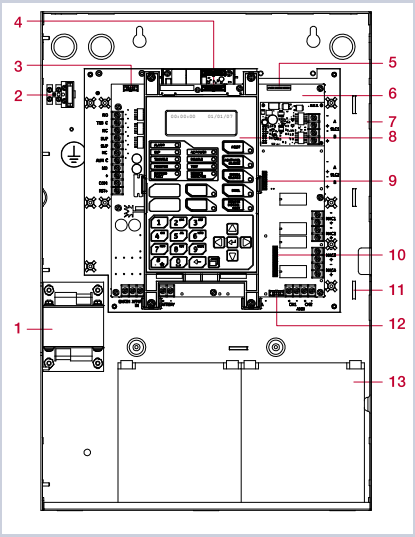
Each iO1000 panel has room for up to two Signature loop controller modules in any combination of single or dual 250-device loops. iO1000 loops support 125 detectors and 125 modules.

iO64



Each iO64 panel ships with one Signature loop controller that supports 64 devices of any type. This panel's device capacity cannot be expanded.

Panel Layout



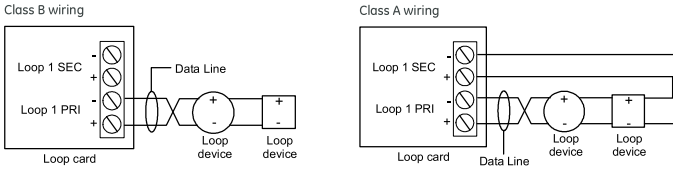
1 Transformer
2 Main AC wiring block & fuse holder
3 RS-232 card connector (J3)
4 Dialer card connection (J8)
5 Ethernet card connector (J1)
6 Main circuit board
7 Panel backbox enclosure
8 Operator interface
9 SLC card connector (J7)
10 Class A card connector (J2)
11 Tie wrap mounts
12 LED expander connector (J6)
13 Standby batteries

*SA-ETH supports: (1) remote connectivity for diagnostics & programming, (2) Central station monitoring to Sur-Gard IP Receivers.
**RS-232 supports: (1) Printer, (2) Programming Interface, (3) Use of Field Server Briidge (SA-FSB) for 3rd party Building Management Systems interface.

Signature device loop

The system provides one Signature device loop circuit with a total capacity of 125 detectors and 125 module addresses. The loop circuit is supervised for opens, shorts, and grounds.

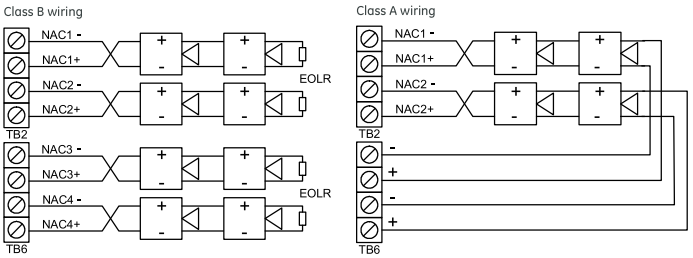
Circuit specifications	iO1000	iO64
Device loops	One Class B or A loop, supporting 125 detectors and 125 modules. Expandable to four loops.	One Class B or A loop, supporting 64 devices of any kind.
Communication line voltage	Maximum 20 V peak-to-peak	
Circuit current	0.5 A max	
Circuit impedance	66Ω total, 0.5 µF, max	
Isolators	64 maximum	
Signal Synchronization	Supported on a system-wide basis (all device loops) when using a SIGA-CC1S or SIGA-MCC1S module and Genesis or Enhanced Integrity notification appliances.	



Notification appliance circuits (TB2)

iO1000 control panels come equipped with four notification appliance circuits. iO64 control panels come with two NACs. Each circuit can be individually configured for continuous, temporal, synchronized, and coded output.

Specifications	iO1000	iO64
Circuit Type	4 Class B or 2 Class A	2 Class B or 2 Class A with SA-CLA module
Voltage	24 VFWR	
Current	6.0 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz. 5.0 A total, 2.5 A max. per circuit at 230 VAC 50 Hz.	3.75 A total, 2.5 A max. per circuit at 120/230 VAC 60 Hz. 3.0 A total, 2.5 A max. per circuit at 230 VAC 50 Hz.
Impedance	26 Ω total, 0.35 µF max	
EOLR	15 K Ω, ½ W	
Synchronization	Supported system-wide	



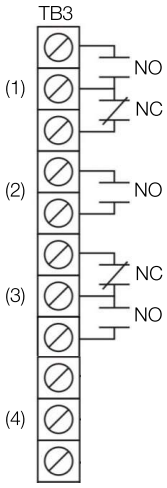
Marking indicates output signal polarity when the circuit is active. Polarity reverses when the circuit is not active. Wire notification appliances accordingly. Notification appliance polarity shown in active state.

Auxiliary & smoke power outputs (TB3)

The control panel provides two auxiliary power outputs that can be used for powering ancillary equipment such as remote annunciators and two wire smoke detectors. Aux 2 can be software selected to operate continuously. The circuit is supervised for shorts and grounds.

Circuit specifications	
Circuit voltage range	21.9 to 28.3 V
Resettable circuit (Aux power 2)	24 VDC nominal at 500 mA
Continuous circuit (Aux power 1)	24 VDC nominal at 500 mA. Use this circuit for powering two-wire smoke detectors.

Note: Any current above 0.5 amp connected to both Aux 1 and 2 will reduce the total available NAC power by that amount.



(1) Trouble
(2) Supervisory
(3) Alarm
(4) Smoke/Aux

Alarm, trouble, and supervisory relay (TB3)

The trouble relay is normally-open, held closed, and opens on any trouble event or when the panel is de-energized. The supervisory relay is normally-open, and closes on any supervisory event. The alarm relay changes over on any alarm event.

Relay specifications

	Alarm	Trouble	Supervisory
Type	Form C		Form A
Voltage	24 VDC at 1 A resistive	24 VDC at 1 A resistive	

Relay circuits can only be connected to power-limited sources.

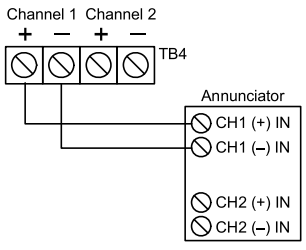
Annunciator loop (TB4)

The control panel provides a connection for up to eight serially driven and supervised remote annunciators.

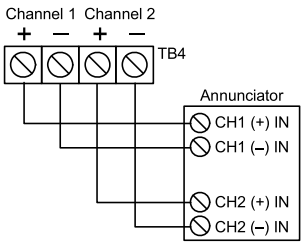
Circuit specifications

Device loops	Class B (Style Y) or Class A (Style Z)
Circuit voltage	2.55 V
Circuit current	30 mA max
Circuit impedance	Up to 8 annunciators or 4000 feet

Class B



Class A



Option Cards

EDWARDS iO Series panels are supported by a complete line of modules and related equipment that enhance performance and extend system capabilities. Option cards plug directly into the control panel main circuit board or are connected to it with a ribbon cable. After installation, terminals remain accessible. The cabinet provides ample room for wire routing, keeping wiring neat at all times.

Single and Dual Loop Controller Cards

The iO-SDC1 is a single loop controller card that can be used with the iO64 as a replacement for the standard 64-point loop, or with the iO1000 as a 250-point expansion module.

The iO-SDC2 is a 500-point dual loop controller card for the iO1000 that provides two SLC circuits, each with 125 detector addresses and 125 module addresses.

Specifications	iO-SDC1	iO-SDC2
Device Addresses	iO1000: one loop, 250 device addresses iO64: 64 addresses	iO1000: two loops, 500 device addresses
Wiring	Class B or Class A	
Operating Voltage	24 VDC	
Operating Current (fully loaded loop)	Standby: 55 mA Alarm: 80 mA	Standby: 45 mA Alarm: 70 mA
Note: These ratings do not include the use of two-wire smoke modules.		
Communication Line Voltage	Max. 20.6 V peak-to-peak	
Terminal Rating	12 to 18 AWG (0.75 to 2.5 mm^2)	
Circuit Current	0.5 A max.	
Max total loop resistance	66 Ω	
Max total loop capacitance	0.5 µF	
Isolators	64 isolators maximum per loop (total both isolator bases and modules)	
Ground Fault Impedance	0 to 5 kΩ	
Operating Environment	32 to 120°F (0 to 49°C) 0 to 93% noncondensing at 90°F (32°C)	

SA-ETH Ethernet Interface Card/IP Communicator

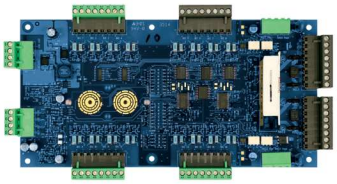
The SA-ETH card provides a standard 10/100 Base T Ethernet network connection for connecting to an intranet, a local network, or the Internet. The card supports IP connectivity for monitoring services by a supervising station to meet NFPA 72 Chapter 26. The Ethernet card uses the FIBRO protocol to communicate with Sur-Gard System receivers (see below). The card can be used to download configuration programming from the iO-CU tothe panel.



The Ethernet card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

SA-ETH specifications	
Ethernet	10/100 Base-T
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)
Compatible Sur-Gard Receivers	SG-System I, II, III, IV and 5

RZI16-2 Remote Zone Interface Module



The RZI16-2 Addressable Remote Zone Interface Module is an addressable device that provides connections for sixteen Class B Initiating Device Circuits and two Class B Supervised Output Circuits. The inputs and outputs can be configured individually for several device types.

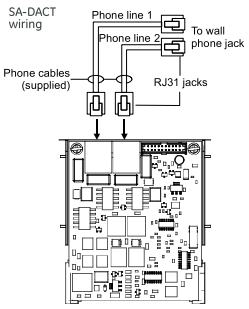
It requires 18 consecutive addresses on the Signaling Line Circuit (SLC). Addresses are assigned electronically. There are no address switches to set.

The RZI16-2 incorporates two 8-segment DIP switches that are used to select the Alarm or Supervisory default device type for each of the 16 IDC circuits. The module also includes one 4-segment DIP switch used to select the default Relay or NAC output device type. Device types other than the default are accomplished through programming.

RZI16-2 Specifications	
Voltage	
24V/Aux nominal:	24 VDC
Supervisory current:	250 mA at 24 VDC nominal
Alarm Current	1000 mA
24V/Aux minimum:	18.4 VDC
24V/Aux maximum:	26.4 VDC
NAC1, NAC2 nominal:	24 VDC
Current	
Standby current for 4.7 k EOL (U.S.)	4.8 mA/ circuit
Standby current for 3.9 k EOL (Canada)	5.7 mA/ circuit
Alarm current at nominal voltage	31.1 mA/ circuit
Relay outputs	
Quantity	2
Type Rating (pilot duty)	Programmable 24 VDC at 2.5 A
Input circuit wiring resistance	25 Ω per wire
Initiating device circuits	
Quantity	16
EOL resistor	4.7 kΩ (U.S.); 3.9 kΩ Canada
Zone voltage	22.78 V for 4.7 kΩ (U.S.) 22.08 V for 3.9 kΩ (Canada)
Alarm current	31.1 mA/ channel at nominal voltage
Alarm impedance range	< 680 Ω
Trouble impedance range	> 5.55 kΩ
Supervised output circuits	
EOL resistor	15 kΩ
Quantity	2
Short circuit detection	< 2.6 kΩ
Open circuit detection	> 61.9 kΩ
Contact ratings	24 VDC at 2.5 A (5 A for two NACs)
Compatible cabinets	MFC-A, iO1000, APS

SA-DACT Dialer

The SA-DACT provides communications between the control panel and the central station over a telephone line system. It transmits system status changes (events) to a compatible digital alarm communicator receiver over the public switched telephone network. The dialer is capable of single, dual, or split reporting of events to two different account and telephone numbers. The modem feature of the SA-DACT can also be used for uploading and downloading panel configuration, history, and current status to a PC running the iO-CU.



The dialer phone lines connect to connectors on the dialer's main circuit board. Phone line 1 connects to connector J4 and phone line 2 connects to connector J1.

The SA-DACT queues messages and transmits them based on priority (alarm, supervisory, trouble, and monitor). Activations are transmitted before restorations.

The SA-DACT is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.

SA-DACT specifications	
Phone line type	One or two loop-start lines on a public, switched network
Phone line connector	RJ-31/38X (C31/38X)
Communication formats	Contact ID (SIA DC-05)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)

Compatible DACRs		
Receiver	**Models**	**Formats**
Ademco	685	Contact ID
FBII	CP220	Contact ID
Osborne-Hoffman	OH 2000	Contact ID
Bosch	D6600	Contact ID
Silent Knight	9800	Contact ID
Sur-Gard	SG-MLR1, MLR2	Contact ID

The SA-USB Interface Card

The SA-USB Interface Card provides a USB connection to a supported printer or a connection to a PC. The card can be used for connecting a printer to the control panel to print system events. The card can also be used for uploading and downloading panel configuration, history, and current status to a PC running the configuration utility (CU).

SA-USB specifications	
Operating voltage	24VDC
Current Standby/Alarm	13 mA, max 20mA
Universal Serial Bus (USB) ports	1 USB Type A –host port J3 (printer connection) 1 USB Type B – device port J4 (CU connection)
Supported Printer	PT-1S
Printer communication speed	9600 baud
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing

SA-232 RS-232 interface

The SA-232 card provides an RS-232 interface with iO panels. It can be used for connecting a printer to the control panel to print system events. The card also can be used for connecting a computer to download a configuration program from the iO-CU to the control panel.

The RS-232 card is installed on the plastic assembly and connects to the main circuit board via a ribbon cable.



SA-232 specifications	
Operating voltage	Standard EIA-232
Terminal rating	12 to18 AWG (0.75 to 2.5 sq mm)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)

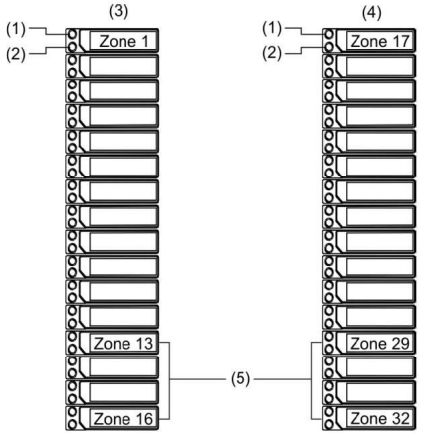
SA-CLA Class A Module (iO64 only)

The SA-CLA card provides Class A capability for NAC wiring. Its terminal block provides the wiring connection for NAC return wiring. The card is required for annunciator Class A wiring even though this wiring does not return to the SA-CLA card. The SA-CLA is compatible with iO64 control panels only. iO1000 panels are Class A Ready. The SA-CLA is installed directly to the control panel circuit board using its plastic standoffs and plug connection.

SA-CLA specifications	
Operating voltage	24 VFWR
Operating current	3.75 A FWR total at 120/230 VAC 60 Hz 3.0 A FWR total at 230 VAC 50 Hz 2.5 A max per circuit
Circuit impedance	26 ohms, 0.35uF
Terminal rating	12 to18 AWG (0.75 to 2.5 sq mm)
Operating environment	
Temperature	32 to 120°F (0 to 49°C)
Humidity	0 to 93% RH, noncondensing at 90°F (32°C)

D16L-iO LED Display Expander (iO1000 only)

The D16L-iO LED Display Expanders provide LED annunciation for up to 16 zones. It provides two LEDs for each zone. Two D16L-iO LED display expanders can be installed in each iO1000 panel.



Specifications

	iO64	iO1000
Device loops	1 loop Class B or Class A (Styles 4, 6, 7) supporting up to 64 device addresses (any combination of detectors and modules) Maximum T-taps: 63 (each device can be on its own branch)	1 loop, expandable to 4, Class A or B (Styles 4, 6, 7), each loop supporting up to 250 device addresses (125 detectors and 125 modules max.). Addresses 1 to 125 are for detectors and addresses 126 to 250 are for modules Maximum T-taps/loop: 124
Notification appliance circuits	2 Class B (Style Y), Class A (Style Z) optional 3.75 A FWR total at 120/230 VAC 60 Hz 3.0 A FWR total at 230 VAC 50 Hz 2.5 A FWR each max. per circuit	4 Class B (Style Y) or 2 Class A (Style Z) 6.0 A FWR total at 120/230 VAC 60 Hz 5.0 A FWR total at 230 VAC 50 Hz 2.5 A FWR each max. per circuit
Primary power	120 VAC, 60 Hz, 1.3 A max. 230 VAC, 50-60 Hz, 0.62 A max.	120 VAC, 60 Hz, 2.0 A max. 230 VAC, 50-60 Hz, 0.97 A max.
Base panel current standby	155 mA	172 mA
Base panel current alarm	204 mA	267 mA
Input zones	16 max.	32 max.
Remote annunciator	8 drops max., RS-485 Class B, Class A is optional Data line length: 4,000 ft. (1,219 m)	8 drops max., RS-485 Class A or B Data line length: 4,000 ft. (1,219 m)
Operating voltage	24 VDC panel	
Auxiliary power output circuit	Aux power 1: 500 mA, 24 VDC (1 A possible if you reduce total available NAC power by 500 mA) Aux power 2: 500 mA, 24 VDC Output: 28.3 to 21.9 VDC, special application *Note: For a list of compatible devices, see the iO64 and iO1000 Series Compatibility List (P/N 3102353-EN)*	
Loop circuit	Maximum loop resistance: 66 Ω Maximum loop capacitance: 0.5 µF Communication line voltage: Maximum 20.6 V peak-to-peak Operating current (fully loaded loop) Stand by: 55 mA/45 mA Alarm: 125 mA/115 mA (not including two-wire smoke modules) Circuit current: 0.5 A max. Style 4, 6, and 7 wiring Max. resistance between isolators: Limited only by overall wire run lengths 64 isolators maximum per loop (total both isolator bases and modules)	
Batteries	Type: Sealed lead acid Voltage: 24 VDC Charging current: 2.47 A max. Amp hour capacity: 26 Ah Standby operation: 24 hour or 60 hour Placement: Up to two 10 Ah batteries will fit in the iO64 control panel cabinet and two 18 Ah batteries will fit in the iO1000 control panel cabinet. If larger batteries are required, use an EDWARDS battery cabinet.	
SA-DACT dialer	Phone line type: One or two loop-start lines on a public, switched network Phone line connector: RJ-31/38X (C31/38X) Communication formats: Contact ID (SIA DC-05) Operating current Standby/Alarm: 41 mA Max.: 100 mA FCC registration number: GESAL01BSADACT Industry Canada Registration number: 3944A-SADACT Ringer equivalence number: 0.1B	
Ground fault impedance	0 to 5 kΩ	
Alarm contact	Form C N.O. 24 VDC at 1 A (resistive load)	
Trouble contact	Form C 24 VDC at 1 A (resistive load)	
Supervisory contact	Form A N.O. 24 VDC at 1 A (resistive load)	
Environmental	Temperature: 0 to 49°C (32 to 120°F) Relative humidity: 0 to 93% noncondensing	
Terminal rating	All terminals rated for 12 to 18 AWG (0.75 to 2.5 mm^2)	

Ordering Information

Part	Description
iO1000 Fire Alarm Systems	
IO1000G	Four loop system with one 250-point loop installed. 110v, gray door.
IO1000G-2	Four loop system with one 250-point loop installed. 230v, gray door.
IO1000G-2-PG	Four loop system with one 250-point loop installed. 230v, gray door, Portuguese.
IO1000G-2-SP	Four loop system with one 250-point loop installed. 230v, gray door, Spanish.
IO1000G-CA	Four loop system, one 250-point loop installed. 110v, gray door, LED strips, Canada.
IO1000GD	Four loop system, one 250-point loop installed. 110v, gray door, with dialer.
IO1000G-F	Four loop system, one 250-point loop. 110v, gray door, LED strips, French Canada.
IO1000G-PG	Four loop system with one 250-point loop installed. 110v, gray door, Portuguese.
IO1000G-SP	Four loop system with one 250-point loop installed. 110v, gray door, Spanish.
IO1000R	Four loop system with one 250-point loop installed. 110v, red door.
IO1000R-2	Four loop system with one 250-point loop installed. 230v, red door.
IO1000RD	Four loop system, one 250-point loop installed. 110v, red door, with dialer.
SA-TRIM2	iO1000 Flush mount trim, black.
iO64 Fire Alarm Systems	
IO64G	One loop system with one 64-point loop installed. 110v, gray door.
IO64G-2	One loop system with one 64-point loop installed. 230v, gray door.
IO64G-2-PG	One loop system with one 64-point loop installed. 230v, gray door, Portuguese.
IO64G-2-SP	One loop system with one 64-point loop installed. 230v, gray door, Spanish.
IO64GD	One loop system, one 64-point loop installed. 110v, gray door, with dialer.
IO64GL	One loop system, one 64-point loop installed. 110v, gray door, English Canada.
IO64GL-F	One loop system, one 64-point loop installed. 110v, gray door, French Canada.
IO64G-PG	One loop system with one 64-point loop installed. 110v, gray door, Portuguese.
IO64G-SP	One loop system with one 64-point loop installed. 110v, gray door, Spanish.
IO64R	One loop system with one 64-point loop installed. 110v, red door.
IO64R-2	One loop system with one 64-point loop installed. 230v, red door.
IO64RD	One loop system, one 64-point loop installed. 110v, red door, with dialer.
SA-TRIM1	iO64 Flush mount trim, black
Option Cards	
iO-SDC1	Expansion module, one 250-device loop.
iO-SDC2	Expansion module, two 250-device loops, 500 devices total. For iO1000 only.
RZI16-2	Remote Zone Interface Module. 16 Class B IDCs, 2 Class B Output. Includes bracket.
SA-DACT	Dual Line Dialer/Modem, supports Contact ID, mounts in cabinet on base plate.
SA-232	RS-232 Serial Port for connection to printers & computers, mounts in cabinet.
SA-ETH	Ethernet Port, IP Communicator, mounts in cabinet on base plate.
SA-CLA	Class A adapter module. Provides Class A capacity on NACs. Mounts in cabinet on main board. iO64 systems only.
SA-FSB	Field Server Bridge for connection to 3rd Party Building Management Systems. Supports BACnet and Modbus protocols. Mounts in the MFCA cabinet using the FSB-BRKT2 mounting plate. See separate SA-FSB datasheet E85010-0156 for additional information.
SA-USB	RS-232 Serial port for connection to printers & computers, mounts in cabinet.
D16L-iO-2	LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to right of LCD display for zones 17-32. For iO1000 only.
D16L-iO-1	LED Annunciator module, 16 X 2-LED zones (4 programmable for sup). Mounts in cabinet to left of LCD display for zones 1-16. For iO1000 only.
D8RY-iO-2	Canada only: LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet. For iO1000 only.
D8RY-iO-1	Canada only: LED Annunciator module, two LEDs per zone, 16 zones (4 alarm only, 8 supervisory only, 4 alarm or supervisory). Mounts in cabinet. For iO1000 only.
Accessories	
CTM	City Tie Module. 2-gang. Connection to a local energy fire alarm box.
MFC-A	Multifunction Fire Cabinet, 8" x 14" x 3.5" - red.
SIGA-REL	Releasing Module
PT-1S	System Printer
BC-1	Battery Cabinet. 14.0" x 18.25" x 7.25". Holds two 12V24A batteries.
BC-1R	Battery Cabinet - Red. 14.0" x 18.25" x 7.25". Holds two 12V24A batteries.
BC-1EQ	Seismic hardening Kit for iO series panels. Includes battery hardening for BC-1 enclosure and components to harden panel internal components.
Programming Tools	
iO-CU	IO Series configuration and diagnostics utility.
260097	RS232 cable, 4 conductor, DB9 PC interface

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Contact us

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Website: edwardsfiresafety.com

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IDEALPOWER

ELA-12V-7.2AH 12V 7.2Ah (.187)

General Application

ELA-12V-7.2AH is a general purpose battery with 3~5 years in standby service or more than 400 cycles at 50% depth of discharge in cycle service.

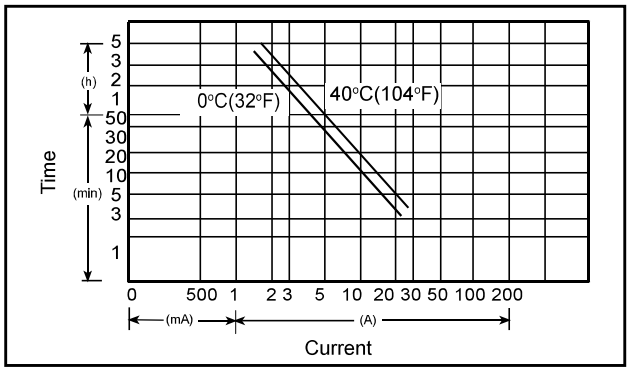
Specification

NOMINAL VOLTAGE	: 12 V
NOMINAL CAPACITY(20 hr)	: 7.2 Ah
DIMENSIONS	
TOTAL HEIGHT	: 100 mm (3.94 inches)
CONTAINER HEIGHT	: 94 mm (3.70 inches)
LENGTH	: 151 mm (5.94 inches)
WIDTH	: 65 mm (2.56 inches)
WEIGHT	: APPROX 2.45 Kg (5.40 lbs)
CONTAINER MATERIAL	: UL94HB ABS
	: UL94V-0 ABS
INTERNAL RESISTANCE(25°C , 77 °F)	: ~22mΩ
DISCHARGE CAPACITY UNDER DIFFERENT TEMPERATURES	
40°C	: ~102%
25°C	: ~100%
0 °C	: ~85%

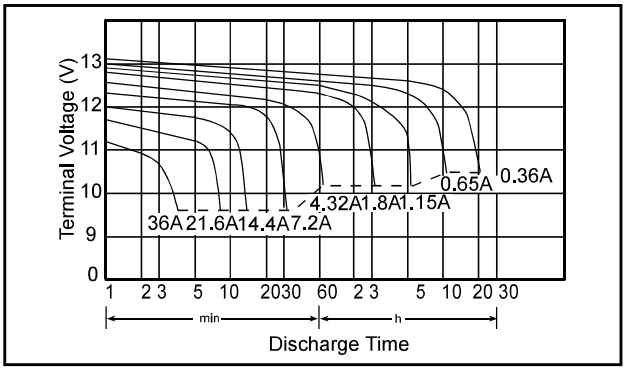
Characteristics

CAPACITY 25 °C / 77 °F	
20 hr @ 0.36 A	: 7.2 Ah
5 hr @ 1.15A	: 5.76 Ah
1 hr @ 4.32 A	: 4.32 Ah
1 C @ 7.2 A	: 3.6 Ah
CHARGING VOLTAGE (25°C , 77 °F)	
STANDBY USE	: 13.65V±0.15 V
CYCLE USE	: 14.7V ± 0.3 V
MAX DISCHARGE CURRENT	: 90 A (5 sec)
MAX CHARGING CURRENT	: 2.16 A
SELF-DISCHARGE RESIDUAL CAPACITY(25°C , 77 °F)	
AFTER 3 MONTHS	: ~90%
AFTER 6 MONTHS	: ~82%
AFTER 12 MONTHS	: ~70%

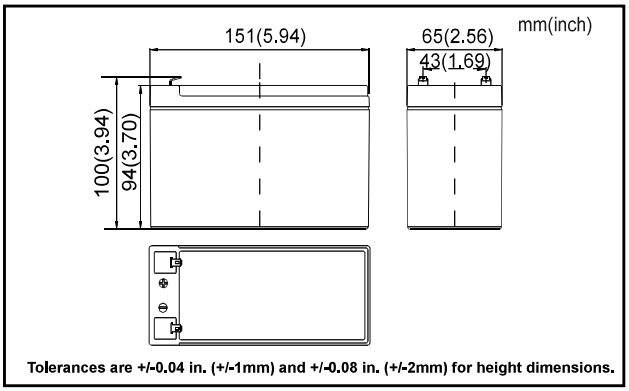
Discharge Current vs Time



Discharge Characteristics @25 °C (77 °F)

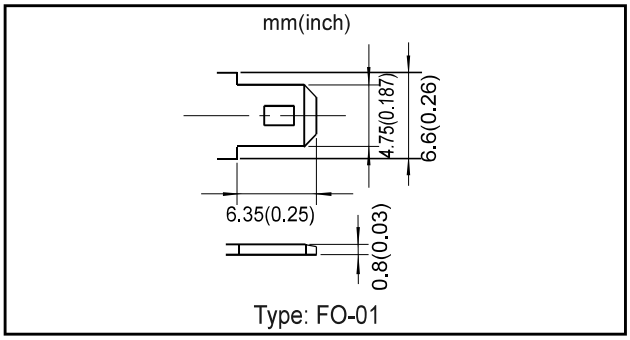


Dimensions



Tolerances are +/-0.04 in. (+/-1mm) and +/-0.08 in. (+/-2mm) for height dimensions.

Terminal



EDWARDS

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Isolator Module

SIGA-IM2



S3424

7300-1657: 0121

FM APPROVED

Overview

The SIGA-IM2 Isolator Module is part of EDWARDS's Signature Series system. This intelligent device enables part of the Signature data loop to continue operating should a short circuit occur. The module can be wired into a Class A data loop at any point.

If a fault occurs, the isolator cuts power to all devices beyond the isolator on the loop as follows:

- a short on the line causes all isolators to open within 23 msec.
- at 10 msec intervals, beginning on one side of the Class A circuit nearest the loop controller, the isolators close to provide the next isolator down the line with power.
- when the isolator next to the short closes, it reopens within 10 msec.

Once activated, the line fault isolator continuously checks the faulted side of the loop to determine if the short still exists. When the fault is corrected and system reset, the module automatically restores the entire data loop to the normal condition.

The microprocessor in every Signature module provides at least three important benefits — Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

Self-diagnostics and History Log - Each Signature Series module constantly runs self-checks to provide important maintenance information. This information is automatically updated and permanently stored in the module's non-volatile memory and is accessible for review any time using the SIGA-HDT Signature Program / Service Tool.

Automatic Device Mapping - The Signature loop controller learns keeps a map where each device's serial number address is installed relative to other devices on the data circuit.

Fast Stable Communication - Built-in intelligence means less information needs to be sent between the module and the loop controller. Other than regular supervisory polling response, the module only needs to communicate with the loop controller when it has something new to report.

Standard Features

- **Automatic device mapping**
  Each module transmits wiring information to the loop controller regarding its location with respect to other devices on the circuit.
- **Electronic addressing**
  Addresses are downloaded and permanently stored from a PC, or the SIGA-HDT Signature Program / Service Tool. There are no switches or dials to set.
- **Ground fault detection by address**
  Detects ground faults right down to the device level.
- **2-gang mounting**

Testing & Maintenance

The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (deactivated) temporarily, from the control panel. Availability of maintenance features is dependent on the fire alarm system used. Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ ULC 536 standards.

Warnings & Cautions
This module will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguardwith your fire protection specialist.

Typical Wiring and Installation

The SIGA-IM2 module mounts to North American 2-1/2 inch (64 mm) deep 2-gang boxes and 1-1/2 inch (38 mm) deep 4 inch square boxes with 2 gang covers and SIGA-MP mounting plates. The module will accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.50mm^2), and #12 AWG (2.50mm^2) wire sizes. *Note: Sizes #16 AWG (1.0mm^2) and #18 AWG (0.75mm^2) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.*

EDWARDS recommends that this module be installed according to latest recognized edition of national and local fire alarm codes.

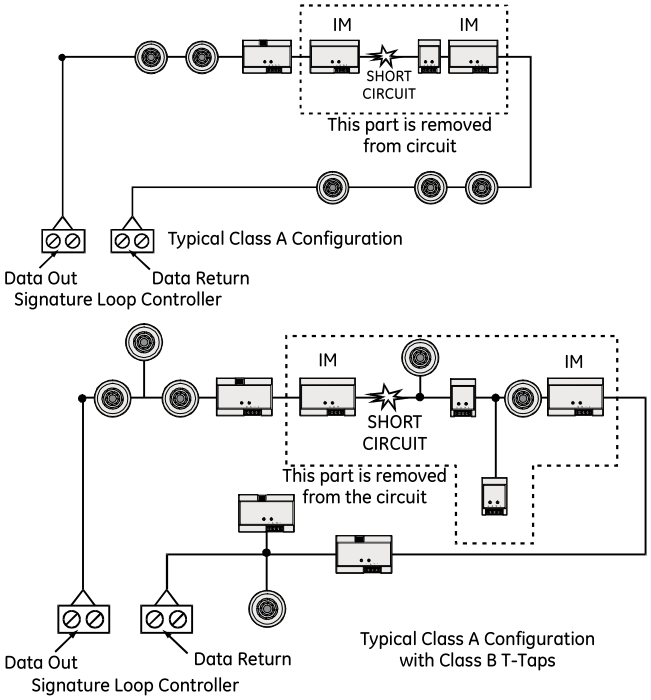
Application

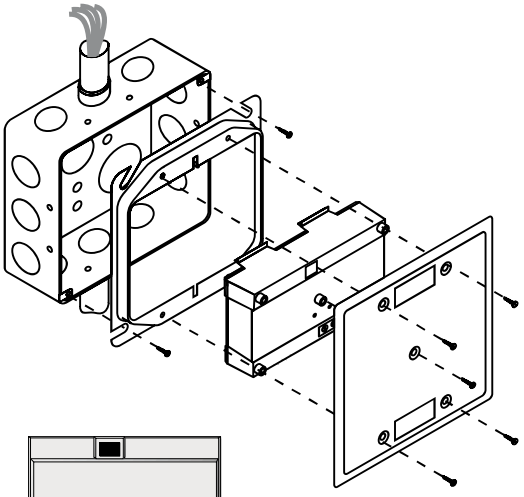
This module should only be used on Class A circuits. The operation of the SIGA-IM2 is determined by its hardware type code and is assigned at the factory. No user configuration is required.

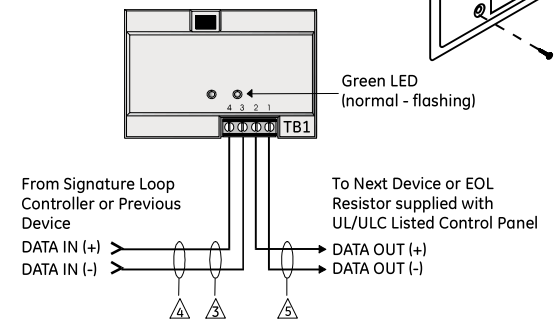
Compatibility

These modules are part of EDWARDS's Signature Series intelligent processing and control platform. They are compatible with EST4, EST3, EST3X and iO Series control panels.

Typical Wiring







1. For maximum wire resistance, refer to the appropriate manufacturer's documentation.
2. Max. #12 AWG (2.5mm²)wire.
3. Refer to Signature Loop Controller Installation Sheet for wiring specifications.
4. This module should be used only with Class A wiring.
5. Maximum circuit resistance between isolators is 6 ohms.
6. All wiring is power-limited and supervised.

Specifications

Description	Isolator Module - factory set hardware type code
Address Requirements	Uses One Detector Address
Circuit Resistance	Six ohms maximum between isolators
Operating Current	Standby = 45µA; Activated = 45µA
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)
Construction & Finish	High Impact Engineering Polymer 2-gang front plate - White Finish
Storage Environment	Temperature: -4°F to 140°F (-20°C to 60°C)
Operating Environment	Temperature: 32°F to 120°F (0°C to 49°C); Humidity: 0 to 93% RH
LED Operation	On-board Green LED - Flashes when polled (normal)
Compatibility	Use with: Signature Loop Controller using 2nd Generation or newer non integrated isolation detectors and non isolated i/o modules
Agency Listings	UL, ULC, CSFM, FM

Ordering Information

Catalog Number	Description	Ship Wt. lb (kg)
SIGA-IM2	Fault Isolator Module - UL/ULC Listed	.5 (.23)
Accessories		
27193-21	Surface Mount Box - 2-gang RED	1 (.4)
27193-26	Surface Mount Box - 2-gang WHITE	
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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EDWARDS
United Technologies
LIFE SAFETY & INCIDENT MANAGEMENT

Manual Pull Stations

SIGA-270, SIGA-270P, SIGA-278



SIGA-270 SERIES

SIGA-278

Patented

MEA FM APPROVED 7150-1657: 0129 S2318

Overview

The SIGA-270 and SIGA-278 series Manual Pull Stations are part of EDWARDS's Signature Series system. The SIGA-270 Fire Alarm Manual Pull Stations feature our very familiar teardrop shape. They are made from die-cast zinc and finished with red epoxy powder-coat paint complemented by aluminum colored stripes and markings. With positive pull-lever operation, one pull on the station handle breaks the glass rod and turns in a positive alarm, ensuring protection plus fool-proof operation. Presignal models (SIGA-270P) are equipped with a general alarm (GA) keyswitch for applications where two stage operation is required. The up-front highly visible glass rod discourages tampering, but is not required for proper operation.

EDWARDS's double action single stage SIGA-278 station is a contemporary style manual station made from durable red colored lexan. To initiate an alarm, first lift the upper door marked "LIFT THEN PULL HANDLE", then pull the alarm handle.

Standard Features

Note: *Some features described here may not be supported by all control systems. Check your control panel's Installation and Operation Guide for details.*

- **Traditional familiar appearance**
  SIGA-270 models feature our familiar teardrop design with simple positive pull action and sturdy die-cast metal body.
- **One stage (GA), two stage (pre-signal), and double action models**
  SIGA-270 models are available for one or two stage alarm systems. The single stage double action SIGA-278 features a rugged Lexan housing with keyed reset mechanism.
- **Break glass operation**
  An up-front visible glass rod on the SIGA-270 discourages tampering.
- **Intelligent device with integral microprocessor**
  All decisions are made at the station allowing lower communication speed while substantially improving control panel response time. Less sensitive to line noise and loop wiring properties; twisted or shielded wire is not required.
- **ADA Compliant**
  Meets ADA requirements for manual pull stations.
- **Electronic Addressing with Non-volatile memory**
  Permanently stores programmable address, serial number, type of device, and job number. Automatically updates historic information including hours of operation, last maintenance date, number of alarms and troubles, and time and date of last alarm.
- **Automatic device mapping**
  Each station transmits wiring information to the loop controller regarding its location with respect to other devices on the circuit.
- **Diagnostic LEDs**
  Status LEDs; flashing GREEN shows normal polling; flashing RED shows alarm state.
- **Designed for high ambient temperature operation**
  Install in ambient temperatures up to 120 °F (49 °C).

Application

The operating characteristics of the fire alarm stations are determined by their sub-type code or “Personality Code”. NORMALLY-OPEN ALARM - LATCHING (Pesonality Code 1**)** is assigned by the factory; no user configuration is required. The device is configured for Class B IDC operation. An ALARM signal is sent to the loop controller when the station’s pull lever is operated. The alarm condition is latched at the station.

Compatibility

Signature Series manual stations are compatible only with EDWARDS’s Signature Loop Controller.

Warnings & Cautions

This device will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your local fire protection specialist.

Testing & Maintenance

To test (or reset) the station simply open the station and operate the exposed switch. The SIGA-270 series are opened with a tool; the SIGA-278 requires the key which is supplied with that station.

The station’s automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each Signature series device and other pertinent messages. Single devices may be deactivated temporarily, from the control panel. Availability of maintenance features is dependent on the fire alarm system used.

Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

Typical Wiring

The fire alarm station’s terminal block accepts #18 AWG (0.75mm^2) to #12 AWG (2.5mm^2) wire sizes. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Wiring Notes

1. Refer to Signature Loop Controller manual for maximum wire distance.
2. All wiring is power limited and supervised.

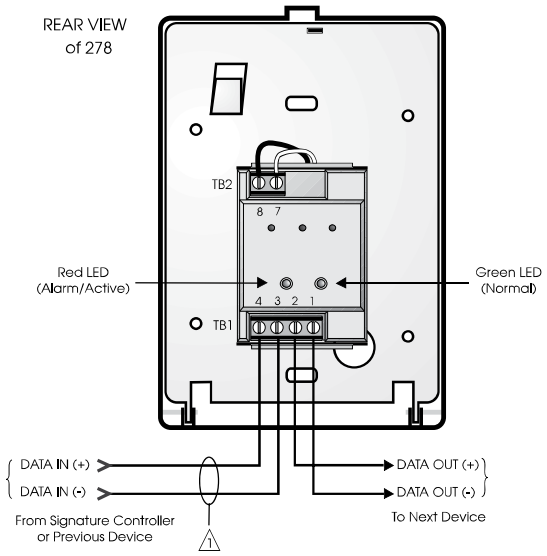


Figure 4. Single Stage Systems

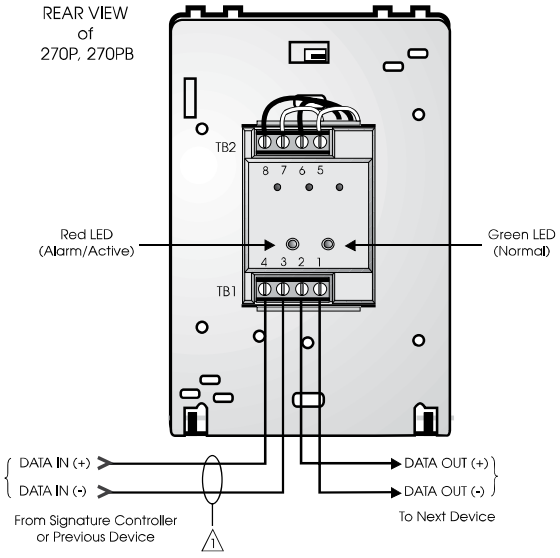


Figure 5. Two Stage Systems

Installation

Single-stage Signature Series fire alarm manual pull stations mount to North American 2½ inch (64 mm) deep 1-gang boxes.

Two stage presignal (270P) models require 1½ inch (38 mm) deep 4-inch square boxes with 1-gang, ½-inch raised covers. Openings must be angular. *Rounded openings are not acceptable.* Recommended box: Steel City Model 52-C-13; in Canada, use Iberville Model CI-52-C-49-1/2.

All models include terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size. EDWARDS recommends that these fire alarm stations be installed according to latest recognized edition of national and local fire alarm codes.

Electronic Addressing: The loop controller electronically addresses each manual station, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each station has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the stations can be addressed using the SIGA-PRO Signature Program/Service Tool.

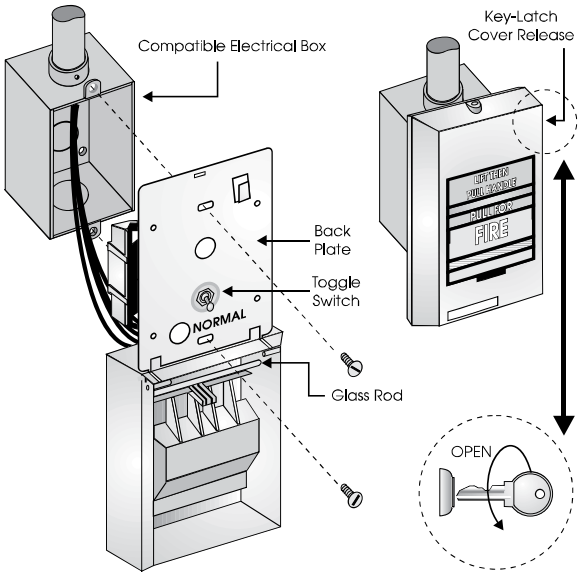


Figure 1. SIGA-278 installation

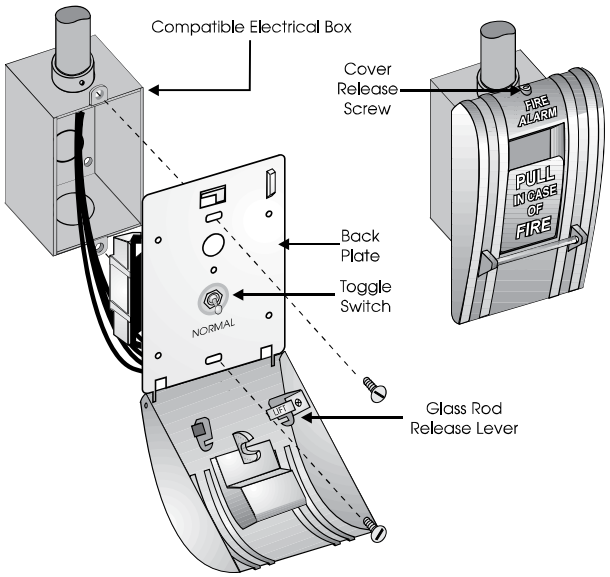


Figure 2. SIGA-270, SIGC-270F, SIGC-270B installation

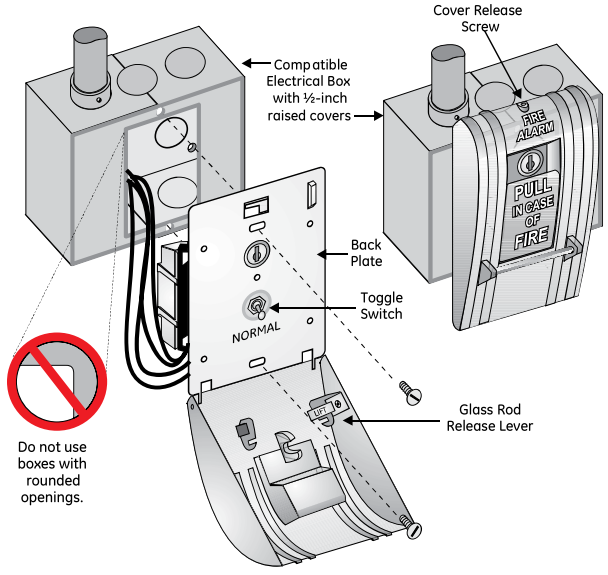


Figure 3. SIGA-270P, SIGC-270PB installation

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Contact us...
Email: edwards.fire@fs.utc.com
Web: *Edwards-fire.com*

EDWARDS is a UTC brand.
1016 Corporate Park Drive
Mebane, NC 27302

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Specifications

Catalog Number	SIGA-270, SIGC-270F, SIGC-270B	SIGA-270P, SIGC-270PB	SIGA-278
Description	Single Action - One Stage	Single Action -Two Stage (Presignal)	Double Action - One Stage
Addressing Requirements	Uses 1 Module Address	Uses 2 Module Addresses	Uses 1 Module Address
Operating Current	Standby = 250µA Activated = 400µA	Standby = 396µA Activated = 680µA	Standby = 250µA Activated = 400µA
Construction & Finish	Diecast Zinc - Red Epoxy with aluminum markings		Lexan - Red with white markings
Type Code	Factory Set		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Storage and Operating Environment	Operating Temperature: 32ºF to 120ºF (0ºC to 49ºC) Storage Temperature: -4ºF to 140ºF (-20ºC to 60ºC) Humidity: 0 to 93% RH		
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes w hen in alarm		
Compatibility	Use With: Signature Loop Controller		
Agency Listings	UL, ULC (note 1), MEA, CSFM, FM		

Note: *SIGC-270F, SIGC-270B and SIGC-270PB are ULC listed only. Suffix "F" indicates French markings. Suffix "B" indicates English/French billing ual markings.*

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-270	One Stage Fire Alarm Station, English Markings - UL/ULC Listed	1 (0.5)
SIGC-270F	One Stage Fire Alarm Station, French Markings - ULC Listed	
SIGC-270B	One Stage Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-270P	Two Stage (Presignal) Fire Alarm Station, English Markings - UL/ULC Listed	
SIGC-270PB	Two Stage (Presignal) Fire Alarm Station, French/English Markings - ULC Listed	
SIGA-278	Double Action (One Stage) Fire Alarm Station, English Markings - UL/ULC Listed	

Accessories		
32997	GA Key w/Tag - for pre-signal station (CANADA ONLY)	0.1 (.05)
276-K2	GA Key - for pre-signal station (USA ONLY)	
276-K1	Station Reset Key, Supplied with all Key Reset Stations	
27165	12 Glass Rods - for SIGA-270 series (CANADA ONLY)	
270-GLR	20 Glass Rods - for SIGA-270 series (USA ONLY)	
276-GLR	20 Glass Rods - for SIGA-278 series	
276B-RSB	Surface Mount Box, Red - for SIGA pull stations	1 (0.6)

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LIFE SAFETY & INCIDENT MANAGEMENT

Input Modules

SIGA-CT1, SIGA-CT1HT, SIGA-CT2, SIGA-MCT2


SIGA-MCT2


SIGA-CT1/2

FM APPROVED MEA

7300-1657: 0121

S3424

Overview

The SIGA-CT1 Single Input Module, SIGA-CT1HT High Temperature Single Input Module and SIGA-CT2/SIGA-MCT2 Dual Input Modules are intelligent analog addressable devices used to connect one or two Class B normally-open Alarm, Supervisory, or Monitor type dry contact Initiating Device Circuits (IDC).

The actual function of these modules is determined by the "personality code" selected by the installer. This code is downloaded to the module from the Signature loop controller during system configuration.

The input modules gather analog information from the initiating devices connected to them and convert it into digital signals. The module's on-board microprocessor analyzes the signal and decides whether or not to input an alarm.

The SIGA-CT1, SIGA-CT1HT and SIGA-CT2 mount to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

The SIGA-CT1HT module operates at an expanded temperature range of 32 ºF to 158 ºF (0 ºC to 70 ºC) for those applications requiring more extreme environmental temperature variation.

The SIGA-MCT2 is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in EDWARDS enclosures.

Standard Features

- **Multiple applications**
  Including Alarm, Alarm with delayed latching (retard) for waterflow applications, Supervisory, and Monitor. The installer selects one of four "personality codes" to be downloaded to the module through the loop controller.
- **SIGA-CT1HT rated for high temperature environments**
  Suitable for attic installation and monitoring high temperature heat detectors.
- **Plug-in (UIO) or standard 1-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.
- **Ground fault detection by address**
  Detects ground faults right down to the device level.

Signature Series Overview

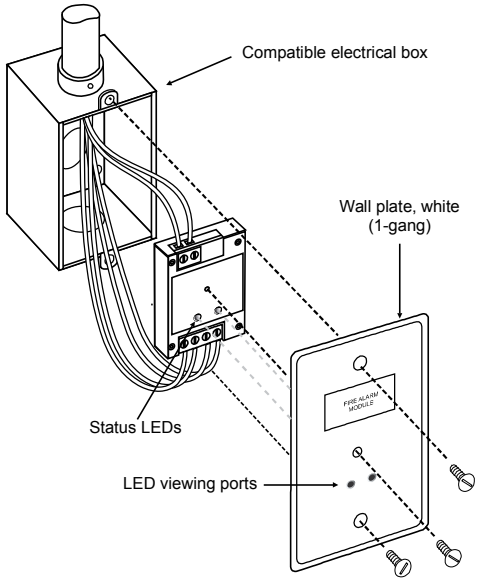
The Signature Series intelligent analog-addressable system from EDWARDS Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool.

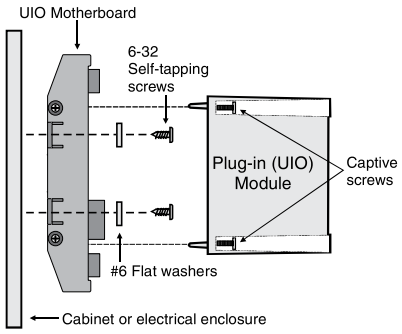
Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy.

Installation

SIGA-CT1, SIGA-CT1HT and SIGA-CT2: modules mount to North American 2½ inch(64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



SIGA-MCT2: mount the UIO motherboard inside a suitable EDWARDS enclosure with screws and washers provided. Plug the SIGA-MCT2 into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

EDWARDS recommends that this module be installed according to latest recognized edition of national and local fire alarm codes.

Application

The duty performed by the SIGA-CT1 and SIGA-CT2/MCT2 is determined by their sub-type code or "Personality Code". The code is selected by the installer depending upon the desired application and is downloaded from the loop controller.

One personality code can be assigned to the SIGA-CT1. Two personality codes can be assigned to the SIGA-CT2/MCT2. Codes 1, 2, 3 and 4 can be mixed on SIGA-CT2/MCT2 modules only. For example, personality code 1 can be assigned to the first address (circuit A) and code 4 can be assigned to the second address (circuit B).

NORMALLY-OPEN ALARM - LATCHING (Personality Code 1) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact initiating devices such as Pull Stations, Heat Detectors, etc. An ALARM signal is sent to the loop controller when the input contact is closed. The alarm condition is latched at the module.

NORMALLY-OPEN ALARM - DELAYED LATCHING (Personality Code 2) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact initiating devices such as Waterflow Alarm Switches. An ALARM signal is sent to the loop controller when the input contact is closed for approximately 16 seconds. The alarm condition is latched at the module.

NORMALLY-OPEN ACTIVE - NON-LATCHING (Personality Code 3) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact monitoring input such as from Fans, Dampers, Doors, etc. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is not latched at the module.

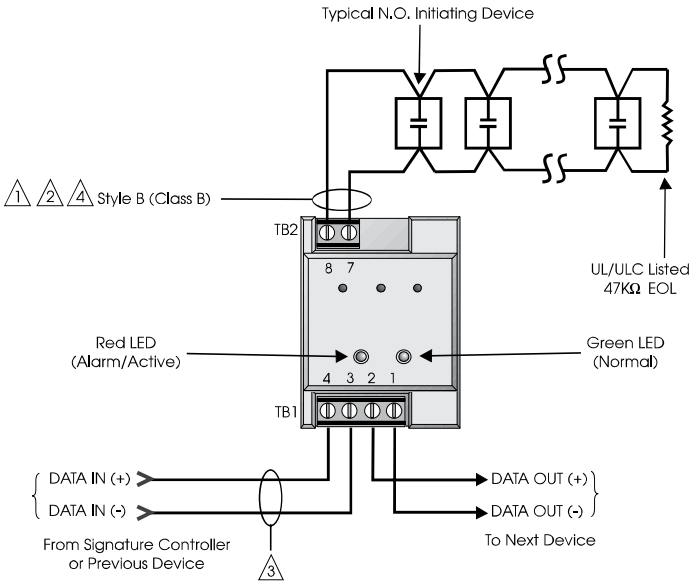
NORMALLY-OPEN ACTIVE - LATCHING (Personality Code 4) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact monitoring input such as from Supervisory and Tamper Switches. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is latched at the module.

Typical Wiring

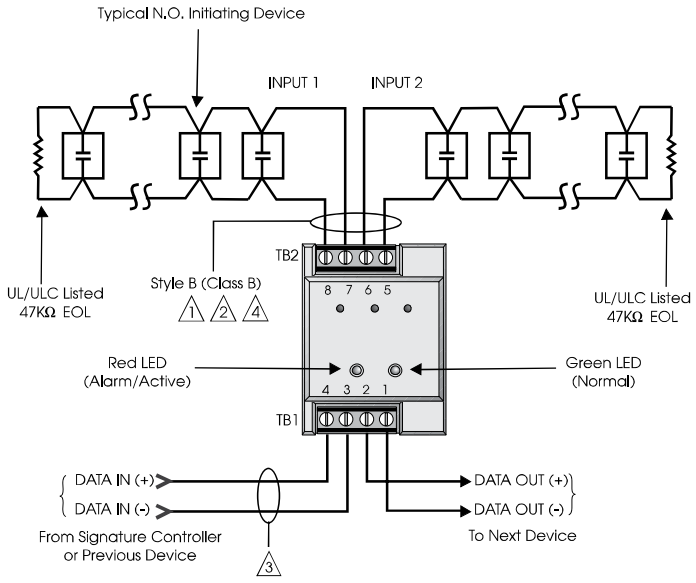
Modules will accept #18 AWG (0.75mm^2), #16 (1.0mm^2), and #14AWG (1.50mm^2), and #12 AWG (2.50mm^2) wire sizes.

Note: Sizes #16 AWG (1.0mm^2) and #18 AWG (0.75mm^2) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Initiating (Slave) Device Circuit Wire Specifications		
Maximum Allowable Wire Resistance	50 ohms (25 ohms per wire) per Circuit	
Maximum Allowable Wire Capacitance	0.1µF per Circuit	
For Design Reference:	**Wire Size**	**Maximum Distance to EOLR**
	#18 AWG (0.75 mm^2)	4,000 ft (1,219 m)
	#16 AWG (1.00 mm^2)	
	#14 AWG (1.50 mm^2)	
	#12 AWG (1.50 mm^2)	



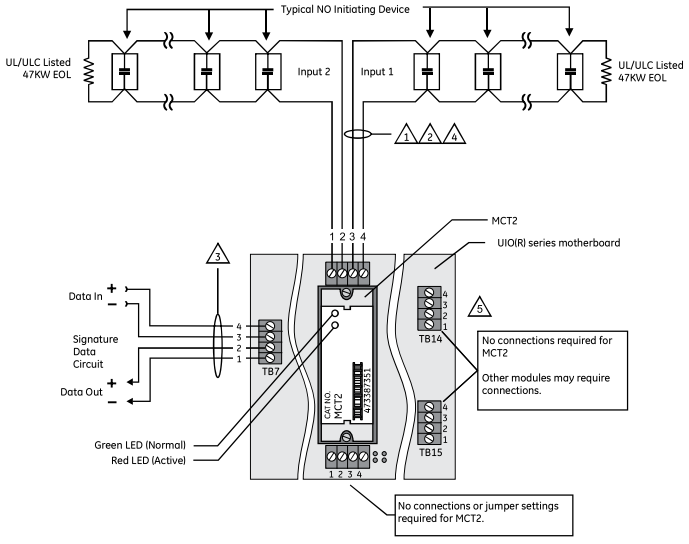
SIGA-CT1, SIGA-CT1HT



SIGA-CT2

NOTES

1. Maximum 25 Ohm resistance per wire.
2. Maximum #12 AWG (2.5 mm^2) wire; Minimum #18 AWG (0.75 mm2).
3. Refer to Signature controller installation sheet for wiring specifications.
4. Maximum 10 Vdc @ 350 µA
5. The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
6. All wiring is supervised and power-limited.
7. These modules will not support 2-wire smoke detectors.



SIGA-MCT2

Warnings & Cautions

This module will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your local fire protection specialist.

Compatibility

These modules are part of EDWARDS's Signature Series intelligent processing and control platform. They are compatible with EST3, EST3X and iO Series control panels.

LIFE SAFETY & INCIDENT MANAGEMENT

Contact us...

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Web: *Edwards-fire.com*

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Mebane, NC 27302

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Specifications

Catalog Number	SIGA-CT1HT	SIGA-CT1	SIGA-CT2	SIGA-MCT2
Description	Single Input Module		Dual Input Module	
Type Code	48 (factory set) Four sub-types (personality codes) are available		49 (factory set) Four sub-types (personality codes) are available	
Address Requirements	Uses One Module Address		Uses Two Module Addresses	
Operating Current	Standby = 250µA; Activated = 400µA		Standby = 396µA; Activated = 680µA	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Construction	High Impact Engineering Polymer			
Mounting	North American 2½ inch (64 mm) deep one-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with one-gang covers and SIGA-MP mounting plates			UIO2R/6R/6 Motherboard
Operating Environment	32°F to 158°F (0°C to 70°C)	32°F to 120°F (0°C to 49°C)		
Storage Environment	-4°F to 140°F (-20°C to 60°C); Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled; On-board Red LED - Flashes when in alarm/active.			
Compatibility	Use with Signature Loop Controller			
Agency Listings	UL, ULC, MEA, CSFM			

Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-CT1	Single Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-CT1HT	Single Input Module High Temperature Operation UL/ULC Listed	0.4 (0.15)
SIGA-CT2	Dual Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-MCT2	Dual Input Plug-in (UIO) Module — UL, ULC Listed	0.1 (0.05)

Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1.0 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1.0 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs — Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs — Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board — Six Module Positions	0.56 (0.25)
MFC-A	Multifunction Fire Cabinet — Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MB4	Transponder Mounting Bracket (allows for mounting two 1-gang modules in a 2-gang box)	0.4 (0.15)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

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Control Relay Modules

SIGA-CR, SIGA-MCR, SIGA-CRR, SIGA-MCRR


SIGA-MCR


SIGA-CR

FM APPROVED MEA 7300-1657: 0121 S3424

Overview

The Control Relay Module and the Polarity Reversal Relay Module are part of the Signature Series system. They are intelligent analog addressable devices available in either plug-in (UIO) versions, or standard 1-gang mount versions.

The SIGA-CR/MCR Control Relay Module provides a Form "C" dry relay contact to control external appliances such as door closers, fans, dampers etc. This device does not provide supervision of the state of the relay contact. Instead, the on-board microprocessor ensures that the relay is in the proper ON/OFF state. Upon command from the loop controller, the SIGA-CR/MCR relay activates the normally open or normally-closed contact.

The SIGA-CRR/MCRR Polarity Reversal Relay Module provides a Form "C" dry relay contact to power and activate a series of SIGA-AB4G Audible Sounder Bases. Upon command from the Signature loop controller, the SIGA-CRR reverses the polarity of its 24 Vdc output, thus activating all Sounder Bases on the data loop.

Standard-mount versions (SIGA-CR and SIGA-CRR) are installed to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

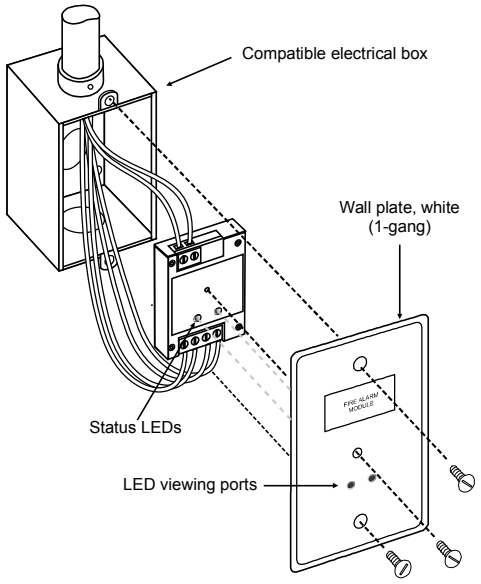
Plug-in UIO versions (SIGA-MCR and SIGA-MCRR) are part of the UIO family of plug-in Signature Series modules. They function identically to the standard mount versions, but take advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in EDWARDS enclosures.

Standard Features

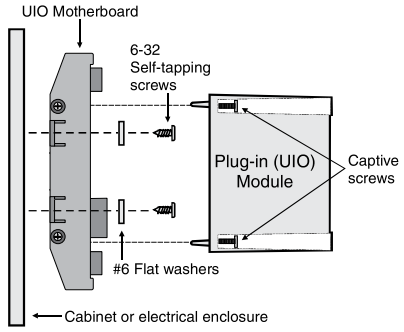
- **Provides one no/nc contact (SIGA-CR/MCR)**
  Form "C" dry relay contact can be used to control external appliances such as door closers, fans, dampers etc.
- **Allows group operation of sounder bases**
  The SIGA-CRR/MCRR reverses the polarity of its 24 Vdc output, thus activating all Sounder Bases on the data loop.
- **Plug-in (UIO) or standard 1-gang mount**
  UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- **Automatic device mapping**
  Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- **Electronic addressing**
  Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool; there are no switches or dials to set.
- **Intelligent device with microprocessor**
  All decisions are made at the module to allow lower communication speed with substantially improved control panel response time and less sensitivity to line noise and loop wiring properties; twisted or shielded wire is not required.

Installation

SIGA-CR and SIGA-CRR: modules mount to North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



SIGA-MCR and SIGA-MCRR: mount the UIO motherboard inside a suitable EDWARDS enclosure with screws and washers provided. Plug the module into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm^2 to 0.75 mm^2) wire size.



Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its onboard memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

EDWARDS recommends that this module be installed according to latest recognized edition of national and local fire alarm codes.

Application

The operation of Signature Series control relays is determined by their sub-type code or "Personality Code."

Personality Code 8: CONTROL RELAY (SIGA-CR/MCR) - Dry Contact Output. This setting configures the module to provide one Form "C" DRY RELAY CONTACT to control Door Closers, Fans, Dampers, etc. Contact rating is 2.0 amp @ 24 Vdc; 0.5 amp @ 120 Vac (or 0.25A @ 220 Vac for non-UL applications). Personality Code 8 is assigned at the factory. No user configuration is required.

Personality Code 8: POLARITY REVERSAL RELAY MODULE (SIGA-CRR/MCRR). This setting configures the module to reverse the polarity of its 24 Vdc output. Contact rating is 2.0 amp @ 24 Vdc (pilot duty). Personality Code 8 is assigned at the factory. No user configuration is required.

Compatibility

These modules are part of EDWARDS's Signature Series intelligent processing and control platform. They are compatible with EST3, EST3X and iO Series control panels.

Warnings & Cautions

This module will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your local fire protection specialist.

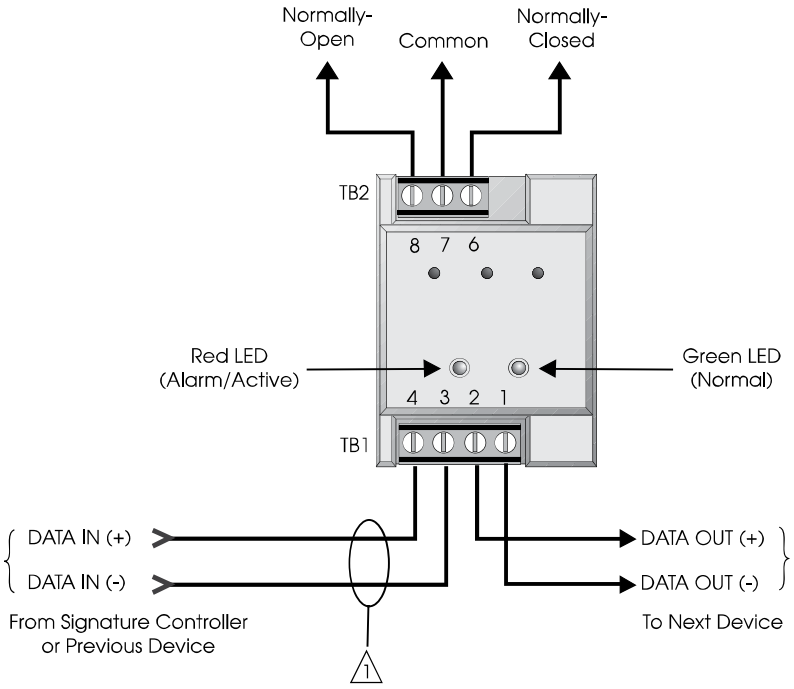
Testing & Maintenance

The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (deactivated) temporarily, from the control panel. Availability of maintenance features is dependent on the fire alarm system used. Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

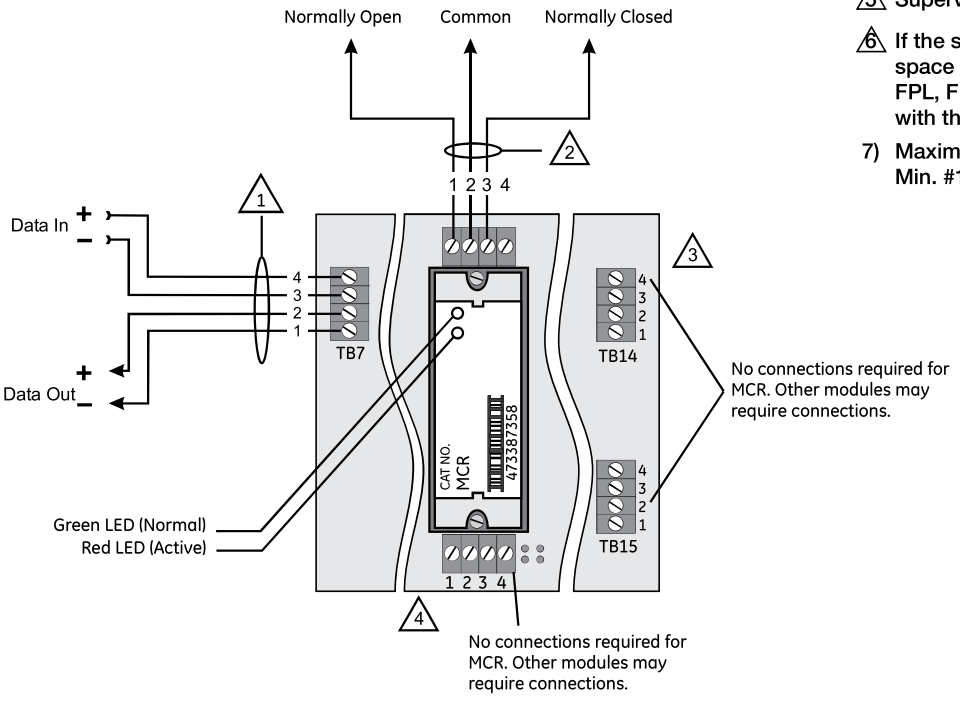
Typical Wiring

Modules will accept #18 AWG (0.75mm^2), #16 (1.0mm^2), #14 AWG (1.50mm^2) and #12 AWG (2.5mm^2) wire sizes.

Note: Sizes #16 AWG (1.0mm^2) and #18 AWG (0.75mm^2) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.



SIGA-CR Control Relay



SIGA-MCR Control Relay

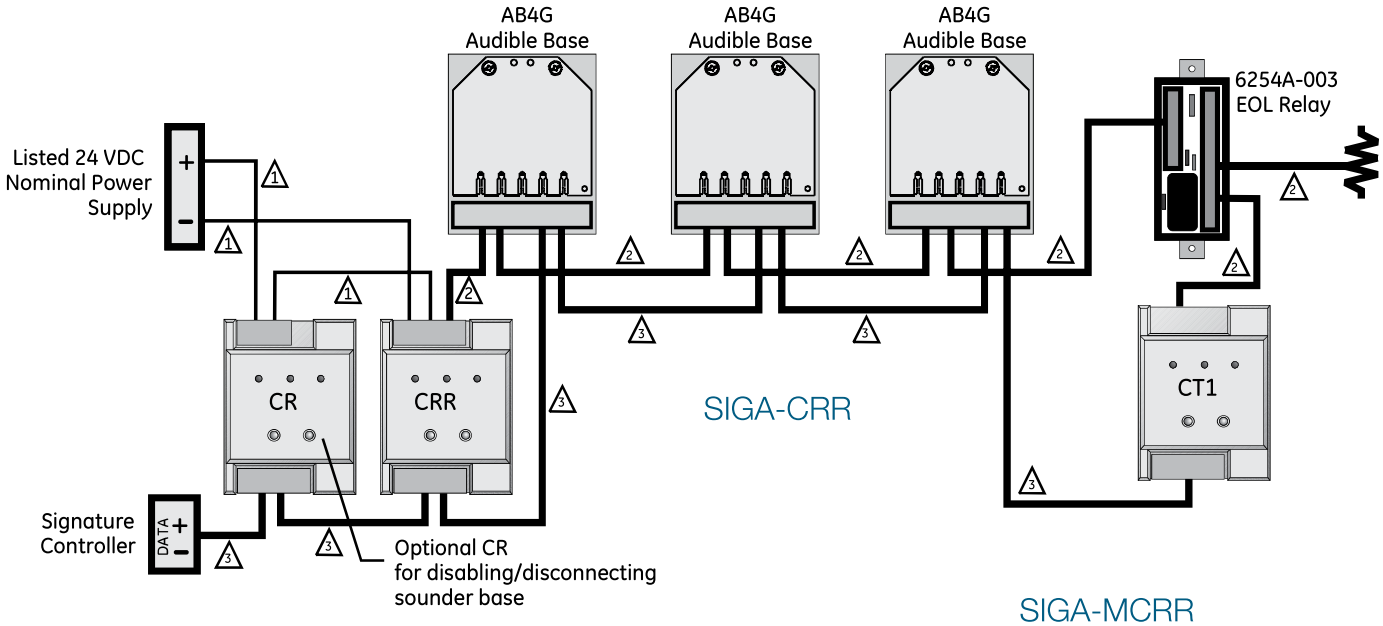
Notes

1. Refer to Signature Loop Controller Installation Sheet for wiring specifications.
2. NFPA 72 requires that the SIGA-CR/SIGA-MCR be installed in the same room as the device it is controlling. This requirement may not apply in all markets. Check with your local AHJ for details.
3. The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
4. The SIGA-UIO6 does not come with TB8 through TB13.
5. Supervised and power-limited.
6. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
7) Maximum #12 AWG (2.5mm^2) wire. Min. #18 (0.75mm^2).

Typical Wiring

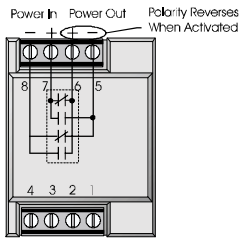
Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), #14 AWG (1.50mm²) and #12 AWG (2.50mm²) wire sizes.

Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

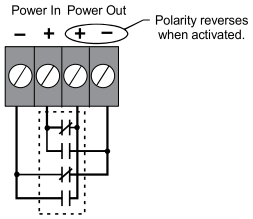


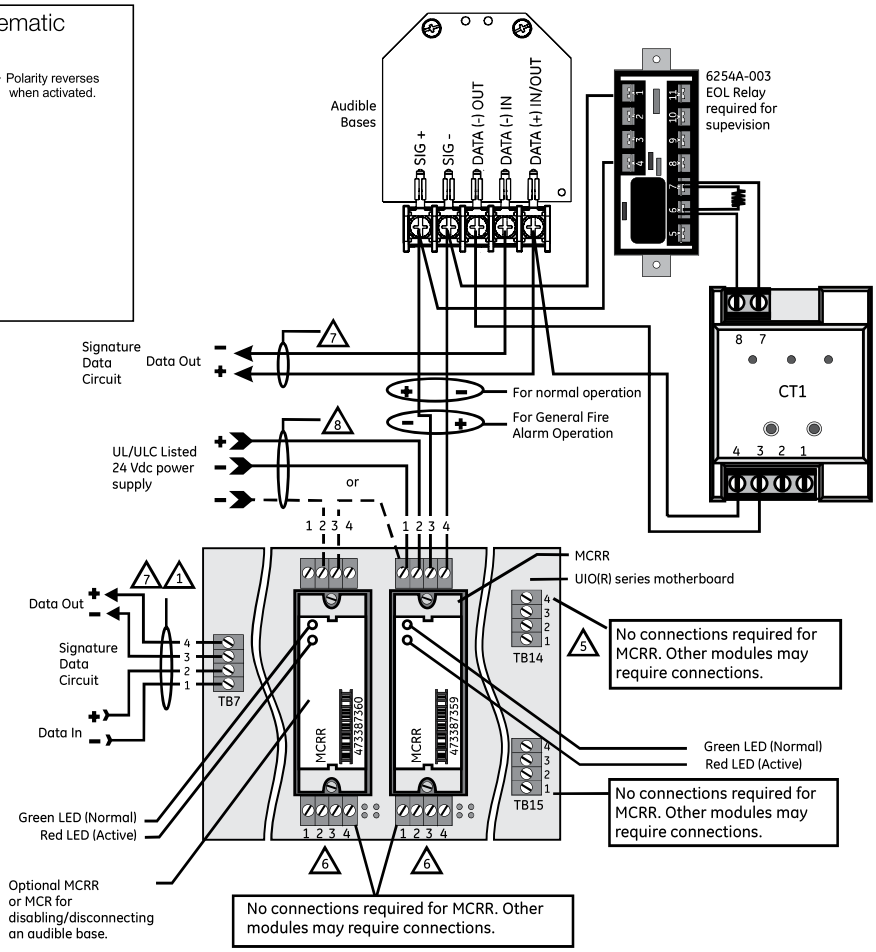
SIGA-MCRR

SIGA-CRR Schematic



SIGA-MCRR Schematic





Notes

1. Refer to the Signature controller installation sheet for wiring.
2. One Pair of Wires (24 Vdc power).
3. One Pair of Wires (Signature Data).
4. Single Wire (24 Vdc power).
5. The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
6. The SIGA-UIO6 does not come with TB8 through TB13.
7. Supervised and power-limited.
8. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electrical Code.
9. Maximum #12 AWG (2.5 mm²) wire; Minimum #18 AWG (0.75 mm²).
10. End-of-Line Relay must monitor and report power supply trouble to control panel.
11. Class B Data wiring may be “T-tapped.”

Specifications

Catalog Number	SIGA-CR	SIGA-MCR	SIGA-CRR	SIGA-MCRR
Description	Control Relay		Polarity Reversal Relay	
Type Code	Personality Code 8 (Factory Set)		Personality Code 8 (Factory Set)	
Address Requirements	Uses 1 Module Address			
Operating Current	Standby = 75 µA Activated = 75 µA			
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Relay Type and Rating	Form C, 2 Amps @ 24 Vdc (pilot duty), 0.5 Amps @ 120 Vac and 0.25 Amps @ 220 Vac (220 Vac is non-UL) Not rated for capacitive loads.			
Mounting	North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards	North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates	Plugs into UIO2R, UIO6R or UIO6 Motherboards
Construction & Finish	High Impact Engineering Polymer			
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled On-board Red LED - Flashes when in alarm/active			
Compatibility	Use With: Signature Loop Controller			
Agency Listings	UL, ULC, CSFM, MEA			

Ordering Information

Catalog Number	Description	Ship Weight - lbs (kg)
SIGA-CR	Control Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCR	Control Relay Module (UIO Mount)	0.18 (0.08)
SIGA-CRR	Polarity Reversal Relay Module (Standard Mount)	0.4 (0.15)
SIGA-MCRR	Polarity Reversal Relay Module (UIO Mount)	0.18 (0.08)

Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
SIGA-AB4G	Audible (Sounder) Detector Base	0.3 (0.15)

Accessories		
MFC-A	Multifunction Fire Cabinet - Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MB4	Transponder Mounting Bracket (allows for mounting two 1-gang modules in a 2-gang box)	0.4 (0.15)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

LIFE SAFETY & INCIDENT MANAGEMENT

Contact us...

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Signature Series Overview

The Signature Series intelligent analog-addressable system from EDWARDS is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool. The information stored in device memory includes:

- Device serial number, address, and type
- Time and date of last alarm
- Most recent trouble code logged by the detector — 32 possible trouble codes may be used to diagnose faults.

Automatic Device Mapping –The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy. This takes the mystery out of the installation. The preparation of as-built drawings is fast and efficient.

Device mapping allows the Signature Data Controller to discover:

- Unexpected additional device addresses
- Missing device addresses
- Changes to the wiring in the circuit.

Most Signature modules use a personality code selected by the installer to determine their actual function. Personality codes are downloaded from the SDC during system configuration and are indicated during device mapping.

EDWARDS

LIFE SAFETY & INCIDENT MANAGEMENT

Genesis LED
G1 Series
Compact Notification Devices



c UL us
S218,
S5389

7125-1657:0506
7135-1657:0502

FM APPROVED

Overview

Genesis LED G1 Series horns and LED strobes feature a sleek low profile design and energy-efficient technology that makes them less expensive to install and operate by reducing overhead. High performance LEDs require fewer circuits and power supplies. These new appliances are designed with energy-efficiency and life safety in mind.

Genesis LED G1 Series uses high efficiency optics, combined with patented electronics, to deliver a highly controlled and efficiently focused light distribution pattern in exchange for lower current requirements. Strobes feature field-selectable 15, 30, or 75 cd light output.

Compared with Xenon-type strobes, Genesis LED G1 Series appliances need fewer power supplies and often smaller wire gauge, which lightens conduit requirements. They are also backwards compatible with legacy strobes, so there's no need to replace all your existing devices to upgrade to new LED technology. In fact, G1 strobes can be mixed on the same circuit and used in the same field of view as Xenon-based strobes. This makes Genesis LED G1 Series ideal for new installations and retrofits alike.

Field-configurable sound output levels provide the flexibility modern life safety projects demand, while the Genesis LED control protocol keeps multiple strobes on compatible NAC circuits synchronized to well within NFPA 72 requirements.

Serviceability is another area where G1 Series appliances shine. The innovative under-cover diagnostic test points provide easy access to device circuit testing while mounted.

Standard Features

- **High Performance LED Strobe Technology**
  - Ultra low device current consumption
  - High efficiency optics
  - Selectable 15, 30, or 75 cd light output
  - LED devices may be mixed with legacy Xenon strobes
- **Efficient Audible Output**
  - Selectable high or low dB horn output
  - Selectable temporal or steady horn output
  - Improved audio frequency range for better wall penetration
- **Low-profile Design**
  - Compact design... single gang mounting
  - Ultra-slim... protrudes about 1" from the mounting surface
  - Attractive appearance... no visible mounting screws
- **Multiple "FIRE" Marking Options**
  - Order English, French, Spanish or no FIRE markings
  - Change markings at any time with quick-swap covers
- **Easy to Install**
  - Diagnostic test points streamline device circuit testing
  - Fits standard 1-gang electrical boxes, no trim ring needed
  - Optional trim ring available for 4-inch square boxes
  - Slide switches for field configuration
  - 12 to 18 AWG in-out screw terminals for quick wiring

Application

Strobes

Genesis LED G1 Series strobes are UL 1971-listed for use indoors as wall-mounted public-mode notification appliances for the hearing impaired. Prevailing codes require strobes to be used where ambient noise conditions exceed 105 dBA (87 dBA in Canada), where occupants use hearing protection, and in areas of public accommodation as defined in the *Americans with Disabilities Act*.

Synchronization is important in order to avoid epileptic sensitivity. All Genesis LED strobes exceed UL synchronization requirements (within 10 milliseconds over a two-hour period) when used with a synchronization source. See the specifications table for a list of compatible sources.

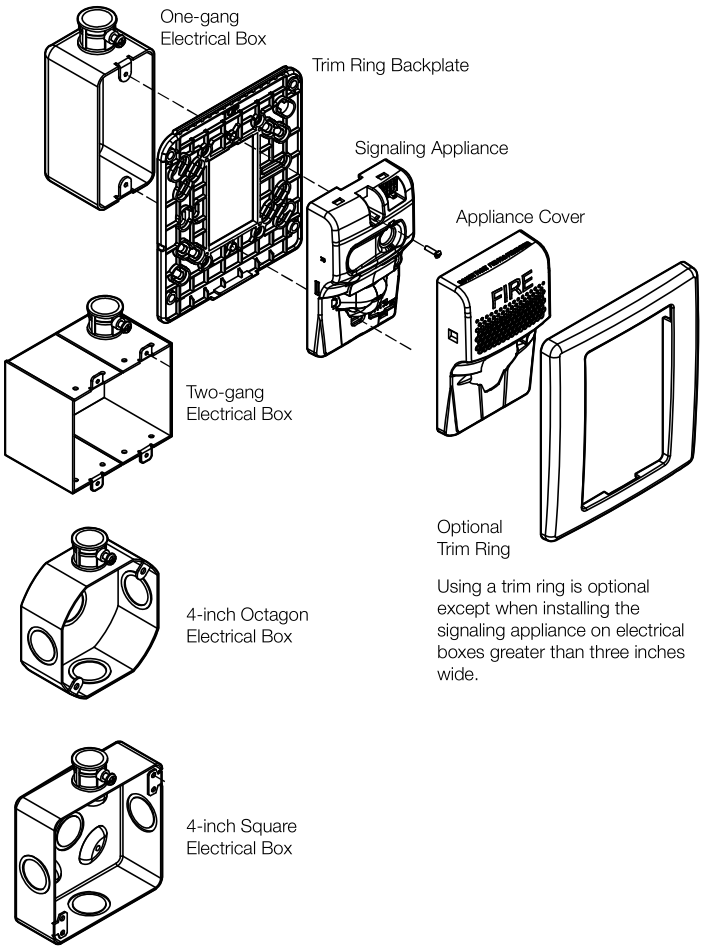
Horns

Genesis LED horn output reaches as high as 92 dBA and features an improved audio frequency range compared with other Genesis LED horns. This results in excellent sound penetration through walls and a clear warning of danger. They can also be set for high or low dBA output. This setting reduces horn output by about 6 dBA. Horn-only models may be ceiling-mounted or wall-mounted and may be configured for either coded or non-coded notification appliance circuits.

The suggested sound pressure level for each signaling zone used with alarm signals is at least 15 dBA above the average ambient sound level, or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater. These values are measured at five feet (1.5 m) above the floor. The average ambient sound level is A-weighted, fast response sound pressure measured over a 24-hour period.

Doubling the distance from the signal to the ear will theoretically result in a 6 dBA reduction of the received sound pressure level. The actual effect depends on the acoustic properties of materials in the space. A 3 dBA difference represents a barely noticeable change in volume.

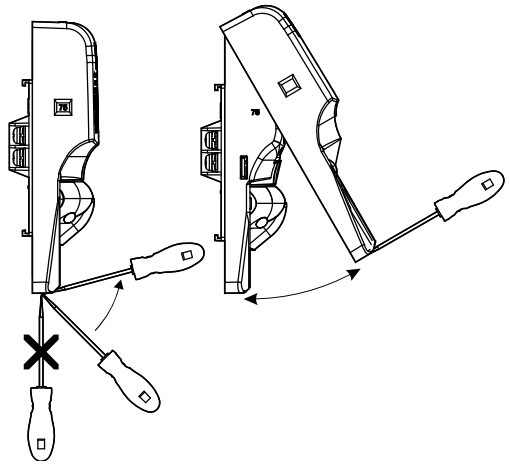
Genesis LED G1 Series horns and strobes mount to any standard one-gang surface or flush electrical box. Matching optional G1T trim rings are available to cover oversized openings and can accommodate one-gang or four-inch square boxes. Optional color matched single-gang surface boxes are also available.



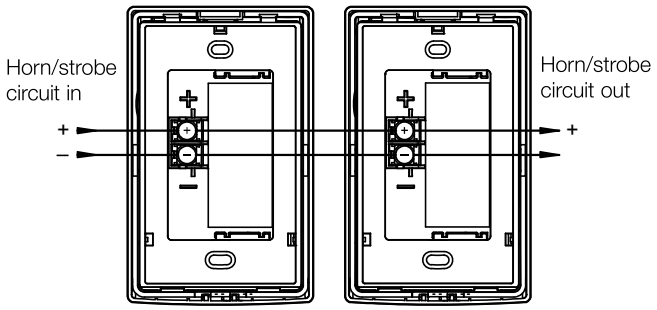
Using a trim ring is optional except when installing the signaling appliance on electrical boxes greater than three inches wide.

Installation

All Genesis LED devices come with mounting screws for easy installation. The tab at the bottom of the device unlocks the cover to reveal the mounting holes. The shallow depth of Genesis LED devices leaves ample room behind them for extra wiring. Once installed with the cover in place, no mounting screws are visible.



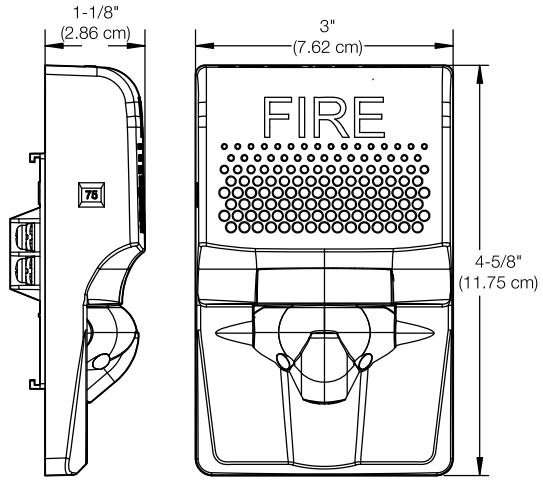
Wiring



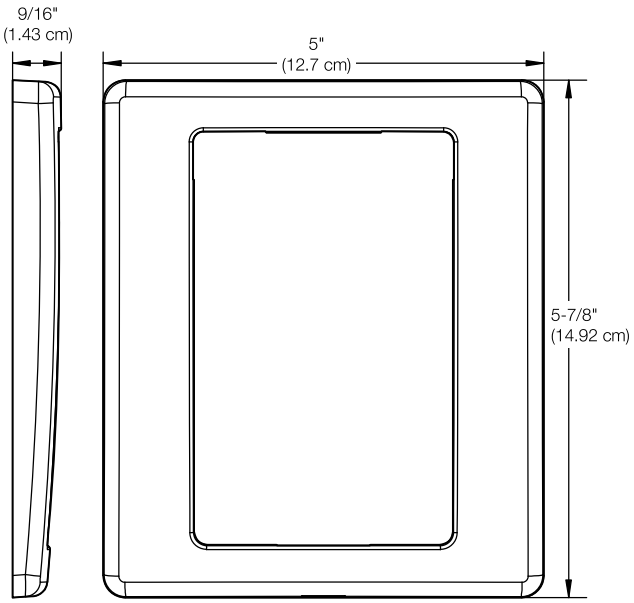
Signal polarity shown in the active condition.

Dimensions

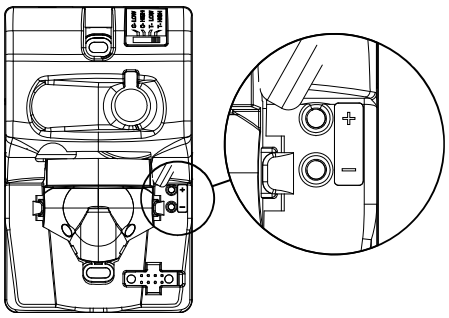
G1 Notification Appliances



G1T Trim Ring



Diagnostics



Test points indicated above are used to validate the Notification Appliance Circuit and verify device function.

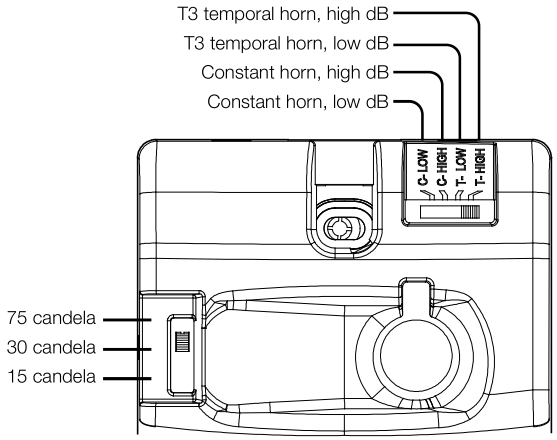
Field Configuration

Temporal horn and horn-strobe models are factory set to sound in a three-pulse temporal pattern. By sliding the tone selector switch, units may be configured for constant horn output that can be coded at precise intervals by EDWARDS control panels and control modules.

Note: Temporal 3 coding is the required output for fire notification devices per NFPA 72. Any device coding other than temporal 3 is at the discretion and approval of the local authority having jurisdiction (AHJ).

Horns and horn-strobes are factory set for high dB output. Low dB output may be selected by sliding the tone selector switch. This reduces the output by about 6 dBA.

Genesis LED clear strobes and horn-strobes may be set for 15, 30, or 75 candela output. The output setting is changed by simply removing the cover and sliding the candela switch to the desired setting. The device does not have to be removed from the wall to change the output setting. The setting remains visible through a small window on the left-hand side of the device after the cover is closed.



Operating current

Horns

Sound setting	16 to 33 VDC	16 to 33 VFWR
C-Low T-Low	13 mA	15 mA
C-High T-High	23 mA	29 mA

Strobes

Strobe setting	16 to 33 VDC	16 to 33 VFWR
15, 30, 75	24 mA	32 mA

Horn-Strobes

Strobe setting	Sound setting	16 to 33 VDC	16 to 33 VFWR
15, 30, 75	C-Low, T-Low	35 mA	43 mA
	C-High, T-High	45 mA	55 mA

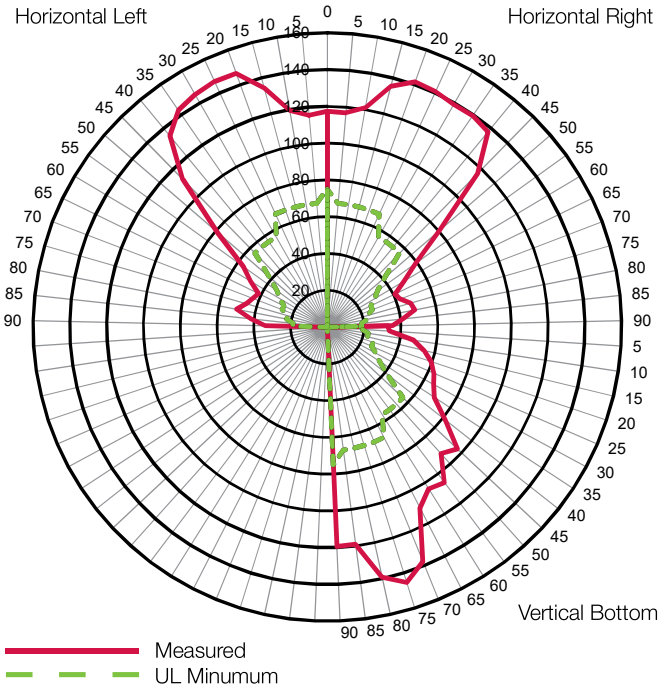
Sound Output

Sound setting	Reverberant (UL 464)	Anechoic (CAN/ULC S525)
C-Low T-Low	80 dBA	86 dBA
C-High T-High	85 dBA	92 dBA

Sound pattern (ULC)

Axis	Angle	Change in output
Horizontal	45° and 115°	-3 dBA
	5° and 130°	-6 dBA
Vertical	65° and 135°	-3 dBA
	45° and 140°	-6 dBA

Light Distribution



Specifications

Operating voltage	16 to 33 VDC, 16 to 33 VFWR
Horn signal type	Constant or T3 temporal
Light output	15, 30, or 75 candela
Strobe flash rate	1 fps (flash per second) approx.
Synchronization	20 Ω max. between any two devices. (To determine allowed wire resistance, refer to these specifications, and the specifications for the synchronized signal source.)
Synchronization sources	EDWARDS CC Series Signal Modules, Booster and Auxiliary Power Supplies, and Intelligent and Conventional Control Panels
Wire size	12 to 18 AWG (0.75 to 2.50 mm^2)
Dimensions (W×H×D)	3 × 4-5/8 × 1-1/8 in. (7.62 × 11.75 x 2.86 cm)
Strobe-to-box center offset	-0.71 inches (-1.8 cm)
Compatible electrical boxes [1]	1-gang, 2-gang, 4-inch octagon, 4-inch square
Trim rings	G1TR, G1TW - Dimensions 5 x 5-7/8 x 9/16 in. (12.7 x 14.92 x 1.43 cm)
Agency Listings	FCC, ICC, UL1971, UL1638, UL464, CSFM (All models comply with ADA code of federal regulation Chapter 28 Part 36 final rule)
Operating environment Temperature Relative humidity	 32 to 122°F (0 to 50°C) 0 to 93% noncondensing

[1] Electrical boxes must be at least 1-1/2 in. (3.81 cm) deep. Electrical boxes greater than three inches wide require a trim ring.

Ordering Information

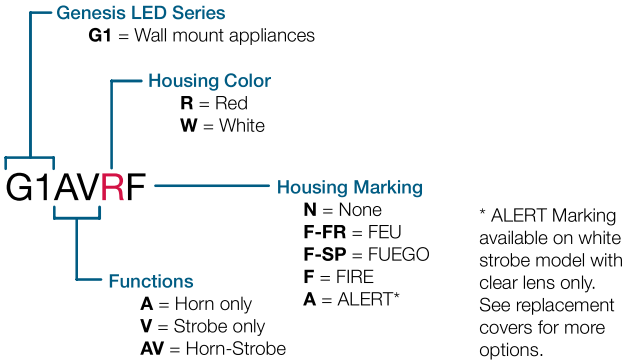
Notification Appliances		Color	Marking
 **Horns** Selectable High/low dB	G1ARF	Red	FIRE
	G1ARF-FR	Red	FEU
	G1ARF-SP	Red	FUEGO
	G1ARN	Red	None
	G1AWF	White	FIRE
	G1AWF-FR	White	FEU
	G1AWF-SP	White	FUEGO
	G1AWN	White	None
 **Strobes** Selectable 15, 30, 75 cd	G1VRF	Red	FIRE
	G1VRF-FR	Red	FEU
	G1VRF-SP	Red	FUEGO
	G1VRN	Red	None
	G1VWA*	White	ALERT
	G1VWF	White	FIRE
	G1VWF-FR	White	FEU
	G1VWF-SP	White	FUEGO
	G1VWN	White	None
 **Horn-strobes** Selectable 15, 30, 75 cd, High/low dB	G1AVRF	Red	FIRE
	G1AVRF-FR	Red	FEU
	G1AVRF-SP	Red	FUEGO
	G1AVRN	Red	None
	G1AVWF	White	FIRE
	G1AVWF-FR	White	FEU
	G1AVWF-SP	White	FUEGO
	G1AVWN	White	None

Replacement Appliance Covers		Color	Marking
 **Horn Covers**	G1ARA-CVR	Red	ALERT
	G1ARF-CVR	Red	FIRE
	G1ARF-FR-CVR	Red	FEU
	G1ARF-SP-CVR	Red	FUEGO
	G1ARN-CVR	Red	None
	G1AWA-CVR	White	ALERT
	G1AWF-CVR	White	FIRE
	G1AWF-FR-CVR	White	FEU
	G1AWF-SP-CVR	White	FUEGO
	G1AWN-CVR	White	None
 **Strobe Covers**	G1VRA-CVR	Red	ALERT
	G1VRF-CVR	Red	FIRE
	G1VRF-FR-CVR	Red	FEU
	G1VRF-SP-CVR	Red	FUEGO
	G1VRN-CVR	Red	None
	G1VWA-CVR	White	ALERT
	G1VWF-CVR	White	FIRE
	G1VWF-FR-CVR	White	FEU
	G1VWF-SP-CVR	White	FUEGO
	G1VWN-CVR	White	None
 **Horn-strobe Covers**	G1AVRA-CVR	Red	ALERT
	G1AVRF-CVR	Red	FIRE
	G1AVRF-FR-CVR	Red	FEU
	G1AVRF-SP-CVR	Red	FUEGO
	G1AVRN-CVR	Red	None
	G1AVWA-CVR	White	ALERT
	G1AVWF-CVR	White	FIRE
	G1AVWF-FR-CVR	White	FEU
	G1AVWF-SP-CVR	White	FUEGO
	G1AVWN-CVR	White	None

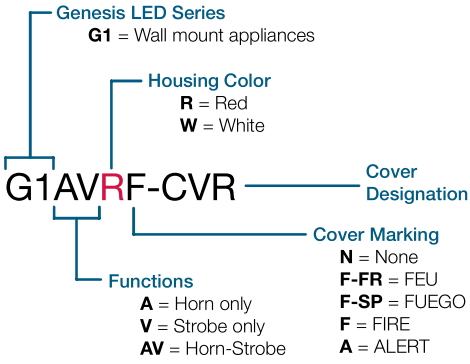
Accessories

	G1TR	Trim ring, G1 Series, red		G1TW	Trim ring, G1 Series, white
	27193-11	One-gang surface mount box, red		27193-16	One-gang surface mount box, white

Model Number Syntax, Appliances



Model Number Syntax, Replacement Covers



LIFE SAFETY & INCIDENT MANAGEMENT

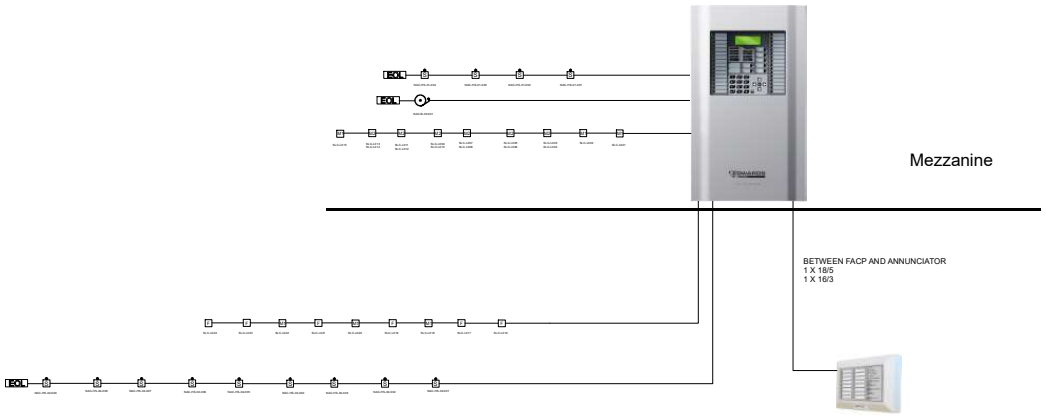
Contact us

Phone: 800-655-4497 (Option 4)
Email: edwards.fire@carrier.com
Website: edwardsfiresafety.com

8985 Town Center Pkwy
Bradenton, FL 34202

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PROJET :IQUALUIT WASTE MANAGEMENT



Main Floor

LÉGENDE

- STATION MANUELLE
- DÉTECTEUR DE FUMÉE
- DÉTECTEUR DE CHALEUR AVEC AUGM. TEMP.
- DÉTECTEUR DE CHALEUR À TEMP. FIXE
- DÉTECTEUR DE GAINE
- DÉTECTEUR À FAISCEAU
- MODULE UNE ENTRÉE
- MODULE 2 ENTRÉES
- MODULE DE COMMANDE
- HAUT-PARLEUR
- HAUT-PARLEUR STROBOSCOPIQUE
- MODULE ISOLATEUR
- CONTACT D'ALARME DANS PCAI
- ÉLECTRO-AIMANT
- MONITEUR 24VDC
- Exp À L 'ÉPREUVE DES EXPLOSIONS
- EOL RÉSISTANCE DE FIN DE LIGNE
- TELEPHONE POMPIER
- Cs1 MODULE DE SIGNALISATION
- Rm1 MODULE DE SUPERVISION DE LIGNE
- VALVE GICLEUR
- DEBIT GICLEUR
- TIRETTE / BOUTON D 'URGENCE
- VESDA SYSTEME DÉTECTION TYPE VESDA (FOURNIS ET INSTALLÉ PAR AUTRES)
- CLOCHE 24VDC

NOTES:

LES CIRCUITS NE MONTRENT QUE L 'APPARTENANCE DES APPAREILS À UN CIRCUIT DONNÉ.

LES ABRÉVIATIONS SUIVANTES SONT UTILISÉES POUR ALLÉGER LE TEXTE:

P: PROCHE
F: FACE À
ESC: ESCALIER
ASC: ASCENSEUR
APP: APPENTIS
INT : SITUE A L 'INTÉRIEUR
EXT : SITUE A L 'EXTERIEUR

SAUF SOUS INDICAITON CONTRAIRE UNE LIGNE REPRÉSENTE UNE PAIR DE CONDUCTEUR

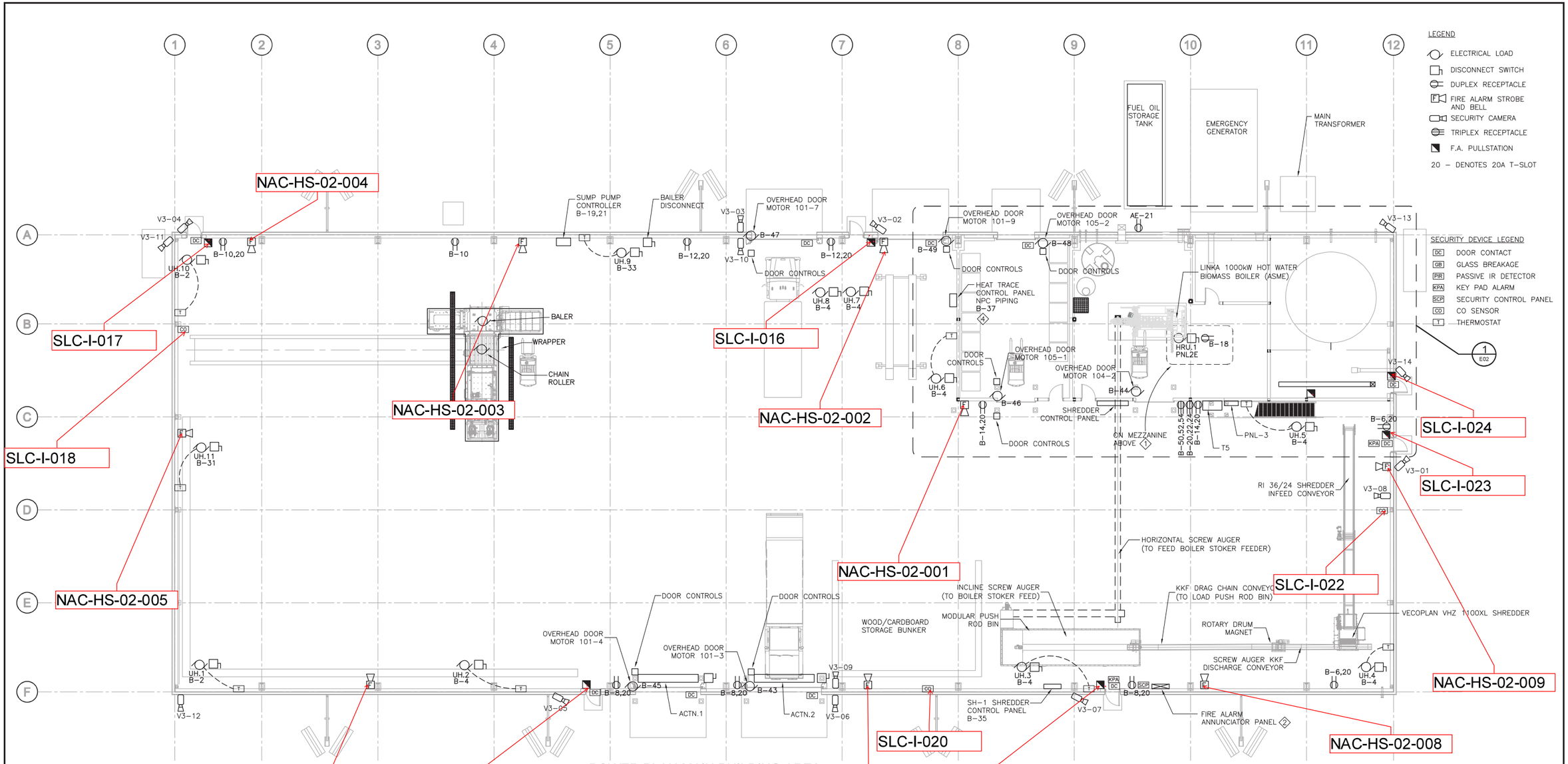
Légendes cables

Détections	: Calibre 18 Torsade
Signalisation HP	: Calibre 16 Torsade
Signalisation Visuel	: Calibre 14 Torsade
Tel. Pompier	: Calibre 18 Torsadé / Blindé
Réseau PAI	: Voir note en plans

*** Note : les panneaux peuvent différé de l'image montré dans ce diagramme ***

Dessiné par : Olivier Bolduc
Version 1.0 20 Fevrier 2023 90 %

olivier.bolduc@troylfs.com



POWER PLAN MAIN BUILDING AREA
1:125

CONSTRUCTION NOTES

1. HRU–1 IS LOCATED ON THE MEZZANINE. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION. PROVIDE 20A T–SLOT RECEPTACLE IN CLOSE PROXIMITY.
2. CONFIRM FIRE FIGHTER ENTRANCE WITH LOCAL FIRE DEPARTMENT.
3. PROVIDE POWER FOR CO AND NOX DETECTION FOR PLANT FLOOR. REFER TO MECHANICAL DRAWINGS FOR GAS DETECTION SYSTEM AND COORDINATE WITH MECHANICAL CONTRACTOR. MONITOR WITH FIRE ALARM SYSTEM TO PROVIDE A TROUBLE SIGNAL ON CO OR NOX DETECTION.
4. PROVIDE HEAT TRACE CABLE, WIRING, CONNECTION KITS, END SEALS, AMBIENT TEMPERATURE CONTROLLER AND ALL REQUIRED ACCESSORIES FOR A COMPETE ELECTRIC HEAT TRACE SYSTEM. PROVIDE DESIGN FROM LOCAL REPRESENTATIVE OR FACTORY FOR REVIEW.

GENERAL NOTES

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. PROVIDE LOCAL DISCONNECTS FOR ALL MECHANICAL EQUIPMENT.
2. COORDINATE PROCESS EQUIPMENT INSTALLATION LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE ALL ELECTRICAL CONNECTIONS, BREAKERS, WIRING AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH EQUIPMENT SUPPLIERS FOR ALL REQUIRED INFORMATION.
3. COORDINATE THE INSTALLATION OF THE MAIN TRANSFORMER WITH THE POWER SUPPLY AUTHORITY.
4. COORDINATE THE INSTALLATION OF THE GENERATOR WITH THE FUEL TANK AND MAIN TRANSFORMER LOCATIONS.
5. SEE STRUCTURAL DRAWINGS FOR HOUSEKEEPING PAD REQUIREMENTS.

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER P 010
DILLON CONSULTING LIMITED
2022-07-06

REGISTERED PROFESSIONAL ENGINEER
JULY 5, 2022
B.L. MOORE
LICENSEE #L1372
NWT/NU

NOT FOR CONSTRUCTION

Iqaluit

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
9	RELEASED FOR TENDER	2022/07/06	K.B.
8	ADDITIONAL REVIEW	2022/05/18	K.B.
7	TENDER	2022/04/14	K.B.
6	REVIEW	2021/09/24	K.B.
5	REVIEW	2021/06/25	K.B.
4	100% ISSUED FOR APPROVAL	2020/10/30	K.B.
3	90% REVIEW	2020/01/24	K.B.
2	50% REVIEW	2019/10/23	K.B.
1	30% REVIEW	2019/05/04	K.B.

DESIGN BLM | REVIEWED BY BLM
DRAWN SCK | CHECKED BY KB
DATE JULY 2022
SCALE NOTED

CITY OF IQALUIT
WASTE TRANSFER STATION

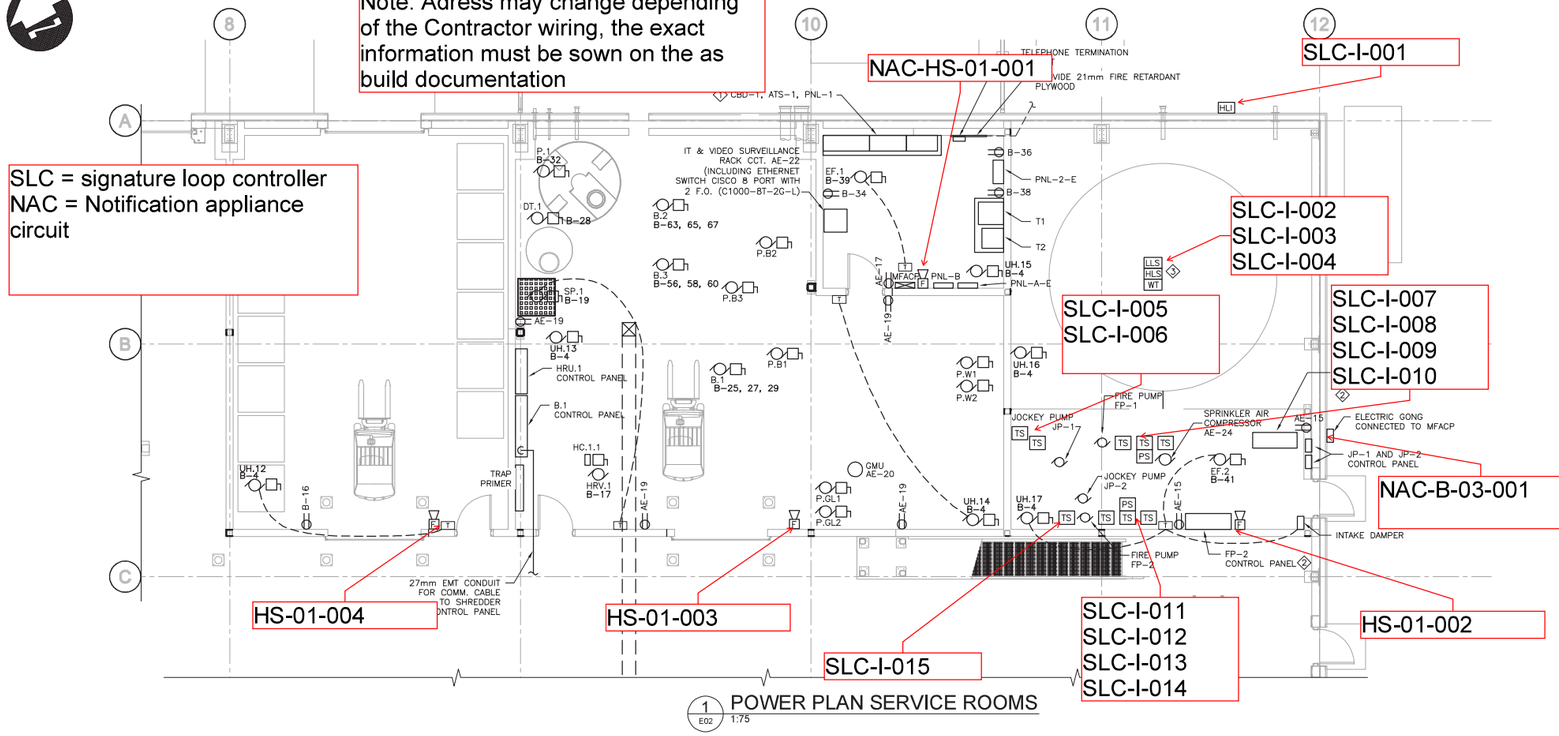
POWER PLAN MAIN BUILDING AREA

PROJECT NO. 19-9543
SHEET NO. WTS-E01

FILENAME: C:\PW WORKING DIRECTORY\PROJECTS 2019\M2019DM3527\81\M2019-3-81-ELEC-E01.DWG PLOTTED BY: HAL BUNNO
PLOT DATE: 2022-07-06 @ 11:56:07 AM PLOT SCALE: 1:53.0197 PLOT STYLE: BILLION STANDARD.CTB

Note: Adress may change depending of the Contractor wiring, the exact information must be sown on the as build documentation

SLC = signature loop controller
NAC = Notification appliance circuit



1 POWER PLAN SERVICE ROOMS
E02 1:75

GENERAL NOTES

1. SEE STRUCTURAL DRAWINGS FOR HOUSEKEEPING PAD REQUIREMENTS.

CONSTRUCTION NOTES

1. PROVIDE 53MM HDPE CONDUIT FROM THE ATS TO THE GENERATOR ENCLOSURE FOR CONTROL WIRING. PROVIDE WIRING AS REQUIRED. COORDINATE WITH GENERATOR SUPPLIER FOR WIRING AND CONNECTIONS REQUIRED.
2. PROVIDE 53MM HDPE CONDUITS FROM THE FIRE PUMP CONTROLLERS TO THE GENERATOR ENCLOSURE FOR CONTROL WIRING. PROVIDE WIRING AS REQUIRED. COORDINATE WITH FIRE PUMP CONTROLLER SUPPLIER FOR WIRING AND CONNECTIONS REQUIRED.
3. PROVIDE LOW LEVEL FLOAT SWITCH IN STORAGE TANK AND CONNECT TO MFACP. SWITCH TO OPEN ON LOW LEVEL.
4. CONFIRM BREAKER SIZE PER MANUFACTURER SPECIFICATIONS.
5. CONNECT PRESSURE, TAMPER, LOW LEVEL, HIGH LEVEL SWITCHES, AND WATER TEMPERATURE SENSOR TO MFACP.

LEGEND

- PHOTO CELL
- DUPLEX RECEPTACLE
- QUAD RECEPTACLE
- VOICE/DATA RECEPTACLE
- 2 X 2 LUMINAIRE
- STRIP LUMINAIRE
- SWITCH
- LOCAL DISCONNECT
- COMBO EXIT SIGN
- EXTERIOR LUMINAIRE
- CCTV CAMERA
- ELECTRICAL LOAD

LEGEND continued

- WT — WATER TEMPERATURE SENSOR
- PS — PRESSURE SWITCH
- TS — TAMPER SWITCH
- LLS — LOW LEVEL SWITCH
- HLS — HIGH LEVEL SWITCH
- HLI — HIGH LEVEL INDICATOR LIGHT
- T — THERMOSTAT

DISTRIBUTION PANEL – PNL–B

CCT NO	DESCRIPTION	LOAD	TRIP AMPS	N ABC	TRIP AMPS	LOAD	DESCRIPTION	CCT NO
01	RECEPT. PARKING	1800	20		20	150	UNIT HEATERS UH.11	02
03			2P		20	150	UNIT HEATERS UH.12 TO 17	04
05	RECEPT. PARKING	1800	20		20	600	RECEPT. PLANT ROOM	06
07			2P		20	600	RECEPT. PLANT ROOM	08
09	RECEPT. PARKING	1800	20		20	600	RECEPT. PLANT ROOM	10
11			2P		20	600	RECEPT. PLANT ROOM	12
13	RECEPT. PARKING	1800	20		20	600	RECEPT. PLANT ROOM	14
15			2P		15	600	RECEPT. STORAGE RM.	16
17	HRV.1	1600	20		20	600	RECEPT. MEZZANINE	18
19	SUMP PUMP CONTROLLER	500	15					20
21	UNIT HEATERS UH.1	150	20		25		END OF LIFE VEHICLE LIFT	22
23	UNIT HEATERS UH.2	150	20		3P			24
25					15		TRAP PRIMER	26
27	B.1	2000	25		15	500	DT.1	28
29			3P				SPACE	30
31	UNIT HEATERS UH.3	150	20		20	600	PUMP P.1	32
33	UNIT HEATERS UH.4	150	20		15	500	ELECTRICAL ROOM RECEPT.	34
35	SHREDDER CONTROL PANEL		20		15	500	ELECTRICAL ROOM RECEPT.	36
37	HEAT TRACE CONTROL PANEL		15		15	500	ELECTRICAL ROOM RECEPT.	38
39	EF.1	700	15		15		SPARE	40
41	EF.2	550	15		15		SPARE	42
43	OVERHEAD DOOR MOTOR 101–3	560	15		15	560	OVERHEAD DOOR MOTOR 104–2	44
45	OVERHEAD DOOR MOTOR 101–4	560	15		15	560	OVERHEAD DOOR MOTOR 105–1	46
47	OVERHEAD DOOR MOTOR 101–7	560	15		15	560	OVERHEAD DOOR MOTOR 105–2	48
49	OVERHEAD DOOR MOTOR 101–9	560	15					50
51	UNIT HEATERS UH.5		20		20		END OF LIFE VEHICLE LIFT AIR COMPRESSOR	52
53	UNIT HEATERS UH.6		20		3P			54
53	UNIT HEATERS UH.7		20					56
57	UNIT HEATERS UH.8		20		25		SPARE	58
59	UNIT HEATERS UH.9		20		3P			60
61	UNIT HEATERS UH.10		20				SPACE	62
63							SPACE	64
65	SPARE		25				SPACE	66
67			3P				SPACE	68
69	SPACE						SPACE	70

VOLTAGE: 120/208V — PHASE: 3 — WIRE: 4 — BREAKER I.C.: 10 kA
MAIN BREAKER: – — MAINS: 400 — FEEDER: –
MOUNTING: SURFACE — LOCATION: WASTE TRANSFER STATION
FED FROM: T1
NOTES: –

DISTRIBUTION PANEL PNL–A–E

CCT NO	DESCRIPTION	LOAD	TRIP AMPS	N ABC	TRIP AMPS	LOAD	DESCRIPTION	CCT NO
01	EXTERIOR LTG. N & E WALL		15		20		HIGH BAY LTG.	02
03	EXTERIOR LTG. S. WALL		15		2P			04
05	STORAGE RM. LTG.		15		20		HIGH BAY LTG.	06
07	BOILER RM. LTG.		15		2P			08
09	BOILER RM. LTG.		15		20		HIGH BAY LTG.	10
11	ELECTRICAL RM. LTG.		15		2P			12
13	FIRE PUMP RM. LTG.		15		20		HIGH BAY LTG.	14
15	RECEPT. FIRE PUMP ROOM		15		2P			16
17	RECEPT. ELECTRICAL		15		15		EXIT SIGNAGE	18
19	RECEPT. BOILER ROOM		15		15		GMU	20
21	RECEPT. EXTERIOR		15		15		VIDEO SURVEILLANCE RACK	22
23	RECEPT. EXTERIOR		15		15		SPRINKLER AIR COMPRESSOR	24
25	GENERATOR VENT. ENCLOSURE PANEL		15				SPACE	26
27							SPACE	28
29	GENERATOR		30				SPACE	30
31			3P				SPACE	32
33	FUEL TRANSFER SYSTEM		15		15		SPARE	34
35	MFACP		15		15		SPARE	36
37	HIGH LEVEL INDICATOR LIGHT		15		15		SPARE	38
39	SPARE		20		15		SPARE	40
41	SPARE		20		15		SPARE	42

VOLTAGE: 120/208V — PHASE: 3 — WIRE: 4 — BREAKER I.C.: 10 kA
MAIN BREAKER: – — MAINS: 225 — FEEDER: -
MOUNTING: SURFACE — LOCATION: ELECT. RM.
FED FROM: T2
NOTES: –

Conditions of Use

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PERMIT NUMBER P 010
DILLON CONSULTING LIMITED
2022-07-06

REGISTERED PROFESSIONAL ENGINEER — July 6, 2022 — B.L. MOORE — LICENSEE #L1372 — NWT/NU

NOT FOR CONSTRUCTION

Iqaluit

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
9	RELEASED FOR TENDER	2022/07/06	K.B.
8	ADDITIONAL REVIEW	2022/05/18	K.B.
7	TENDER	2022/04/14	K.B.
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2	50% REVIEW	2019/10/23	K.B.
1	30% REVIEW	2019/06/04	K.B.

DESIGN: BLM — REVIEWED BY: BLM
DRAWN: SCK — CHECKED BY: KB
DATE: JULY 2022
SCALE: NOTED

CITY OF IQALUIT
WASTE TRANSFER STATION

POWER AND SYSTEMS PLAN SERVICE ROOMS PANEL SCHEDULES

PROJECT NO. 19-9543
SHEET NO. WTS-E02

FILENAME: C:\PW_WORKING_DIRECTORY\PROJECTS_2019\405SCK\DWS\2728\198543-04-ELEC-DES.DWG
PLOT DATE: 2022-07-06 @ 10:57:28 PM PLOT SCALE: 1:25.6 PLOT STYLE: DILLON-STANDARD.CTB
PLOTTED BY: KIM, SUNHO

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᔪᓐᓇᕐᓂᖅ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 03/03/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 020 R1 **Referencing** 281600
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : GENESIS - GRI - MACURCO - BOSH - DSC

Descriptions / comments

Intrusion system

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

- [x] REVIEWED
- [ ] REVIEWED AS NOTED
- [ ] REVISE & RESUBMIT

DC SD NO. ELE-020 R1
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Mar 06 2023

DILLON CONSULTING

-GENESIS-

Riser Rated Security & Control Cable

Part Number: 2104

22 AWG 4 Stranded Conductors

Ratings	CMR, CL3R, FPLR, FT4, Sunlight Resistant
Approvals	ETL Listed

Construction

Conductor	22 AWG 7 Strand Bare Copper
Conductor Count	4
Insulation	Polypropylene (0.006" nom.)
Insulation Colors	Black, Red, White, Green
Lay Length	Straight
Shielding	N/A
Rip Cord	Yes
Jacket	PVC (0.015 " nom.)
Overall Diameter	0.135" nom.
Print Legend	GENESIS P/N 2104 4C 22AWG 3038058 (ETL) CL3R OR FPLR OR CMR C(ETL)US FT4 SUN RES 75C (RoHS) W/O# XXXXXX-XXXXXXX XXXXFT A B C D E F 1 2 3 4 5 6 7 8 9

Properties

Operating Voltage	300 Volts max.
DC Resistance	16.9 Ohms/1000' at 20°C
Capacitance	18.5 pF/ft. nom.
Impedance	82 Ohms nom.
Temperature	-20°C to 75°C
Flame Rating	UL 1666 (Riser); CSA C22.2 No. 2556 (FT4)
RoHS Compliant	Yes
Country of Origin	USA

Published: 2018-10-19

Triple Biased High Security

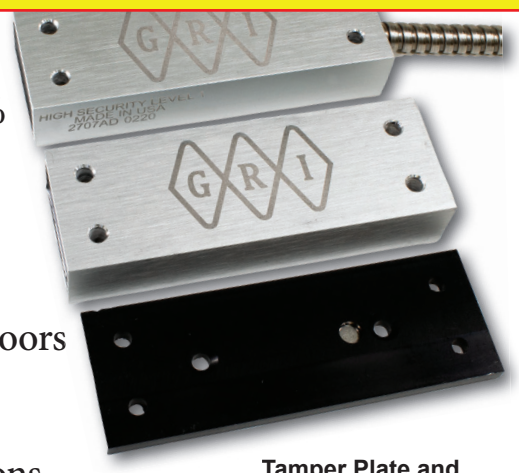
WWW.GRISK.COM

2707A- contact
Quantity: 13X
Main building
101-1,101-2,101-3,101-4,101-5,101-6,
101-7,101-9, 102, 105-2
Site Office Plan
201, 203
Scale House Plan
301

NEW

GR2707 Seri

- High security Level 1
- Alignment: +/- .125”
- Sensing air gap: .125 to .500” +/-20%
- 36” stainless steel armored cable
- Temperature rated -35º to +70º C
- Resistant to magnetic tamper and defeat
- Rated for indoor and outdoor use
- Inward/outward swinging, protected/non-protected doors
- Dry-contacts compatible with legacy alarm panels and interface systems
- Industry standard footprint & mounting hole locations
- Optional L and Z brackets and spacers available



Tamper Plate and 3 Spacers included

The GR2707 series high security switches are built with three C form reeds making them resistant to magnetic tamper and defeat. For added security, magnetic field tamper and pry tamper are standard features. Each GR2707 contact and actuation magnet set is factory compensated for the effects of steel.

The GR2707 Series can be used to protect doors in high security locations; airports, biotechnology labs and other medical research settings, warehouses, manufacturing plants, jewelry stores, banks, data processing centers, military bases, ammunition depots and energy-generation facilities.

The GR2707-A is configured in a SPDT configuration using three C form reeds. The GR2707-AD contains six C form reeds wired in a DPDT configuration. A supervisory loop with magnetic tamper feature is included in both models. A pry tamper connection for the 24 hour loop is included with both models.

INSTALLATION INSTRUCTIONS

The GR2707 series sensor and tamper plate will be mounted to the door frame, close to the gap, without door interference. The tamper plate magnet must be oriented to match the target engraved on the sensor. The actuator will be mounted below the sensor with respect to the mounting orientation best suited for direction of door swing. Be sure to aim the engraved targets at each other once fully installed. Spacers may be used for alignment purposes.

The following installation method is recommended: Bring the actuator towards the sensor until the closed loop is activated. Use a multi-meter or similar device to detect open/closed states. Continue moving the actuator another 0.125” to 0.250” towards sensor to provide adequate magnetic overdrive.

Mounting conditions, such as type of substrate, lateral alignment, thickness of the metal substrate, etc. may alter gap distance.

Note: Intended to be powered by a UL 603 Listed, power limited supply.

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

GEORGE RISK INDUSTRIES, INC.
G.R.I. PLAZA
KIMBALL, NE 69145
WWW.GRISK.COM

Made in U.S.A.

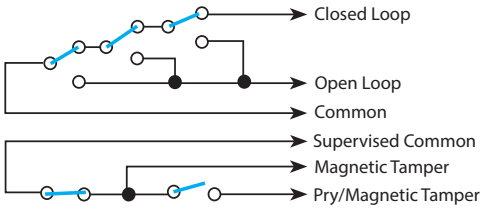
TOLL-FREE 1-800-445-5218
TOLL-FREE 1-800-523-1227
(308) 235-4645
FAX (308) 235-3561
E-MAIL: sales@grisk.com

Triple Biased High Security

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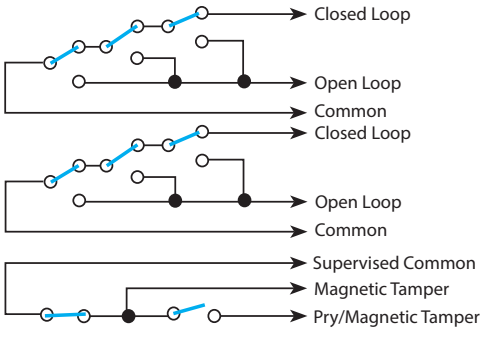
GR2707-A SPDT Wiring Diagram

Closed Loop	White
Open Loop	Red/White
Common	Silver/White
Supervised Common	Yellow/White
Magnetic Tamper	Green/White
Pry/Magnetic Tamper	Blue/White

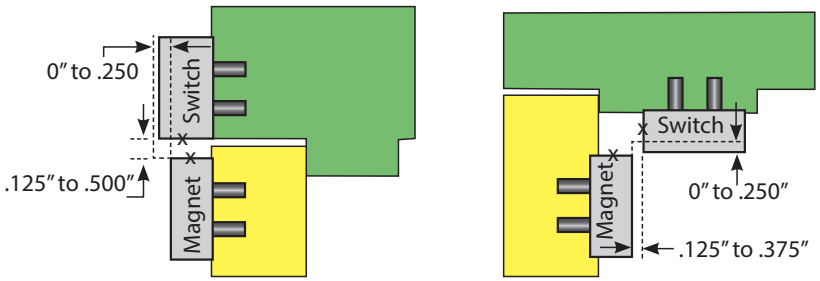


GR2707-AD DPDT Wiring Diagram

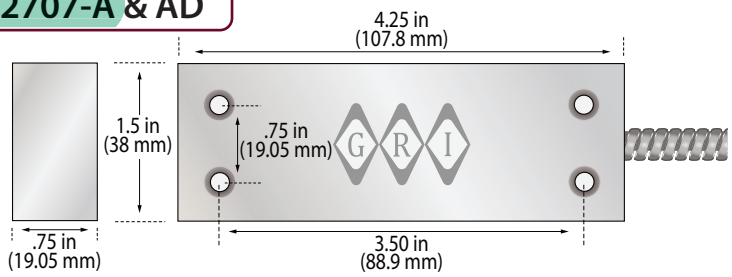
Closed Loop (1)	White
Open Loop (1)	Red/White
Common (1)	Silver/White
Closed Loop (2)	White/Black
Open Loop (2)	Red/Black
Common (2)	Black
Supervised Common	Yellow/White
Magnetic Tamper	Green/White
Pry/Magnetic Tamper	Blue/White



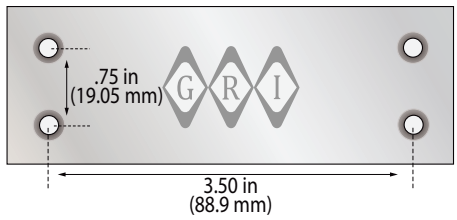
Installation Plans:



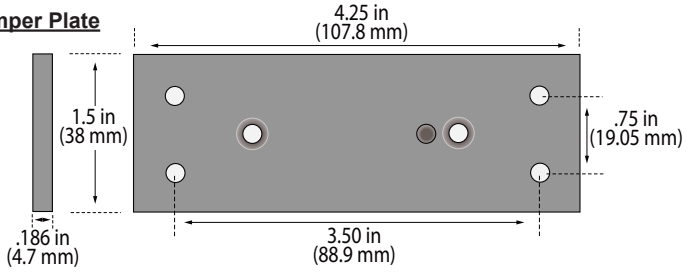
GR2707-A & AD



Magnet Part # M-2707



Tamper Plate



GRI PRODUCTS MEET OR EXCEED THESE MINIMUM GENERAL SPECIFICATIONS:

Part Number	Loop Type	Electrical Configuration	Max. Contact Rating (W)	Max. Switching Voltage (VDC)	Max. Switching Current (A)
GR2707-A	Open/Closed	SPDT	3	30	.25
GR2707-AD	Open/Closed	DPDT	3	30	.25

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

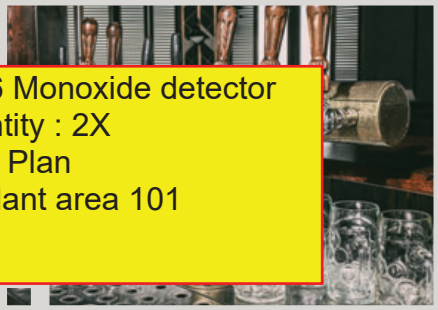
GEORGE RISK INDUSTRIES, INC.
G.R.I. PLAZA
KIMBALL, NE 69145
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(308) 235-4645
FAX (308) 235-3561
E-MAIL: sales@grisk.com

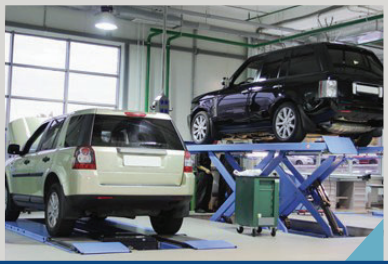
Macurco™
Building & Home Solutions





CM-6 Monoxide detector
Quantity : 2X
Floor Plan
3X Plant area 101





Whether you are looking for gas detection for a security system, building automation or HVAC system, for personal safety or for monitoring specific gases in potentially hazardous environments, Macurco has a gas detector to meet your needs.

Commercial Series

6-Series (12-24V) & 12-Series (120V) Fixed Gas Detectors



Grey Housing (Standard)

The Macurco 6 & 12 Series fixed gas detectors provide life-saving solutions to protect people and property. These fixed gas detectors are designed for low-level detection, mitigation, and notification. Let these detectors do the work for you by shutting off valves, turning on fans, engaging horns and strobes, and providing notification to fire panels and building automation systems when gases reach vital limits.



White Housing Option

Key Features

- Easy installation to 4x4 electrical boxes via mud plate
- User selectable settings (Default to industry standards) via two-button interface
- 5 A SPDT fan relay, 0.5A alarm relay to control fans, valves, louvers, horn and strobes
- 4-20mA output to control VFDs and send to BMS
- LED display to show gas concentrations easily
- End of life notification
- Field calibration kits available

Applications

- Parking garages
- Mechanical rooms
- Restaurants
- Battery charging stations
- Breweries
- Storage facilities
- Loading docks
- Warehouses
- Firehouses & ambulance bays
- Refrigeration facilities
- Vehicle repair facilities
- Bus depots

Commercial Series

Specifications

Size	4 1/2 x 4 x 2 1/8 in. (11.4 X 10.2 X 5.4 cm)
Weight	1 pound (0.45 kg)
Voltage/Current	***6-Series*** Power: 3 W (max) from 12 to 24 VAC or 12 to 32 VDC :Current @ 24 VDC: 75 mA in alarm, 50 mA fan relay on and 23 mA stand by ***12-Series*** Power: 100-240 VAC (50 to 60 HZ) Current: 1.0 A MAX
Operating Temperature	-4°F to 122°F (-20°C to 50°C) *CO_2 Detectors:* 32°F to 122°F (0°C to 50°C)
Ambient Humidity	10-90% RH non-condensing
Display	LED (can turn on/off)
Current Loop	Analog: 4-20mA MRS-485: Digital Modbus adapter BRS-485: BMS communication
Mounting	4" x 4" electrical box
Relays	5A Fan relay & 0.5A alarm relay User adjustable settings
Certifications	ETL Listed *See detector manual for additional certifications
Warranty	Two year limited warranty

Accessories

Name	Model Number
Control Panels	DVP-120, DVP-120M, DVP-120B, DVP-1200
Adapter Options	MRS-485, BRS-485
Horn and Strobe (4 color options)	HS-A, HS-B, HS-R, HS-C
Duct Mount Kit	DMK-1
Weatherproof Housing Kit	WHK-1
Step-down Transformers	PS-24, PS-24-H
Calibration Kits	Based on Gas Type


Control Panels


Horn and Strobe


Adapter Options


Calibration Kits


Weatherproof Housing Kit
(Detector sold separately)

Model Number	Gas Type	Range (Units)	Low Level Alarm Adjustable **(Default)**	High Level Alarm Adjustable **(Default)**	Expected Sensor Life	Recommended Coverage Area*
CX-6 | CX-12	Carbon Monoxide (CO) & Nitrogen Dioxide (NO_2)	(CO) 0-200 PPM (NO_2) 0-20 PPM	Refer to CM-6 (CO) & TX-6-ND (NO_2)	Refer to CM-6 (CO) & TX-6-ND (NO_2)	2 Years**	Up to 7,500 sq. ft.
CM-6 | CM-12	Carbon Monoxide (CO)	0-200 PPM	0, 15, 25, **35**, 50 or 100 PPM	0, 50, 100, 150 or **200** PPM	10 Years	Up to 7,500 sq. ft.
GD-6 | GD-12	Propane (LP) Methane (NG) Hydrogen (H_2)	0-50% LEL	0, 3, 4, 5, 6, 7, 8, 9, **10**, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20% LEL	OFF, 5, 10, 15, **20**, 25% LEL	5 Years	Up to 1,257 sq. ft.
TX-6-ND | TX-12-ND	Nitrogen Dioxide (NO_2)	0-20 PPM	0, 0.5, 0.7, 1.0, 1.2, 1.5, 1.7, 2.0, 2.2, **2.5**, 2.7, 3.0, 3.2, 3.5, 3.7, 4.0, 4.2, 4.5, 4.7, 5.0 PPM	0-20 PPM, (**5 PPM default**)	2 Years**	Up to 7,500 sq. ft.
TX-6-HS | TX-12-HS	Hydrogen Sulfide (H_2S)	0-50 PPM	0, 2, 3, 4, 5, 6, 7, **8**, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 PPM	0, 5, 10, 15, **20**, 25, 30, 35, 40, 45, 50 PPM	2 Years**	Up to 1,257 sq. ft.
TX-6-AM | TX-12-AM	Ammonia (NH_3)	0-100 PPM	0, 15, 20, **25**, 30, 35, 40, 45, 50, 55, 60, 65, 70, or 75 PPM	0, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, **75**, 80, 85, 90, 95 or 100 PPM	2 Years**	Up to 1,257 sq. ft.
OX-6 | OX-12	Oxygen (O_2)	0-25 % V/V	0, 18, 18.1… , **20.2**, 20.3, 20.4 & 20.5% v/v & high 23.5 % v/v (preset)	0, 18.5, 19, **19.5**, 20, 20.5 and high 23.5 % v/v (preset)	2 Years**	Up to 1,257 sq. ft.
RD-6 | RD-12	Refrigerant (R-22, R-134A, R-404A, R-407C, R-410A)	0-1,000 PPM	1000 PPM	1000 PPM	7 Years	Up to 1,257 sq. ft.
CD-6MC | CD-12MC	Carbon Dioxide (CO_2)	0-5,000 PPM	0, 600, 700, 800, 900, **1000**,1100... 2000... to 5000 PPM	0, 900, 1000, 1100...**4000** ... to 5000 PPM	15 Years	Up to 5000 sq. ft.
CD-6G (24V Only)	Carbon Dioxide (CO_2)	0-5% V/V	OFF, 0.09, 0.1... **0.2**...0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00	OFF, 0.09, 0.1... 0.2...0.25, **0.50**, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00	15 Years	Up to 5000 sq. ft.

** Replaceable Sensor

*Coverage Area is Application Dependent

ISO 9001:2015 CERTIFIED

Macurco Gas Detection
3601 N St. Paul Ave,
Sioux Falls, SD 57104
Phone: 1-877-367-7891
Website: www.macurco.com
Email: info@macurco.com

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DS1101i Détecteurs de Bris de Verre

www.boschsecurity.com

BOSCH
Des technologies pour la vie

DS-1101i : glassbreak detector
Quantity: 8X
Office Plan
3x - Lunch room 201
1x- Corridor 203
2x- Office 208
Scale House
2X - Office 301



- Techno
  microp
- Circuit
- Contrôle acoustique

La série DS1100i de détecteurs utilise la technologie d'analyse acoustique basée sur un microprocesseur pour détecter les fréquences spécifiques aux bris de verre. Les détecteurs DS1101i, DS1101i-BEL, DS1101i-CHI, et DS1101i-FRA peuvent être utilisés pour détecter le bris de différents types de verre : le verre plat, le verre trempé, laminé et armé. Une fonction intégrée de test environnemental alerte l'installateur en cas de risque de fausses alarmes dans les environnements extrêmes. Ces détecteurs ronds permettent un montage sur les plafonds ou les murs.

Functions

Traitement du signal
Les signaux audio, analysés suivant la technologie d'analyse acoustique, doivent présenter une combinaison de fréquences, de signature et de temporisation spécifique pour provoquer une alarme. Le niveau de sophistication de cette technique de traitement garantit la performance de la détection, tout en évitant les fausses alarmes.

Fonctions de test
Le testeur de bris de verre acoustique DS1110i en option permet, grâce au mode test magnétique, d'effectuer un test de vérification d'emplacement et de fonctionnement. Le mode test inclut également un test environnemental qui alerte l'installateur en présence de sources possibles de fausses alarmes dues au bruit ambiant. La fonction de contrôle acoustique automatique permet à l'utilisateur final de vérifier, en tapant dans ses mains, que le détecteur est bien alimenté et qu'il fonctionne correctement. Le voyant LED d'alarme visible à l'extérieur indique les conditions d'alarmes ou de test, et offre à l'utilisateur la possibilité de programmer son verrouillage.

Certifications and approvals

Region	Certification	
Europe	CE	DS1101i_DS1102i_DS1108i
USA	UL	ANSR: Intrusion Detection Units (UL639), ANSR7: Intrusion Detection Units Certified for Canada (ULC-S306) DS1101i
Canada	ULC	
China	CCC	2009031901000553 [DS1101i-CHI]

Installation/configuration notes

Notice
Les détecteurs de bris de verre acoustique sont conçus exclusivement en tant qu'élément d'un système de protection périmétrique. Ils doivent toujours être combinés à des détecteurs volumétriques.

Montage
Les détecteurs DS1101i peuvent être montés sur le plafond, ou sur le mur opposé ou adjacent à la fenêtre. Leur couverture dépend des caractéristiques acoustiques de la pièce et de la taille de la fenêtre.

Couverture standard
7,6 m pour des vitres de format supérieur à 30,5 cm x 30,5 cm

Technical specifications

Caractéristiques électriques

Alimentation :	23 mA à 12 V cc
Tension :	6 V cc à 15 V cc

Caractéristiques environnementales

Température de fonctionnement :	-29 °C à +49 °C *Pour les installations certifiées UL, 0 à +49 °C*
Immunité aux interférences radio :	Pas d'alarme ni de configuration à des fréquences critiques comprises entre 26 et 950 MHz à 50 V/m.

Caractéristiques mécaniques

Dimensions (H x Diamètre):	2,1 cm x 8,6 cm
Matériaux :	Coffret en plastique ABS à résistance élevée aux chocs

Sorties

Alarme :	Relais à contacts scellés de forme C conçus pour une valeur nominale de 3,5 W, 125 mA à 28 V cc pour les charges résistives.
Autosurveillance :	Contact d'autosurveillance à l'ouverture normalement fermé (NF) sur bornier séparé. Contacts calibrés à 28 V cc, 125 mA maximum.

Ordering information

DS1101i Détecteur de Bris de Verre
Ce détecteur rond avec relais de forme C utilise la technologie d'analyse acoustique basée sur un microprocesseur pour détecter les fréquences spécifiques aux bris de verre.
Order number **DS1101i**

DS1101i-CHI Détecteur de Bris de Verre pour la Chine
Ce détecteur rond avec relais de forme C utilise la technologie d'analyse acoustique basée sur un microprocesseur pour détecter les fréquences spécifiques aux bris de verre.
Order number **DS1101i-CHI**

Accessories

DS1110i Testeur de bris de vitres acoustique
Utilisé pour le contrôle des détecteurs de bris de vitres DS1101i, DS1102i, DS1103i et DS1108i. Alimenté par une pile alcaline de 9 V (fournie).
Order number **DS1110i**

Represented by:

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
emea.securitysystems@bosch.com
emea.boschsecurity.com

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Germany
www.boschsecurity.com

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2635657099 | fr, V15, 11. Nov 2016

DS9360 Détecteur de mouvement plafond 360° 18m

DS9360 Pir motion sensor ceiling
Quantity : 1X
Office Plan
Office 208

www.boschsecurity.com

Des technologies pour la vie





- Traitement du signal Motion Analyzer II
- Traitement adaptatif de l'hyperfréquence
- Systèmes de supervision à tests automatiques
- Miroirs remplaçables (deux miroirs sont fournis)

Le détecteur plafond IRP/hyperfréquence TriTech® DS9360 utilise différentes technologies de traitement du signal brevetées, pour une excellente performance de détection, sans fausses alarmes. Les sections IRP et hyperfréquence sont supervisées, ce qui garantit un fonctionnement correct du détecteur. Les optiques à miroirs remplaçables sur site permettent une installation sur des plafonds de 2,4 m à 5.5 m de haut.

Fonctions

Traitement du signal
Utilise des technologies d'infrarouges passifs et de micro-ondes pour assurer une condition d'alarme dès que les deux champs de protection sont simultanément activés. Les signaux d'alarme doivent répondre aux conditions des deux technologies pour qu'une alarme s'active. Sensibilité IRP et micro-ondes ajustable.

Traitement du signal IRP
Motion Analyzer II utilise plusieurs seuils et fenêtres de synchronisation pour analyser la temporisation, l'amplitude, la durée et la polarité des signaux pour prendre une décision d'alarme. Il tolère des niveaux extrêmes de perturbations lumineuses et thermiques provoquées par des appareils de chauffage et de climatisation, les courants d'air chauds et froids, la lumière du soleil, les éclairs et les phares en mouvement. Il offre deux réglages de sensibilité.

Traitement du signal à micro-ondes
La technologie de traitement adaptatif prend en compte les perturbations d'arrière-plan. Ce dispositif permet de réduire les fausses alarmes, sans nuire à la performance de détection.

Fonctions de test
Trois voyants DEL tricolores extérieurs d'alarme haute performance, visibles de tous les angles, se mettent à clignoter en cas de défaillance.

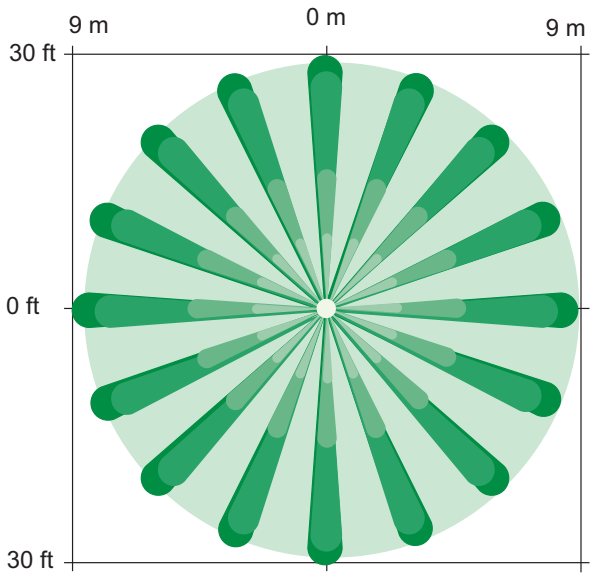
Certifications et homologations

Zone	Conformité aux réglementations/labels de qualité	
Australie	RCM	DS9360
Russie	GOST	TC N RU Д-NL.MH09.B.00334 EAC
États-Unis	UL	20190115; UL639 – Standard for Intrusion-Detection Units

Zone	Conformité aux réglementations/labels de qualité	
	FCC	ESV9360 [DS9360]
Brésil	ANATEL	0868-03-1855 [DS9360]
Singapour	iDA	LPREQ-S0153-2004 [DS9360]

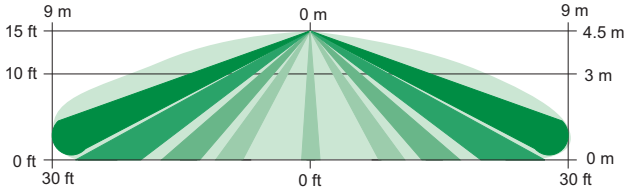
Remarques sur l'installation/la configuration

Diagrammes de couverture



Vue supérieure

Diagramme de couverture de 360 ° x 18 m de diamètre



AR13-18 Vue de côté

Sélection d'un miroir

Deux types de miroirs (AR8-13, AR13-18) sont livrés avec le produit pour s'adapter aux différentes hauteurs de plafond.

Type de miroir et hauteur de plafond

AR8-13	2,4 m à 4,0 m
AR13-18	4,0 m à 5,5 m

Composants

Quantité	Composant
1	Détecteur
1	Support à rotule B334
1	Miroir pour couverture standard, étiqueté OA90
1	Miroir pour couverture longue portée, étiqueté OA300

Caractéristiques techniques

Conception du boîtier

Design :	La tête électronique modulaire en ABS à haute résistance aux chocs, et le design du socle de fixation/câblage muni d'un dôme en polyéthylène robuste, facilitent l'accès aux interrupteurs de paramétrage.
Dimensions :	8,5 cm x 13,3 cm (3.5 in. x 5.25 in.)
Matériau :	Boîtier en plastique ABS à résistance élevée aux chocs

Caractéristiques environnementales

Température de fonctionnement :	-40 à +49 °C *Pour les installations certifiées UL, 0°C à +49°C*
Immunité aux interférences radio :	Pas d'alarme ni de configuration à des fréquences critiques comprises entre 26 et 950 MHz à 50 V/m.

Conforme à la catégorie environnementale II (EN50130-5)

Montage

Hauteur de montage :	2.4 m à 5,5 m (plage recommandée)
Emplacement :	Montage direct au plafond ou sur un coffret de branchement octogonal standard de 10,2 cm.

Relais

Alarme :	Relais à contacts scellés de forme C conçus pour une valeur nominale de 3,0 W, 125 mA à 28 V cc pour les charges résistives.
Auto-surveillance :	Contact d'autosurveillance normalement fermé (couvercle en place). Contacts calibrés à 28 Vdc, 125 mA maximum.

Alimentation requise

Alimentation :	18 mA en veille, 75 mA sous alarme.
Tension :	6 Vdc à 15 Vdc

Marques commerciales

TriTech® est une marque déposée de Bosch Security Systems, Inc. aux Etats Unis.

Informations de commande

DS9360 Détecteur de mouvement plafond 360° 18m

Offre une couverture IRP et hyperfréquences de 360° sur 18 m de diamètre, et peut être monté à une hauteur comprise entre 2,4 m et 5.5 m.
Numéro de commande **DS9360**

Représenté par :

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2629933963 | fr, V25, 05. Fév 2019

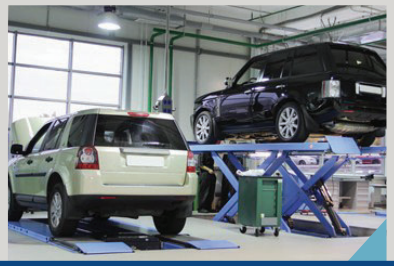
Macurco™
Building & Home Solutions



GD-6 gaz detector
Quantity: 1X
Site Office Plan
Mechanical room 205







Whether you are looking for gas detection for a security system, building automation or HVAC system, for personal safety or for monitoring specific gases in potentially hazardous environments, Macurco has a gas detector to meet your needs.

Commercial Series

6-Series (12-24V) & 12-Series (120V) Fixed Gas Detectors



Grey Housing (Standard)

The Macurco 6 & 12 Series fixed gas detectors provide life-saving solutions to protect people and property. These fixed gas detectors are designed for low-level detection, mitigation, and notification. Let these detectors do the work for you by shutting off valves, turning on fans, engaging horns and strobes, and providing notification to fire panels and building automation systems when gases reach vital limits.



White Housing Option

Key Features

- Easy installation to 4x4 electrical boxes via mud plate
- User selectable settings (Default to industry standards) via two-button interface
- 5 A SPDT fan relay, 0.5A alarm relay to control fans, valves, louvers, horn and strobes
- 4-20mA output to control VFDs and send to BMS
- LED display to show gas concentrations easily
- End of life notification
- Field calibration kits available

Applications

- Parking garages
- Mechanical rooms
- Restaurants
- Battery charging stations
- Breweries
- Storage facilities
- Loading docks
- Warehouses
- Firehouses & ambulance bays
- Refrigeration facilities
- Vehicle repair facilities
- Bus depots

Commercial Series

Specifications

Size	4 1/2 x 4 x 2 1/8 in. (11.4 X 10.2 X 5.4 cm)
Weight	1 pound (0.45 kg)
Voltage/Current	***6-Series*** Power: 3 W (max) from 12 to 24 VAC or 12 to 32 VDC :Current @ 24 VDC: 75 mA in alarm, 50 mA fan relay on and 23 mA stand by ***12-Series*** Power: 100-240 VAC (50 to 60 HZ) Current: 1.0 A MAX
Operating Temperature	-4°F to 122°F (-20°C to 50°C) *CO_2 Detectors:* 32°F to 122°F (0°C to 50°C)
Ambient Humidity	10-90% RH non-condensing
Display	LED (can turn on/off)
Current Loop	Analog: 4-20mA MRS-485: Digital Modbus adapter BRS-485: BMS communication
Mounting	4" x 4" electrical box
Relays	5A Fan relay & 0.5A alarm relay User adjustable settings
Certifications	ETL Listed *See detector manual for additional certifications
Warranty	Two year limited warranty

Accessories

Name	Model Number
Control Panels	DVP-120, DVP-120M, DVP-120B, DVP-1200
Adapter Options	MRS-485, BRS-485
Horn and Strobe (4 color options)	HS-A, HS-B, HS-R, HS-C
Duct Mount Kit	DMK-1
Weatherproof Housing Kit	WHK-1
Step-down Transformers	PS-24, PS-24-H
Calibration Kits	Based on Gas Type


Control Panels


Horn and Strobe


Adapter Options


Calibration Kits


Weatherproof Housing Kit
(Detector sold separately)

Model Number	Gas Type	Range (Units)	Low Level Alarm Adjustable **(Default)**	High Level Alarm Adjustable **(Default)**	Expected Sensor Life	Recommended Coverage Area*
CX-6 | CX-12	Carbon Monoxide (CO) & Nitrogen Dioxide (NO_2)	(CO) 0-200 PPM (NO_2) 0-20 PPM	Refer to CM-6 (CO) & TX-6-ND (NO_2)	Refer to CM-6 (CO) & TX-6-ND (NO_2)	2 Years**	Up to 7,500 sq. ft.
CM-6 | CM-12	Carbon Monoxide (CO)	0-200 PPM	0, 15, 25, **35**, 50 or 100 PPM	0, 50, 100, 150 or **200** PPM	10 Years	Up to 7,500 sq. ft.
GD-6 | GD-12	Propane (LP) Methane (NG) Hydrogen (H_2)	0-50% LEL	0, 3, 4, 5, 6, 7, 8, 9, **10**, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20% LEL	OFF, 5, 10, 15, **20**, 25% LEL	5 Years	Up to 1,257 sq. ft.
TX-6-ND | TX-12-ND	Nitrogen Dioxide (NO_2)	0-20 PPM	0, 0.5, 0.7, 1.0, 1.2, 1.5, 1.7, 2.0, 2.2, **2.5**, 2.7, 3.0, 3.2, 3.5, 3.7, 4.0, 4.2, 4.5, 4.7, 5.0 PPM	0-20 PPM, (**5 PPM default**)	2 Years**	Up to 7,500 sq. ft.
TX-6-HS | TX-12-HS	Hydrogen Sulfide (H_2S)	0-50 PPM	0, 2, 3, 4, 5, 6, 7, **8**, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 PPM	0, 5, 10, 15, **20**, 25, 30, 35, 40, 45, 50 PPM	2 Years**	Up to 1,257 sq. ft.
TX-6-AM | TX-12-AM	Ammonia (NH_3)	0-100 PPM	0, 15, 20, **25**, 30, 35, 40, 45, 50, 55, 60, 65, 70, or 75 PPM	0, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, **75**, 80, 85, 90, 95 or 100 PPM	2 Years**	Up to 1,257 sq. ft.
OX-6 | OX-12	Oxygen (O_2)	0-25 % V/V	0, 18, 18.1… , **20.2**, 20.3, 20.4 & 20.5% v/v & high 23.5 % v/v (preset)	0, 18.5, 19, **19.5**, 20, 20.5 and high 23.5 % v/v (preset)	2 Years**	Up to 1,257 sq. ft.
RD-6 | RD-12	Refrigerant (R-22, R-134A, R-404A, R-407C, R-410A)	0-1,000 PPM	1000 PPM	1000 PPM	7 Years	Up to 1,257 sq. ft.
CD-6MC | CD-12MC	Carbon Dioxide (CO_2)	0-5,000 PPM	0, 600, 700, 800, 900, **1000**,1100... 2000... to 5000 PPM	0, 900, 1000, 1100...**4000** ... to 5000 PPM	15 Years	Up to 5000 sq. ft.
CD-6G (24V Only)	Carbon Dioxide (CO_2)	0-5% V/V	OFF, 0.09, 0.1... **0.2**...0.25, 0.50, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00	OFF, 0.09, 0.1... 0.2...0.25, **0.50**, 1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00	15 Years	Up to 5000 sq. ft.

** Replaceable Sensor

*Coverage Area is Application Dependent

ISO 9001:2015 CERTIFIED

Macurco Gas Detection
3601 N St. Paul Ave,
Sioux Falls, SD 57104
Phone: 1-877-367-7891
Website: www.macurco.com
Email: info@macurco.com

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LCD4501C LCD Keypad
Quantity : 5X
Power Plan main building
101-2, 101-1
Site Office Plan
203, 201
Scale House Plan
301

MAXSYS®
INTEGRATED SYSTEMS TECHNOLOGY

LCD4500/4501
PLAIN LANGUAGE KEYPADS



LCD4501

MAXSYS system keypads provide a plain language interface using a large 32 character LCD display with adjustable brightness and contrast.

All system programming and user operations can be performed using the LCD keypads. Keypads are connected to PC4010/4020 control panels via a 4-wire system communications bus (Combus) which provides power for the keypads and acts as the system communication channel.

Keypads are enrolled onto the system at the time of installation, and are supervised for low voltage and presence by the main panel.

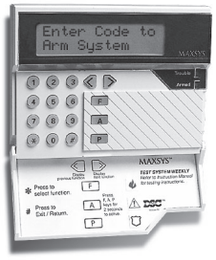
Keypads Per System

PC4010, PC4010CF, PC4020, and PC4020CF control panels :

- up to 16 keypads
- any mix of LCD4500/4501 keypads can be used in a system
- keypads can be assigned as "global" – for system wide control or "partition" – for operation of a specific partition only

LCD4500 Series Keypads – Features





- **two line, 32 character LCD display**
- **programmable LCD display contrast and brightness**
- **LCD display and keys backlit for low light viewing**
- **individual LED indicators for Trouble and Armed**
- **piezo buzzer provides audible feedback for correct/incorrect key entries, entry/exit alert, and system trouble conditions**
- **three dedicated keys for keypad activated alarms :**
  - Fire, Panic, Auxiliary
- **keypad activated Duress code…** user code programmed as a Duress code.
- **keys 1 to 5 programmable as function keys…** see *Function Key Options* for a complete list of available functions.
- **other keypad versions in LCD4500 series (R = Canadian version) :**
  - **LCD4500T**..... keypad with wall tamper
  - **LCD4520/4500R**..... keypad with red bezel for fire panels
  - **LCD4520T/4500TR** .... keypad w/ wall tamper & red bezel for fire panels

LCD4501 Series Keypads – Features

- **two line, 32 character LCD display**
- **programmable LCD display contrast and brightness**
- **LCD display and keys backlit for low light viewing**
- ***'backlighting boost'* provides extra key back-lighting when any key is pressed**
- **individual LED indicators for Trouble, Armed, and Ready**
- **piezo buzzer provides audible feedback for correct/incorrect key entries, entry/exit alert, and system trouble conditions**
- **three dedicated keys for keypad activated alarms :**
  - Fire, Panic, Auxiliary
  - each key individually enabled via programming
  - each key individually programmable to activate the bell output with a choice of steady or pulsing output
  - each key individually programmable to activate the keypad buzzer to provide 3 beeps on a keypress.
- **keypad activated Duress code…** user code programmed as a Duress code.
- **5 individual programmable function keys…**see *Function Key Options* for a complete list of available functions.

  LCD4501 Keypad…factory default functions are :
  1. Stay..... Stay arming
  2. Away ..... Away arming
  3. Chime ..... Door chime on/off
  4. Reset..... Reset smoke detectors
  5. Exit ..... Activate quick exit

  LCD4521/4501R series keypads (fire)…factory default functions are :
  1. Silence Trouble
  2. Silence Bells
  3. Fire Reset
  4. Fire Drill
  5. Lamp Test
- **other keypad versions in LCD4501 series (R = Canadian version) :**
  - **LCD4501T**..... keypad with wall tamper
  - **LCD4521/4501R** ..... keypad with red bezel for fire panels
  - **LCD4521T/4501TR** .... keypad w/ wall tamper & red bezel for fire panels

Function Key Options

The following is a complete list of functions that can be programmed for the five dedicated function keys on LCD4501 series keypads or for keys 1 through 5 on LCD4500 series keypads. Each keypad can be programmed with a different set of functions if desired.

- Null (no function)
- Away Arm
- Door Chime On/Off
- Bypass Mode
- Alarm Memory
- User Functions
- Reactivate Stay/Away Zones
- Silence Trouble
- Fire Reset
- Lamp Test
- Stay Arm
- No-Entry Arm
- System Test
- Trouble Display
- Programming Access Codes
- Quick Exit
- Command Output Option #1-8
- Silence Bells
- Fire Drill
- Fire Inspection Test

Specifications

- **operating environment** - 32 to 122°F (0 to 50°C)
  - 90% RH non-condensing
- **current draw** …55 mA (from Combus)
  …90 mA with backlighting boost on LCD4501 series
- **dimensions** …5.75" x 4.5" x 1" deep (14.4 x 11.4 x 2.5 cm)

Listings

USA*

UL1610 .... Central Station Burglar Alarm
UL609 ..... Local Burglar Alarm
UL365 ..... Police Station Burglar Alarm
UL985 ..... Household Fire Warning
UL1023 .... Household Burglar Alarm

In addition, the LCD4520/21 is listed :

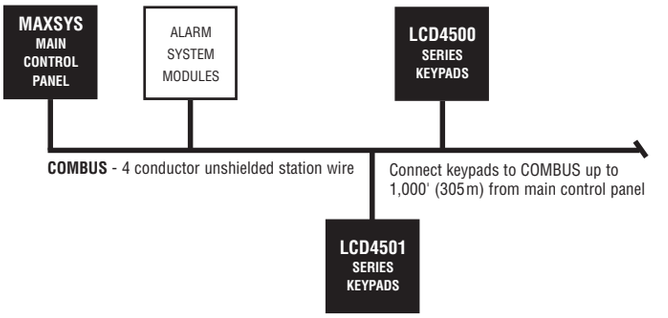
UL864 ..... Control Units System (L, CS, -A, M, SS, WF)

*** At least one fire version keypad must be used with Maxsys UL listed 'CF' commercial fire panels**

CANADA

ULC-S527 .... Central Station Fire Alarm
ULC-S302 .... Central & Monitoring Station Burglar Alarm
ULC-S303 .... Local Alarm (Commercial Burglary)
ULC-S310 .... Household Burglar Alarm
ULC-S545 .... Household Fire Warning
UL294 ..... Access Control

Typical System Arrangement



Ordering Information

LCD4500 Series... without dedicated function keys :

LCD4500 ..... LCD keypad
LCD4500T ..... LCD keypad with wall tamper
LCD4520 ..... LCD keypad with red bezel for fire panels
LCD4520T ..... LCD keypad with red bezel and wall tamper

Canadian Version

LCD4500R ..... LCD keypad with red bezel for fire panels (CND)
LCD4500TR ..... LCD keypad with red bezel and wall tamper (CND)

LCD4501 Series... with 5 dedicated function keys :

LCD4501 ..... LCD keypad with 5 function keys
LCD4501T ..... LCD keypad with 5 function keys & wall tamper
LCD4521 ..... LCD keypad with 5 function keys & red bezel for fire panels
LCD4521T ..... keypad with 5 function keys, wall tamper & red bezel for fire panels

Canadian Version

LCD4501R ..... LCD keypad with 5 function keys & red bezel for fire panels (CND)
LCD4501TR ..... keypad with 5 function keys, wall tamper & red bezel for fire panels (CND)

DSC Security Products

Digital Security Controls
1645 Flint Road, Downsview, ON Canada M3J 2J6

Distributed by :

North American # 29002926

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MAXSYS®
INTEGRATED SYSTEMS TECHNOLOGY

PC4020

16 TO 128 ZONE CONTROL PANEL

PC4020 Control Panel
Quantity: 3X
Power Plan Main Building
shredder area door 101-2
Site Office Plan
Corridor 203
Scale Office Plan
Office 301



The PC4020 is a 16 zone panel which is expandable to 128 zones. Expansion can be accomplished over a 4-wire Combus using a variety of input/output and functional modules. The base panel includes two addressable loops which can accommodate up to 112 addressable input devices and the system can also be expanded with a 64 zone wireless receiver which connects to the system via the 4-wire Combus. Addressable, hardwired and wireless expansion can be used in any combination that suits the application.

The MAXSYS is software ready to implement all the security, access control, automation and residential fire functions by simply adding conventional or addressable devices, access control modules, and automation interface components.

PC4020 Panel Features

- **16 programmable zones…** zones can be NC with no EOLR, NO/NC with single EOLR or NC with double EOLR.
  - 30 programmable zone types & 8 zone options
- **2 PGM outputs…** each with 2 application choices :
  - as standard PGM output – 59 programmable options
  - as addressable loop – up to 112 addressable devices.
- **1 supervised bell circuit…** 59 programmable options
- **1 unswitched auxiliary power supply**
- **1 switched auxiliary power supply**
- **supervised digital alarm communicator with 4 formats :**
  - 20 bps, 1400/2300 Hz handshake
  - Contact ID - SIA with auto-reporting codes
- **3 telephone numbers…** 32 digits each
- **3 event initiated pager formats**
- **supervised battery charger**
- **PC-Link connector…** for local upload/download
- **8 system partitions…** 9 account codes
- **1,000 user/card codes…** 64 access levels
- **user/card codes assignable by partition**
- **3,000 event buffer…** 2,800 viewable on keypad
- **59 programmable output options for :**
  - bell zone, PGM outputs, relay outputs, transistor outputs
- **comprehensive scheduling :**
  - 99 date schedules
  - 50 arm/disarm schedules
  - 16 automation schedules
  - 4 two year holiday schedules
  - 99 open/close suppression schedules
  - 50 addressable smoke detector test schedules
- **multiple communication capabilities :**
  - built in digital dialer
  - optional module for DVAC
  - optional cellular communications
  - optional Long-range radio communication
- **upload/download capability…** full featured with separate upload/download phone number

System Expansion

The PC4020 is easily expanded by adding input/output and functional modules onto the 4-wire communications bus (Combus).

- **Combus…** up to four runs of 1,000 feet (305 m), can be t-tapped and is supervised for low voltage and module communication.
- **up to 16 LCD keypads…** 32 character display
  - complete system programming via keypads
  - keypads can be 'partition' or 'global' operation
  - Ready, Armed, and Trouble indicators – LCD4501
  - 5 programmable function keys – LCD-4501
  - 27 function key options
  - Trouble and Armed indicators – LCD4500
  - piezo buzzer for audible feedback and trouble
  - 4 keypad activated alarms – Panic, Emergency, Fire, Duress
- **up to 128 hardwired zones…** using PC4108A/PC4116 eight and sixteen zone expansion modules.
- **up to 64 wireless zones…** using the PC4164RS wireless receiver and DSC wireless sensors and control devices.
- **up to 112 addressable zones…** using the main panel PGM outputs as addressable loops and DSC addressable sensors.

Hardwired, Wireless and Addressable zones may be mixed on the system up to the total system capacity of 128 zones.

- **up to 144 low current outputs…** using PC4216 modules – 16 outputs per module – 9 modules per system.
- **up to 64 relay outputs…** using PC4204 quad relay/power supply modules – up to 16 modules/system – each PC4204 also provides up to 1 amp of auxiliary power and can be used to repower the Combus.
- **point/graphic annunciation…** using PC4632/PC4664 remote annunciators for system, partition and zone annunciation
- **up to 32 access controlled doors…** using up to 16 PC4820 two reader access control modules with stand alone capability.
- **X-10 automation…** using the Escort PC4580 module – controls up to thirty two X-10 devices and provides voice assisted system status and control from any touchtone telephone.
- **system printer or DVACS communicator…** using the PC4400 printer/DVACS interface module.
- **backup alarm communication using :**
  - Links 1000™ cellular communicator
  - Links 2150™ or Links 2450™ long-range radio transmitters.

All of the features, functions, and expansion capabilities of the PC4020 control panel are included in the PC4020CF versions.

Electrical Specifications

- **bell output…** 12VDC, 700mA max. continuous
  - up to 2A for 4 minutes using battery assist.
  - PTC over current protected – self-restoring.
- **AUX+ output…** 12VDC, 500mA max.
- **SAUX+ output…** 12VDC, 300mA max.
  - SAUX+ output is normally +12VDC and power is removed upon activation. Typically used to reset 4-wire smoke detectors.

  Note… total for AUX+ output and SAUX+ output is 500mA max. e.g. If the SAUX+ output is loaded to 200mA then only 300mA remains for the AUX+ output.
- **AUX+ and SAUX+ outputs protected by a common PTC over current device which is self-restoring.**
- **PGM outputs :**
  - as standard PGM outputs… 12VDC, 50mA max. each. PGM outputs are normally unpowered and switch to +12VDC upon activation.
  - as addressable outputs… 12VDC, 170mA max. each

  Note… PGM outputs are individually programmable as addressable loops or as general purpose PGM outputs.
- **Combus…** 500mA max. from the PC4020 main panel
  - additional power is provided by PC4204 modules. Maximum Combus capacitance is 80nF which is typically 4,000feet (1,219m) of 22AWG wire. Consult wire manufacturer for specifications of wire to be used.

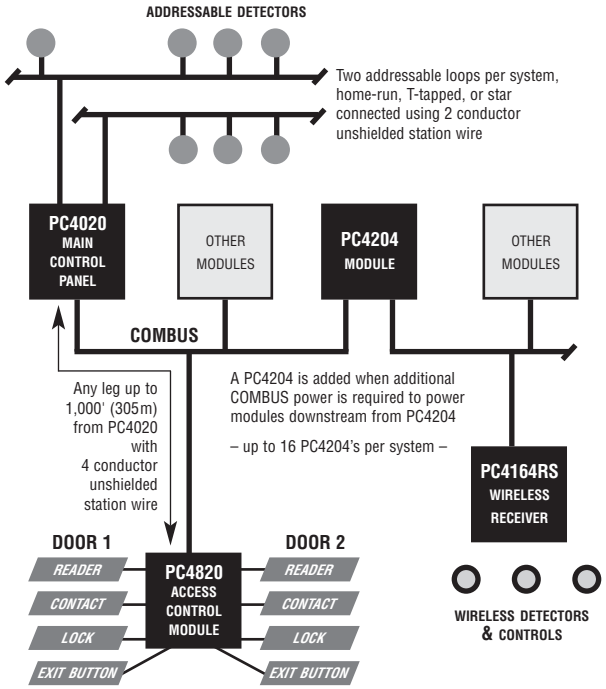
Note… total loading for the Bell output, AUX+, SAUX+, PGM1, PGM2 and the Combus must not exceed 900mA. This limit may be exceeded by bell output if extra current required is drawn from the battery.

- **battery charger…** up to 350mA to charge 12volt lead-acid batteries up to 14Ah capacity. Battery charger is supervised for opens and is protected by PTC over current device which is self-restoring.
- **input power…** 16VAC, 40VA
- **ground fault detection…** built-in and enabled by connecting earth ground to EGND terminal on PC4020 main panel. (use for 'CF' version panels only)

Mechanical Specifications

- **operating environment** - 32 to 122°F (0 to 50°C)
  - 90% RH non-condensing
- **PC4050C beige cabinet :**
  - surface mount
  - hinged door with screw closure.
  - provision for door keylock
  - provision for door and wall tamper switches.
  - space for two 12volt 7Ah lead-acid rechargeable batteries.
  - 14.8"H x 12.0"W x 4.9"D (37.6 x 30.5 x 12.5cm)

Typical System Arrangement



Ordering Information

PC4020… security control panel which includes :
- PC4020… main control module
- PC4050C… beige cabinet
- installation manual, user manual, and programming worksheets
- module mounting hardware and 32 EOL resistors

PC4020CAR… as PC4020 but with PC4050CAR attack resistant cabinet

Keypads are not supplied with the main panel – at least one keypad is required per system. Select from the following keypad types :

LCD4500… alphanumeric keypad without function keys

LCD4500T… as LCD4500 but with wall tamper switch

LCD4501… alphanumeric keypad with 5 function keys

LCD4501T… as LCD4501 but with wall tamper switch

LCD4520/20T, LCD4500R/TR, LCD4521/21T, LCD4501R/TR… identical to the above but have red bezels for use with PC4020CF fire panels.

Listings

USA[1][2]

UL1610 .... Central Station Burglar Alarm
UL609 ..... Local Burglar Alarm
UL365 ..... Police Station Burglar Alarm
UL985 ..... Household Fire Warning
UL1023 .... Household Burglar Alarm

CANADA

ULC-S527 .... Central Station Fire Alarm
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ULC-S545 .... Household Fire Warning
UL294 ..... Access Control

[1] At least one fire version keypad must be used with Maxsys UL listed 'CF' commercial fire panels

[2] The Links1000™ Cellular Communicator has not been investigated by UL

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Printed in Canada 2002.07

Tripp Lite
1111 W. 35th Street
Chicago, IL 60609 USA
Telephone: 773.869.1234
www.tripplite.com

Tripp Lite Waber Industrial Power Strip, 4-Outlet, 6 ft. (1.83 m) Cord, Locking Switch Cover

MODEL NUMBER: **UL603CB-6**







Highlights

- 4 outlets
- 6-ft. (1.83 m) cord
- 7.38" length
- All metal housing
- Lighted on/off switch with locking safety cover

Package Includes

- UL603CB-6 Power Strip
- Warranty information
- Instruction manual

Description

The Waber-by-Tripp Lite UL603CB-6 Power Strip offers a convenient method of power distribution in workbench, wallmount or floor mount applications. Includes 4 NEMA 5-15R output receptacles with 1.25 inch center-to-center spacing, 6-ft. (1.83 m) AC line cord and keyhole mounting tabs for installation in a wide variety of applications. Corded, multi-outlet strip reduces cabling clutter and enables the connection of multiple electrical devices to a single AC wall socket. Unfiltered electrical pass-through makes UL603CB-6 ideal for distributing alternate waveform UPS or generator power. Features rugged all-metal housing, lighted power switch with transparent guard to prevent accidental shutoff, 15 amp resettable circuit breaker and attractive blue/gray color scheme.
PLUG/OUTLETS - Input: NEMA 5-15P/Output: 4 NEMA 5-15R
ELECTRICAL - 120VAC, 50/60Hz, 15A (Requires standard NEMA 5-15R wall receptacle)
FORMAT - Corded power distribution strip

Features

- Multi-outlet power strip offers convenient power distribution in workbench, wallmount or floor mount applications
- Includes 4 NEMA 5-15R output receptacles with 1.25 inch center-to-center outlet spacing
- Lighted power switch with transparent snap-over guard to prevent accidental shutoff
- Keyhole mounting tabs for installation in a wide variety of applications
- UL1363 (USA), cUL (Canada)
- 15 amp power handling capacity with circuit breaker

Specifications

OVERVIEW	
UPC Code	037332103734
INPUT	

Tripp Lite
1111 W. 35th Street
Chicago, IL 60609 USA
Telephone: 773.869.1234
www.tripplite.com

Nominal Input Voltage(s) Supported	120V AC
Recommended Electrical Service	15A 120V
Input Cord Gauge Type	14 gauge; SJT
Voltage Compatibility (VAC)	120
Input Plug Type	NEMA 5-15P
Input Cord Length (ft.)	6
Input Cord Length (m)	1.83
Integrated Cord Clip	No
OUTPUT	
Frequency Compatibility	50 / 60 Hz
Output (Watts)	1800
Output Receptacles	(4) 5-15R
Circuit Breaker (amps)	15
Transformer Accommodation	(2) Yes
Outlet Orientation	Single row of 4
Right-Angle Outlets	No
Outlet Spacing	1.25 in.
USER INTERFACE, ALERTS & CONTROLS	
Switches	Lighted 2 position switch controls power to all outlets
Locking Switch Cover	Transparent on/off switch cover prevents accidental turn-off
PHYSICAL	
Material of Construction	Metal
Color	Gray
Power Cord Color	Black
Housing Color	Blue; Gray
Mounting Holes or Slots	Yes
Slot or Hole Mount Measurement (Center to Center)	Distance between keyhole tabs = 127mm; Distance between end tabs = 201.12mm
Outlets Measurement (Center to Center)	30mm
Receptacle Color	Black
Shipping Dimensions (hwd / cm)	5.08 x 24.38 x 15.49
Shipping Dimensions (hwd / in.)	2.00 x 9.60 x 6.10
Shipping Weight (kg)	0.73

Tripp Lite
1111 W. 35th Street
Chicago, IL 60609 USA
Telephone: 773.869.1234
www.tripplite.com

Shipping Weight (lbs.)	1.60
Unit Dimensions (hwd / in.)	7.38 x 2.5 x 1.5
Unit Dimensions (hwd / cm)	18.75 x 6.4 x 3.8
Mounting Details	Includes flanges
FEATURES & SPECIFICATIONS	
Antimicrobial	No
Built-In Circuit Breaker	Yes
STANDARDS & COMPLIANCE	
Product Certifications	cUL Listed; UL 1363; UL Listed
Product Compliance	RoHS
WARRANTY	
Product Warranty Period (Worldwide)	Lifetime limited warranty

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Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 021 R1 **Referencing** 282300
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : AXIS - WBOX TECHNOLOGIES - GENESIS - COMNET

Descriptions / comments

Videosurveillance

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

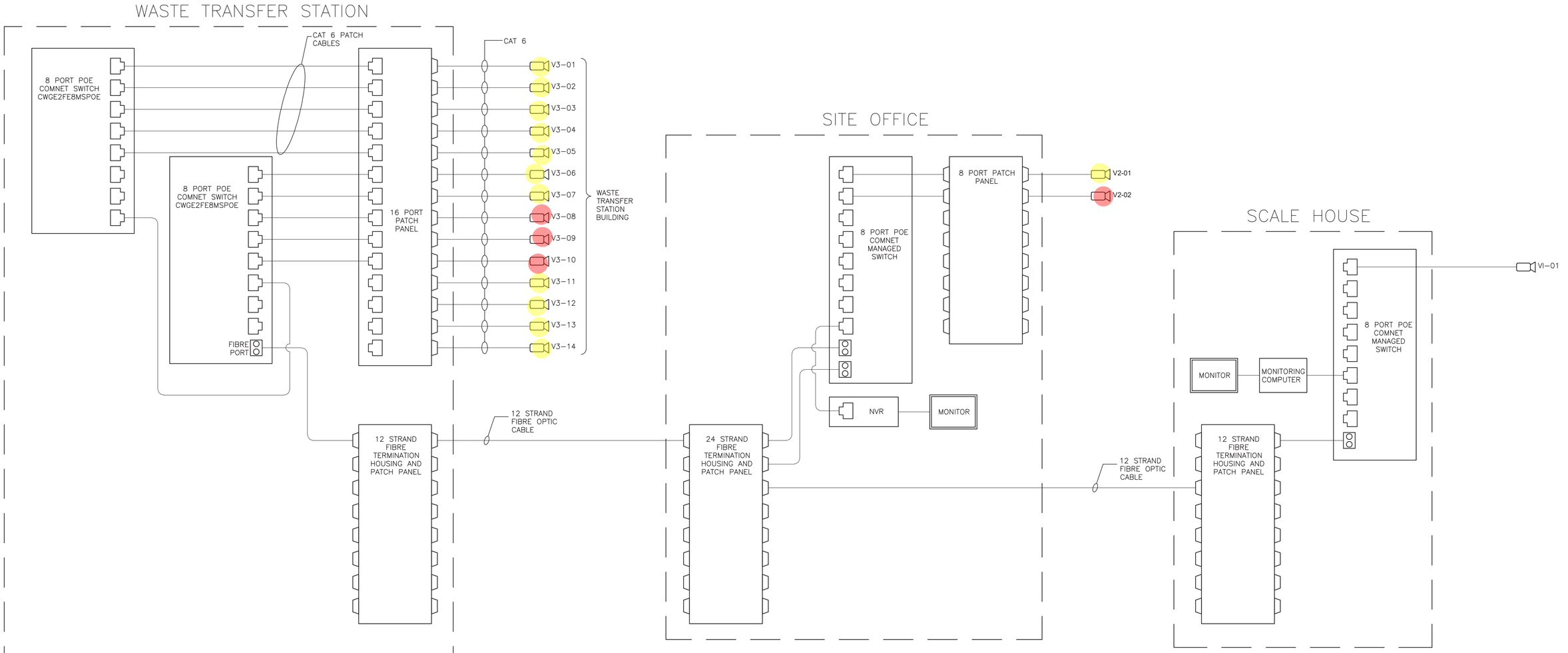
DC SD NO. 004

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE Feb 17, 2023

DILLON CONSULTING



ONE LINE DIAGRAM FOR VIDEO CAMERAS

SCALE: N.T.S.

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER P 010
DILLON CONSULTING LIMITED
2022-07-06

REGISTERED PROFESSIONAL ENGINEER — JULY 6, 2022 — B.L. MOORE — LICENSEE #L1372 — NWT/NU

NOT FOR CONSTRUCTION

Iqaluit

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
9	RELEASED FOR TENDER	2022/07/06	K.B.
8	ADDITIONAL REVIEW	2022/05/18	K.B.
7	TENDER	2022/04/14	K.B.
6	REVIEW	2021/09/24	K.B.
5	REVIEW	2021/06/25	K.B.
4	100% ISSUED FOR APPROVAL	2020/10/30	K.B.
3	90% REVIEW	2020/01/24	K.B.
2	50% REVIEW	2019/10/23	K.B.
1	30% REVIEW	2019/06/04	K.B.

DESIGN: BLM | REVIEWED BY: BLM
DRAWN: SCK | CHECKED BY: KB
DATE: JULY 2022
SCALE: SINGLE LINE DIAGRAM

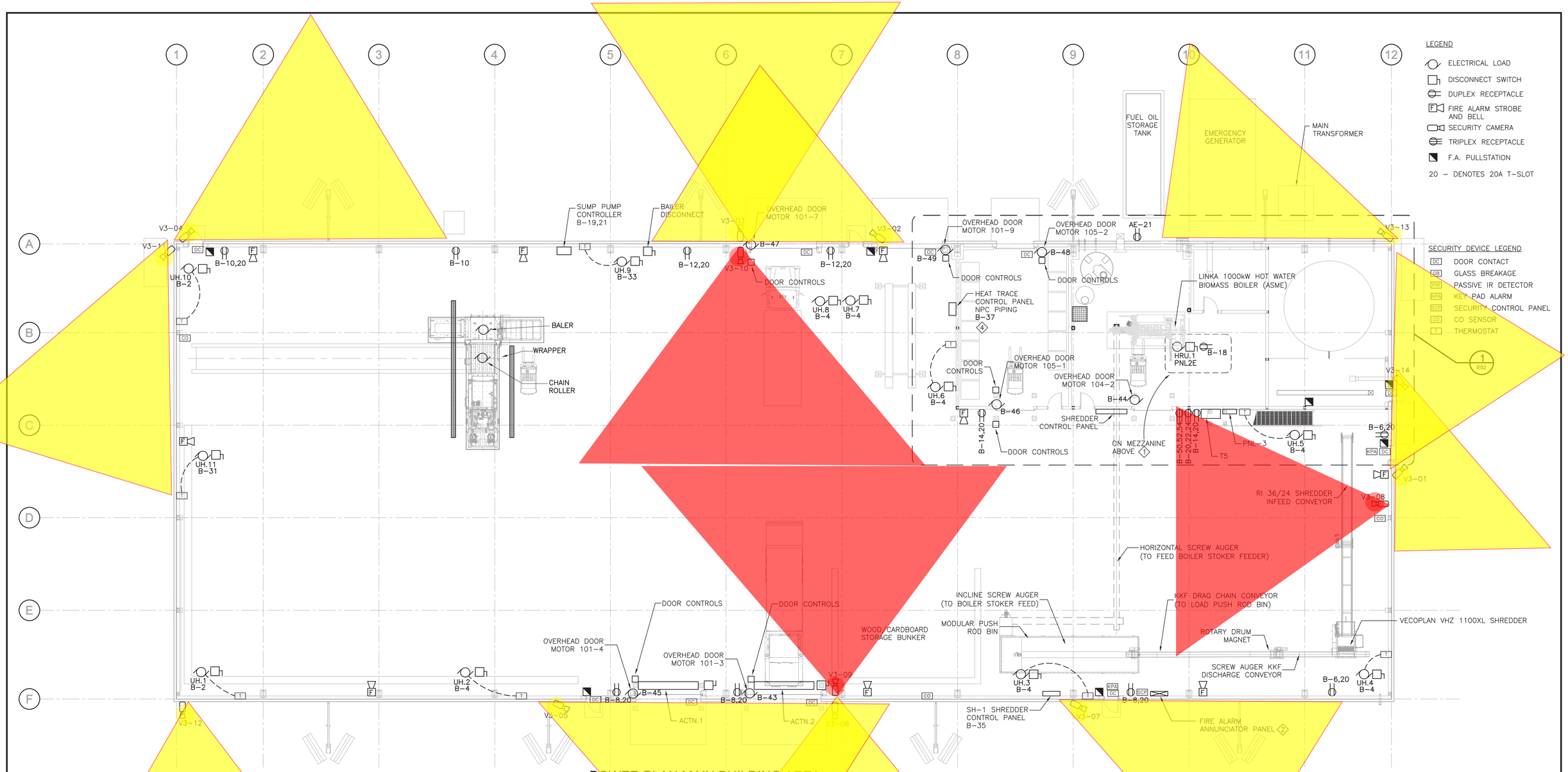
CITY OF IQALUIT
WASTE TRANSFER STATION

SECURITY CAMERA SYSTEM

PROJECT NO. 19-9543

SHEET NO. WTS-E07

FILENAME: C:\PW\WORKING DIRECTORY\PROJECTS\191904\ACAD\VIZIER\19904-04-E-ELEC.DWG PLOTTED BY: KIM, SUNHO
PLOT DATE: 2022-07-06 @ 11:02:51 PM PLOT SCALE: 224.0174 PLOT STYLE: DILLON-STANDARD.STB



POWER PLAN MAIN BUILDING AREA

1:125

CONSTRUCTION NOTES

1. HRU–1 IS LOCATED ON THE MEZZANINE. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION. PROVIDE 20A T–SLOT RECEPTACLE IN CLOSE PROXIMITY.
2. CONFIRM FIRE FIGHTER ENTRANCE WITH LOCAL FIRE DEPARTMENT.
3. PROVIDE POWER FOR CO AND NOX DETECTION FOR PLANT FLOOR. REFER TO MECHANICAL DRAWINGS FOR GAS DETECTION SYSTEM AND COORDINATE WITH MECHANICAL CONTRACTOR. MONITOR WITH FIRE ALARM SYSTEM TO PROVIDE A TROUBLE SIGNAL ON CO OR NOX DETECTION.
4. PROVIDE HEAT TRACE CABLE, WIRING, CONNECTION KITS, END SEALS, AMBIENT TEMPERATURE CONTROLLER AND ALL REQUIRED ACCESSORIES FOR A COMPLETE ELECTRIC HEAT TRACE SYSTEM. PROVIDE DESIGN FROM LOCAL REPRESENTATIVE OR FACTORY FOR REVIEW.

GENERAL NOTES

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. PROVIDE LOCAL DISCONNECTS FOR ALL MECHANICAL EQUIPMENT.
2. COORDINATE PROCESS EQUIPMENT INSTALLATION LOCATION WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. PROVIDE ALL ELECTRICAL CONNECTIONS, BREAKERS, WIRING AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH EQUIPMENT SUPPLIERS FOR ALL REQUIRED INFORMATION.
3. COORDINATE THE INSTALLATION OF THE MAIN TRANSFORMER WITH THE POWER SUPPLY AUTHORITY.
4. COORDINATE THE INSTALLATION OF THE GENERATOR WITH THE FUEL TANK AND MAIN TRANSFORMER LOCATIONS.
5. SEE STRUCTURAL DRAWINGS FOR HOUSEKEEPING PAD REQUIREMENTS.

Conditions of Use

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2022-07-06

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6	REVIEW	2021/09/24	K.B.
5	REVIEW	2021/06/25	K.B.
4	100% ISSUED FOR APPROVAL	2020/10/30	K.B.
3	90% REVIEW	2020/01/24	K.B.
2	50% REVIEW	2019/10/23	K.B.
1	30% REVIEW	2019/06/04	K.B.

DESIGN BLM | REVIEWED BY BLM
DRAWN SCK | CHECKED BY KB
DATE JULY 2022
SCALE NOTED

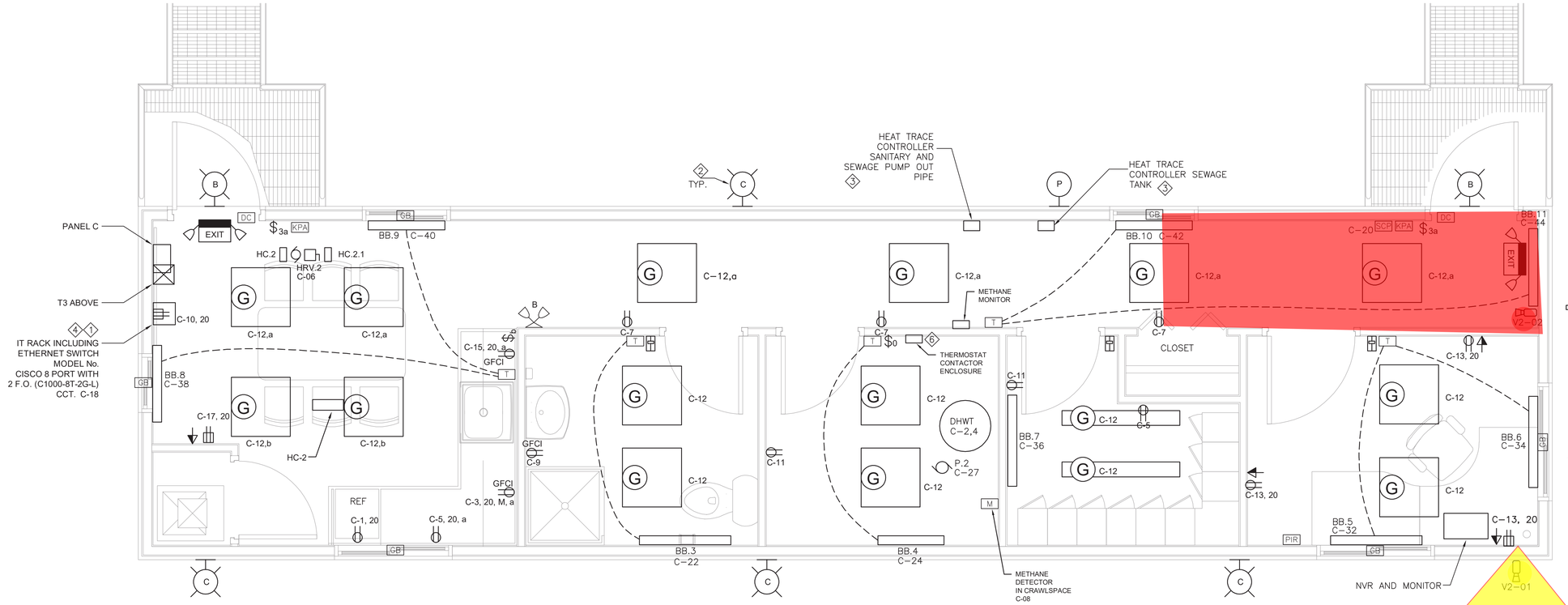
CITY OF IQALUIT
WASTE TRANSFER STATION

PROJECT NO. 19-9543

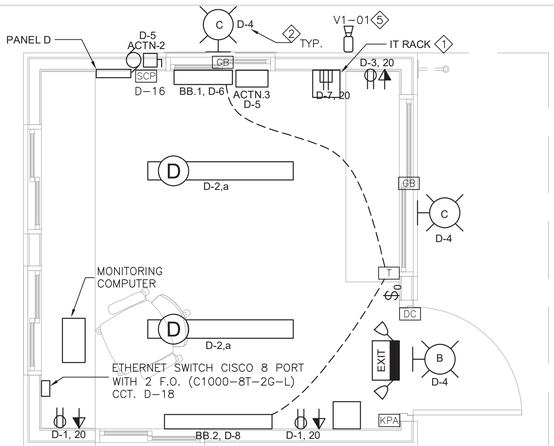
POWER PLAN MAIN BUILDING AREA

SHEET NO. WTS-E01

FILENAME: C:\PW WORKING DIRECTORY\PROJECTS 2019\405KX\DMS\127281\195433-04-ELEC\DES.DWG PLOTTED BY: KIM, SUNHO
PLOT DATE: 2022-07-04 @ 10:55:27 PM PLOT SCALE: 1:125.0107 PLOT STYLE: DILLON-STANDARD.CTB



SITE OFFICE PLAN
1:25



SCALE HOUSE PLAN
1:25

LEGEND

- PHOTO CELL
- DUPLEX RECEPTACLE
- QUAD RECEPTACLE
- VOICE/DATA RECEPTACLE
- 2 X 2 LUMINAIRE
- STRIP LUMINAIRE
- SWITCH
- OCCUPANCY SENSOR SWITCH
- LOCAL DISCONNECT
- COMBO EXIT SIGN
- REMOTE DUAL EMERGENCY LAMP
- EXTERIOR LUMINAIRE
- CCTV CAMERA
- ELECTRICAL LOAD
- METHANE DETECTOR

SUBSCRIPT LEGEND

R – DENOTES REFRIDGERATION

M – DENOTES MICROWAVE

20 – DENOTES 20A T–SLOT

a – DENOTES ABOVE COUNTER

NOTES

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. PROVIDE LOCAL DISCONNECTS FOR ALL MECHANICAL EQUIPMENT.
2. COORDINATE TRENCHING FOR POWER CABLE AND FIBRE OPTIC CABLE WITH ALL SITE SERVICES AND INSTALLATION OF THE SCALE.

CONSTRUCTION NOTES

1. PROVIDE A WALL MOUNT RACK WITH ENCLOSURE AND LOCKABLE DOOR. PROVIDE 12C PATCH PANEL FOR FIBRE OPTIC CABLE. PROVIDE 24 CCT CAT 6 PATCH PANEL FOR STRUCTURED CABLE. ROUTE ALL STRUCTURED CABLE AND TERMINATE TO PATCH PANEL
2. PROVIDE PHOTOCELL CONTROL FOR ALL EXTERIOR LIGHTING.
3. PROVIDE HEAT TRACE CABLE, WIRING, CONNECTION KITS, END SEALS, AMBIENT TEMPERATURE CONTROLLER AND ALL REQUIRED ACCESSORIES FOR A COMPETE ELECTRIC HEAT TRACE SYSTEM. PROVIDE DESIGN FROM LOCAL REPRESENTATIVE OR FACTORY FOR REVIEW.
4. PROVIDE HEAD END AND DVR FOR CCTV SERVICE SYSTEM. PROVIDE POE CAMERAS AND SWITCHES FOR A COMPLETE SYSTEM.
5. SCALE HOUSE CAMERA TO BE MOUNTED ON POLE AT 4m ABOVE GROUND LEVEL.
6. PROVIDE CONTACTOR WITH ENCLOSURE FOR CONNECTION OF ONE THERMOSTAT TO MULTIPLE BASEBOARD HEATERS.

DISTRIBUTION PANEL 'PNL-C'

CCT NO	DESCRIPTION	LOAD	TRIP AMPS	N ABC	TRIP AMPS	LOAD	DESCRIPTION	CCT NO
01	RECEPTACLE LUNCHROOM	600	20A		25A	3000	DHWT	02
03	RECEPTACLE LUNCHROOM MICROWAVE	600	20A		2P			04
05	RECEPTACLE LUNCHROOM	600	20A		15	200	HRV.2	06
07	RECEPTACLE HALLWAY	600	15A		15		METHANE DETECTOR	08
09	RECEPTACLE BATHROOM	600	15A		20A	600	RECEPTACLE IT RACK	10
11	RECEPTACLE LOCKER ROOM	600	15A		20A	600	INTERIOR LTG	12
13	RECEPTACLE OFFICE	600	20A		20A	350	EXTERIOR LTG	14
15	RECEPTACLE LUNCHROOM	600	20A		15A	50	EXIT SIGNS	16
17	RECEPTACLE LUNCHROOM	600	20A		15A		ETHERNET SWITCH	18
19	HEAT TRACE SANITARY	2000	20A		15A		SECURITY CONTROL PANEL	20
21	GFCI		2P		15A	600	BASEBOARD HEATER BB.3	22
23	HEAT TRACE TANK	2000	20A		15A	600	BASEBOARD HEATER BB.4	24
25	GFCI		2P					26
27	PUMP P.2	600	20A		100A		PANEL - D	28
29	SECURITY CAMERAS		15A		3P			30
31					15	1000	BASEBOARD HEATER BB.5	32
33	HC.2	6500	25A		15	1000	BASEBOARD HEATER BB.6	34
35			3P		15	600	BASEBOARD HEATER BB.7	36
37					15	1200	BASEBOARD HEATER BB.8	38
39	HC.2.1	6500	25A		15	500	BASEBOARD HEATER BB.9	40
41			3P		15	500	BASEBOARD HEATER BB.10	42
43	SPACE				15	500	BASEBOARD HEATER BB.11	44
45	SPACE						SPACE	46
47	SPACE						SPACE	48
49	SPACE						SPACE	50
51	SPACE						SPACE	52
53	SPACE						SPACE	54
55	SPACE						SPACE	56
57	SPACE						SPACE	58
59	SPACE						SPACE	60

VOLTAGE: 120/208 PHASE: 3 WIRE: 4 BREAKER I.C.: 10 kAIC

MAIN BREAKER: 150A MAINS: 225A FEEDER: -

MOUNTING: FLUSH LOCATION: SITE OFFICE

FED FROM: T3/PNL-1

NOTES:

DISTRIBUTION PANEL 'PNL-D'

CCT NO	DESCRIPTION	LOAD	TRIP AMPS	N ABC	TRIP AMPS	LOAD	DESCRIPTION	CCT NO
01	RECEPTACLE	600	20A		15A	104	INTERIOR LT6G	02
03	RECEPTACLE	600	20A		15A	350	EXTERIOR LTG	04
05	ACTN.3	100	15A		15A	900	BASEBOARD HEATER BB.1	06
07	RECEPTACLE FOR IT RACK	600	15		15A	900	BASEBOARD HEATER BB.2	08
09	WEIGH SCALE DIGITIZER		15A		15A	50	EXIT SIGN	10
11	TRAFFIC SIGNALS		15A		15A		SCALE HOUSE SITE LIGHTING	12
13	RADIATION DETECTORS		15A		15A		SCALE HOUSE SITE LIGHTING	14
15	SPARE		15A		15A		SECURITY CONTROL PANEL	16
17	SPARE		15A		15A		ETHERNET SWITCH	18
19	SPARE		20A		15A		RECEPTACLE	20
21	SPARE		20A		15A		SPARE	22
23	SPARE		20A		15A		SPARE	24
25	SPARE		20A		15A		SPARE	26
27	SPARE		20A		15A		SPARE	28
29	SPARE		20A		15A		SPARE	30

VOLTAGE: 120/208 PHASE: 3 WIRE: 4 BREAKER I.C.: 10 kAIC

MAIN BREAKER: 100A MAINS: 100A FEEDER: -

MOUNTING: FLUSH LOCATION: SCALE HOUSE

FED FROM: PNL-C

NOTES:

Conditions of Use

Verify elevations and/or dimensions on drawing prior to use. Report any discrepancies to Dillon Consulting Limited.

Do not scale dimensions from drawing.

Do not modify drawing, re-use it, or use it for purposes other than those intended at the time of its preparation without prior written permission from Dillon Consulting Limited.

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF THE NORTHWEST TERRITORIES
PERMIT NUMBER P 010
DILLON CONSULTING LIMITED
2022-07-06

REGISTERED PROFESSIONAL ENGINEER
JULY 6, 2022
B.L. MOORE
LICENSEE #L1372
NWT/NU

NOT FOR CONSTRUCTION

Iqaluit

DILLON CONSULTING

No.	ISSUED FOR	DATE	BY
9	RELEASED FOR TENDER	2022/07/06	K.B.
8	ADDITIONAL REVIEW	2022/05/18	K.B.
7	TENDER	2022/04/14	K.B.
6	REVIEW	2021/09/24	K.B.
5	REVIEW	2021/06/25	K.B.
4	100% ISSUED FOR APPROVAL	2020/10/30	K.B.
3	90% REVIEW	2020/01/24	K.B.
2	50% REVIEW	2019/10/23	K.B.
1	30% REVIEW	2019/06/04	K.B.

DESIGN BLM | REVIEWED BY BLM
DRAWN SCK | CHECKED BY KB
DATE JULY 2022
SCALE AS NOTED

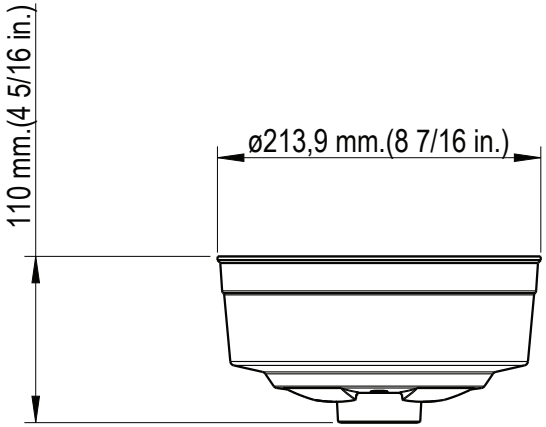
CITY OF IQALUIT
WASTE TRANSFER STATION

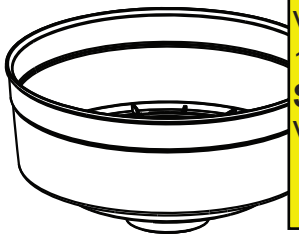
ELECTRICAL PLAN
SITE OFFICE AND SCALE HOUSE

PROJECT NO. 19-9543

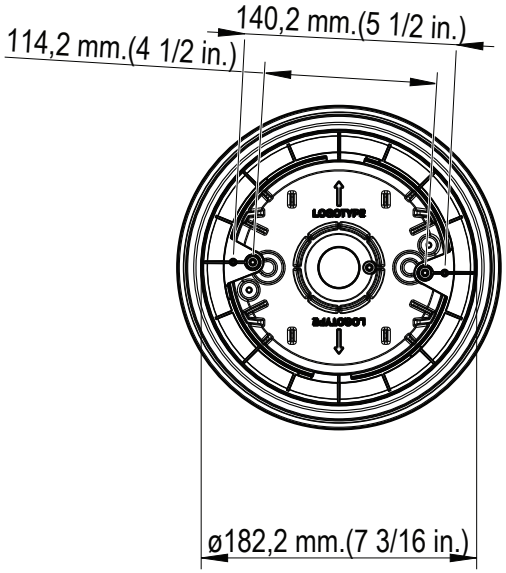
SHEET NO. WTS-E06

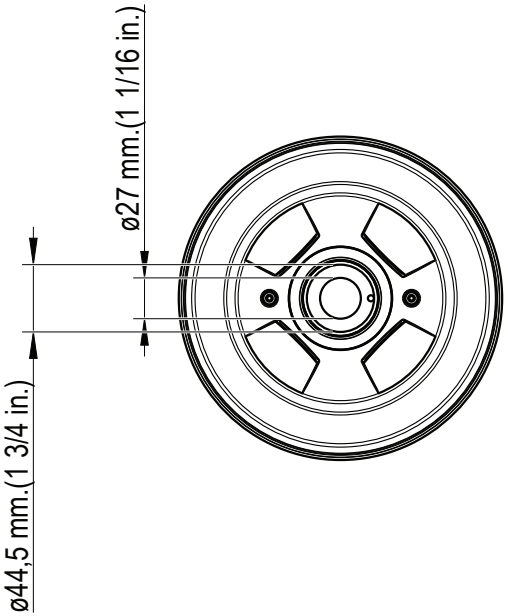
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PLOT DATE: 2022-07-04 @ 11:02:29 PM PLOT SCALE: 1:25.4 PLOT STYLE: DILLON STANDARD.CTB





AXIS T94M01D Pendant Kit for outdoor cameras Q3536-LVE
Quantity : 12
PowerPlan - Main Building :
V3-04,V3-11,V3-03,V3-02,V3-13,V3-14,V3-01,V3-07,V3-06,V3-05,V3-12,
Site Office :
V2-01





AXIS T94M01D Pendant Kit

17 JUNE, 2015 Scale 1:5

AXIS COMMUNICATIONS

SPEC SHEET

WBOX TECHNOLOGIES

ECO ENERGY EFFICIENT LED COLOR MONITOR

24/7/365 Operating Capability

0E-24EVGHDMI



WBOX 24EVGHDMI Monitor
Quantity : 2

Primary Monitor located in Site Office for NVR

Second Monitor located in Scale House for monitoring computer

This professional grade widescreen LED 23.8” color monitor offers HDMI, VGA inputs. Boasting 16.7 million colors & FHD Resolution this monitor will make your video come to life.

- 23.8” Diagonal Viewing Size
- 1920 x 1080P Full HD Resolut
- VGA & HDMI Input
- IPS Technology, 178° Viewing Angle
- Anti Pixel Burn-in Technology
- Flicker-free Technology
- Low Blue Light Technology
- Includes VGA, HDMI & Power Cables
- Warranty: 30 Months

PART #: 0E-24EVGHDMI

UPC : 811914020059

LENGTH :21.3”

WIDTH : 7.4”

HEIGHT : 16.2”

WEIGHT : 6.9 lbs

UL LISTING

RoHS c UL us E505978 LISTED FC CE WBOX TECHNOLOGIES

FOR MORE INFORMATION, CONTACT YOUR ADI SALES PERSON.

SPEC SHEET

Model	0E-24EVGHDMI
Screen Diagonal Dimension (inches)	23.8
Viewable Area WxH (inches)(mm)	20.74x11.67(527.04×296.46)
Led Type	LED
Pixel Pitch (mm)	0.2745×0.2745
Screen Maximum Resolution	1920x1080
Display Resolutions	720x400;640x480;800x600;1024x768;1280x1024;1366x768;1920x1080
Supported Input Resolutions	720x400;640x480;800x600;1024x768;1280x1024;1366x768;1920x1080
Refresh Rate (Hz)	60
Color Depth (million)	16.7
Brightness (cd/m^2)	250
Auto Adjust	Yes
Monitor Aspect Ratio	16:9
Display Aspect Ratio	OSD options: Full/4:3/Over Scan
Horizontal TV Lines	1080
Contrast Ratio	1000:1 SCR
Response Time (ms)	8 (GTG)
View Angle H/V (degrees)	178°x 178°/CR＞10
Digital Video Inputs	HDMI up to 1920 x 1080
Analog Video In/Out	VGA up to 1920 x 1080
Audio Inputs (stereo)	1x3.5mm mini-jack
Speakers (W)	2x2
Stand-by (W)	＜0.5
Power Consumption	20W Typical
Monitor Body Dimensions (inches)	21.3”x12.6”x1.7”(541.4×321.8×43.8mm)
Dimensions Monitor+Stand(inches)	21.3”x16.1”x7.5”(541.4×409×190mm)
Panel Surface	Matte black
Case & Stand Material	Plastic
VESA Mounting Pattern (mm)	100 x 100
Base/Stand Included	Yes
BaseTilt Angle	-5°~15°
Weight Cabinet Only (lb.)	6.9lbs(3.15 Kg)
Weight Cabinet+Base Stand (lb.)	7.7lbs(3.5 Kg)
Power Supply (internal)	AC 100-240V~50/60Hz 1.1A
Operating Temperature	0°C~40°C / 32° F~104° F
Storage Temperature	-20°C~50°C / -4° F~122° F
Operating Humidity	10~90%
Accessories	Power cable/VGA cable/HDMI cable/screws/stand/user manual
Rack Mount Screw Size (mm)	Screw for Mounting Monitor, Screws Type: M4-L8 mm/4pcs
Certifications	CE/FCC/ROHS/HDMI/UL/WEEE/REACH
Warranty	30 Months

FOR MORE INFORMATION,
CONTACT YOUR ADI SALES PERSON.

-GENESIS-

Riser Rated Networking/Ethernet Cable
Part Number: 6360

4 Unshielded Twisted Pair (UTP) Category 6

Ratings CMR, FT4, Sunlight Resistant
Approvals UL Listed, ETL Verified

Construction

Conductor Type	23 AWG Solid Bare Copper
Conductor Count	8 (4 pairs)
Insulation	Polyethylene
Spacer	No
Shielding	N/A
Rip Cord	Yes
Jacket Material	PVC
Overall Outer Diameter	0.205" nom.
Print Legend	GENESIS P/N 6360 4PR23 CAT 6 E175104-1 (UL) CMR C(UL)US FT4 SUN RES 75C (RoHS) ETL VERIFIED TO TIA-568-C.2 CAT 6 XXXXXXXX YYYY FT RM# A B C D E F 1 2 3 4 5 6 7 8 9

Color Code	Pair
Blue & White/Blue	1
Orange & White/Orange	2
Green & Green/White	3
Brown & Brown/White	4

Electrical & Environmental

Temperature	-20°C to 75°C
Operating Voltage	300V max.
RoHS Compliant	Yes
Velocity of Propagation	69% nominal
DC Resistance	9.38 Ohms/100m max. @ 20°C
Resistance Unbalance	5% max. @ 20°C
Capacitance	5.6 nF/100m max. @ 20°C
Capacitance Unbalance	330 pF/100m max. @ 20°C
Propagation Delay	570 ns/100m max. @ 20°C
Delay Skew	45 ns/100m max. @ 20°C

Frequency (MHz)	Insertion Loss Maximum (dB/100m)	NEXT Minimum (dB/100m)	PSNEXT Minimum (dB/100m)	Return Loss Minimum (dB/100m)
1	2.0	74.3	72.3	20.0
4	3.8	65.3	63.3	23.0
8	5.3	60.8	58.8	24.5
10	6.0	59.3	57.3	25.0
16	7.6	56.2	54.2	25.0
20	8.5	54.8	52.8	25.0
25	9.5	53.3	51.3	24.3
31.25	10.7	51.9	49.9	23.6
62.5	15.4	47.4	45.4	21.5
100	19.8	44.3	42.3	20.1
155	25.2	41.4	39.4	18.8
200	29.0	39.8	37.8	18.0
250	32.8	38.3	36.3	17.3
300	36.4	37.1	35.1	16.8
350	39.8	36.1	34.1	16.3
400	43.0	35.3	33.3	15.9

ETL Verified to TIA/EIA-568-C.2 Cat 6. Sweep tested to 400 MHz

Country of Origin Vietnam

Published: 2018-10-19 DDD

comnet Communication Networks

Commercial Grade Managed Ethernet Switch: (8) 10/100TX Power Over Ethernet (PoE+) Ports + (2) 10/100/1000TX or 1000FX SFP Ports

CWGE2FE8MSPOE+

ValueLine
Performance and Value



INCLUDED



FLEXIBILITY



IEEE802.3at



2



8



The ComNet CWGE2FE8MSPOE+ commercial grade managed Ethernet switch provides eight ports of 10/100 BASE-TX PoE+ and two ports of 10/100/1000TX or 1000FX transmission. These units are available for use with either conventional CAT-5e copper or optical transmission media. The eight electrical ports support the 10/100 Mbps Ethernet IEEE 802.3 protocol, and auto-negotiating and auto-MDI/MDIX features are provided for simplicity and ease of installation. All eight ports support IEEE.802.3at based PoE+. Two ports are 10/100/1000 configurable for copper or fiber media for use with multimode or single mode optical fiber, selected by optional SFP modules. These network managed layer 2 switches are optically (1000 BASE-FX) and electrically compatible with any IEEE 802.3 compliant Ethernet devices.

FEATURES

› Commercial Grade
› Ambient operating temperature range: 0˚ C to +50˚ C
› 10/100 BASE-TX compatible PoE+ ports
› Flexible optics configuration via SFP plug-in modules
› Fully configurable through SNMP or web-based network management
› IGMP Snooping V1/V2 for multicast filtering
› Port based VLAN (IEEE 802.1Q)
› Rapid Spanning Tree protocol (IEEE 802.1W)
› Port Based Security
› Power Supply Included
› LED status indicators confirm operating status
› The switch can be mounted within any standard 19-inch equipment rack using the included Rack Mount Bracket Adaptor Kit
› Five Year Warranty

APPLICATIONS

› Industrial and Factory Automation
› Integrated IP-Video and Data Transmission Networks
› Industrial Security Access Control Systems

** Small Form-Factor Pluggable Module. Sold separately.*

CWGE2FE8MSPOE+

Commercial Grade Managed Ethernet Switch: (8) 10/100TX Power Over Ethernet (PoE+) Ports + (2) 10/100/1000TX or 1000FX SFP Ports

SPECIFICATIONS

Software

Configuration	SNMP v1/v2c, Web
VLAN	IEEE 802.1Q (32 Max), Port based VLAN (26 Max)
Redundancy	IEEE802.1d STP, IEEE802.1w RSTP, and Loopback detection
Security	MAC address binding port security, DHCP Relay, TCP/UDP filters
Traffic Control	IGMP Snooping V1/V2 for multicast group management, Bandwidth Control, Broadcast Storm Control, Port trunk, QoS priority queuing / CoS, LACP port trunk, IEEE 802.3x flow control
Diagnostics	Port Mirroring, Real-time traffic statistic, MAC Address Table
PoE Management	PoE Enable/Disable, Power limit by classification, Power limit by management, Power feeding priority, Power On Delay Timer, Power Scheduling

Switch Properties

Switch Architecture	Back-plane: 5.6 Gbps
Packet Buffer	2.75 Mb
MAC Address	4K

Connectors

10/100TX	8 × RJ-45
Gigabit Combo	2 × 10/100/1000TX RJ45 2 × 1000FX SFP[1]

Power

Power consumption	260 W (with full PoE Load) 20 W (with no PoE)
Operating Power	110/240 VAC with internal power supply unit.
Max Power Per PoE Port	30 W max
Total PoE Power Budget	240 W max

PoE pin assignment

RJ45 port #1 - #8 support IEEE802.3at End-point, Alternative A mode.
Positive (VCC+): RJ45 pin 1, 2
Negative (VCC-): RJ45 pin 3, 6

Mechanical

Indicating LEDs	System: Power, PoE, System Per port: Link/Activity, Speed Gigabit Combo port: Link/Activity
Dimensions (L × W × H)	13.0 × 9.1 × 1.7 in (33.0 × 23.0 × 4.3 cm)
Cooling	Fan Assisted Cooling

Environment

MTBF	>100,000 hours
Operating Temperature	0° to +50°C
Storage Temperature	-40° to +70°C
Relative Humidity	0 to 95% (non-condensing)

Ethernet Standards

IEEE 802.3 10Base-T Ethernet
IEEE 802.3u 100Base-TX/100Base-FX
IEEE 802.3z Gigabit fiber
IEEE 802.3ab 1000Base-T
IEEE 802.3x Flow Control and Back Pressure
IEEE 802.3ad Port trunk with LACP
IEEE 802.1d Spanning Tree
IEEE 802.1q VLAN Tag
IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol)
IEEE 802.3at Power over Ethernet

Regulatory Compliance

EMC	CE, FCC Class A, EN55022, EN60950-1



ORDERING INFORMATION

Part Number	Description
CWGE2FE8MSPOE+	Commercial Grade Managed Ethernet Switch with (8) 10/100TX PoE+ + (2) 10/100/1000TX RJ45 or 1000FX SFP Ports
Options	User selection of ComNet SFP (Extra charge, see SFP Modules data sheet for product numbers and compatibility before ordering)

[1] Multimode fiber needs to meet or exceed fiber standard ITU-T G.651. Single mode fiber needs to meet or exceed fiber standard ITU-T G.652.
Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J
In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

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8 TURNBERRY PARK ROAD | GILDERSOME | MORLEY | LEEDS, UK LS27 7LE | T: +44 (0)113 307 6400 | F: +44 (0)113 253 7462 | INFO-EUROPE@COMNET.NET
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AXIS P3265-V DOME CAMERA
Quantity : 4
Indoor
PowerPlan - Main Building :
V3-09, V3-08,V3-10
Site Office :
V2-02

AXIS P3265-V Dome Camera

Indoor 2 MP dome with deep learning

Featuring Lightfinder 2.0 and Forensic WDR, AXIS P3265-V delivers excelle conditions. Based on the latest Axis system-on-chip (SoC), it includes a deep l features and powerful analytics based on deep learning on the edge. Thanks to AXIS Object Analytics, it offers detection and classification of humans, vehicles, and types of vehicles—all tailored to your specific needs. Featuring audio and I/O connectivity, you can integrate equipment and extend the value of your system. Furthermore, this robust, IK10-rated camera includes built-in cybersecurity to help prevent unauthorized access and safeguard your system.

- > Excellent image quality in 2 MP
- > Lightfinder 2.0, Forensic WDR
- > Analytics with deep learning
- > Built-in cybersecurity features
- > Audio and I/O connectivity



AXIS P3265-V Dome Camera

Camera

Image sensor	1/2.8" progressive scan RGB CMOS
Lens	Varifocal, 3.4–8.9 mm, F1.8 Horizontal field of view: 100°-36° Vertical field of view: 53°-20° Minimum focus distance: 50 cm (20 in) IR corrected, remote zoom and focus, P-Iris control
Day and night	Automatically removable infrared-cut filter
Minimum illumination	**With Forensic WDR and Lightfinder 2.0:** **Color:** 0.1 lux at 50 IRE, F1.8 **B/W:** 0.02 lux at 50 IRE, F1.8
Shutter speed	1/66500 s to 2 s
Camera angle adjustment	Pan ±180°, tilt ±75°, rotation ±175°

System on chip (SoC)

Model	ARTPEC-8
Memory	1024 MB RAM, 8192 MB Flash
Compute capabilities	Deep learning processing unit (DLPU)

Video

Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main, and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
Resolution	1920x1080 to 160x90
Frame rate	**With WDR**: 25/30 fps with power line frequency 50/60 Hz **Without WDR**: 50/60 fps with power line frequency 50/60 Hz
Video streaming	Multiple, individually configurable streams in H.264, H.265, and Motion JPEG Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265 Low latency mode Video streaming indicator
Multi-view streaming	Up to 2 individually cropped out view areas in full frame rate
Image settings	Saturation, contrast, brightness, sharpness, Forensic WDR: up to 120 dB depending on scene, white balance, day/night threshold, local contrast, tone mapping, exposure mode, exposure zones, defogging, barrel distortion correction, compression, rotation: 0°, 90°, 180°, 270° including Corridor Format, mirroring, dynamic text and image overlay, privacy masks, polygon privacy mask
Pan/Tilt/Zoom	Digital PTZ, preset positions

Audio

Audio streaming	Two-way, full duplex
Audio encoding	24bit LPCM, AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz Configurable bit rate
Audio input/output	External microphone input, line input, digital input with ring power, line output, automatic gain control

Network

Security	IP address filtering, HTTPS[a] encryption, IEEE 802.1x (EAP-TLS)[a] network access control, user access log, centralized certificate management
Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[a], HTTP/2, TLS[a], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTCP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, DHCPv4/v6, ARP, SSH, SIP, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf)

System integration

Application Programming Interface	Open API for software integration, including VAPIX® and AXIS Camera Application Platform; specifications at *axis.com* One-click cloud connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specification at *onvif.org*
	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX.
Onscreen controls	Day/night shift Defogging Wide dynamic range Video streaming indicator
Event conditions	Analytics, external input, supervised external input, virtual inputs through API Audio: audio clip playing, audio clip currently playing Call: state, state change Device status: above operating temperature, above or below operating temperature, below operating temperature, within operating temperature, IP address removed, new IP address, network lost, system ready, ring power overcurrent protection, live stream active Digital audio: digital signal contains Axis metadata, digital signal has invalid sample rate, digital signal missing, digital signal okay Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input, manual trigger, virtual input MQTT: subcribe Scheduled and recurring: schedule Video: average bitrate degradation, day-night mode, live stream open, tampering
Event actions	Overlay text, external output activation, play audio clip, zoom preset, day/night mode, flash status LED, use lights, set defog mode, set WDR mode Calls: end SIP call, make SIP call, answer call I/O: toggle I/O once, toggle I/O while the rule is active MQTT: publish Notification: email, HTTP, HTTPS, TCP, and SNMP trap Pre- and post-alarm video or image buffering for recording or upload Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share, and email
Built-in installation aids	Remote zoom and focus, straighten image, pixel counter, level grid

Analytics

AXIS Object Analytics	**Object classes**: humans, vehicles (types: cars, buses, trucks, bikes) **Trigger conditions**: line crossing, object in area, time in area[BETA] Up to 10 scenarios Metadata visualized with trajectories and color-coded bounding boxes Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Metadata	**Object data**: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position **Event data**: Producer reference, scenarios, trigger conditions
Applications	**Included** AXIS Object Analytics AXIS Video Motion Detection, active tampering alarm, audio detection Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication, password protection, AES-XTS-Plain64 256bit SD card encryption **Hardware:** Secure boot **Hardware:** Secure boot, Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+ certified hardware protection of cryptographic operations and keys)
Network security	IEEE 802.1X (EAP-TLS)[a], IEEE 802.1AR, HTTPS/HSTS[a], TLS v1.2/v1.3[a], Network Time Security (NTS), X.509 Certificate PKI, IP address filtering
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model*

	To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*
General	
Casing	IP52- and IK10-rated Polycarbonate hard coated dome Polycarbonate casing Color: white NCS S 1002-B For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
Mounting	Mounting bracket with junction box holes (double-gang, single-gang, and 4" octagon) and for wall or ceiling mount ¼"-20 UNC tripod screw thread
Sustainability	PVC free, BFR/CFR free, 26.6% recycled plastics
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 2 Typical 3 W, max 5.1 W
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O: 4-pin 2.5 mm (0.098 in) terminal block for 1 supervised digital input and 1 digital output (12 V DC output, max. load 25 mA) Audio: 4-pin 2.5 mm (0.098 in) terminal block for audio in and out
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	0 °C to 50 °C (32 °F to 122 °F) Humidity 10–85% RH (non-condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5–95% RH (non-condensing)
Approvals	**EMC** EN 50121-4, EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A, ICES-3(A)/NMB-3(A), IEC 62236-4, KC KN32 Class A, KC KN35, RCM AS/NZS CISPR 32 Class A, VCCI Class A **Safety** CAN/CSA C22.2 No. 62368-1, IEC/EN/UL 62368-1, IS 13252 **Environment** IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78 IEC/EN 60529 IP52, IEC/EN 62262 IK10 **Network** NIST SP500-267
Dimensions	Height: 103 mm (4.06 in) ø 149 mm (5.87 in)
Weight	650 g (1.4 lb)
Included accessories	Installation guide, Windows® decoder 1-user license, drill template, RESISTORX® T20 L-key, terminal block connectors, cable gaskets, connector guard
Optional accessories	AXIS TP3201 Recessed Mount, AXIS TP3202 Recessed Mount, AXIS T94K01D Pendant Kit, AXIS Dome Intrusion Switch C, AXIS T8355 Digital Microphone 3.5 mm, AXIS TP3901 Microphone Kit, AXIS ACI Conduit Adapters, smoked dome, black casing For more accessories, see *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis Application Development Partners available at *axis.com/vms*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese
Warranty	5-year warranty, see *axis.com/warranty*

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Environmental responsibility:

axis.com/environmental-responsibility

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AXIS Q3536-LVE - DOME CAMERA
Quantity : 12
Outdoor
PowerPlan - Main Building :
V3-04,V3-11,V3-03,V3-02,V3-13,V3-14,V3-01,V3-07,V3-06,V3-05,V3-12,
Site Office :
V2-01

AXIS Q3536-LVE Dome Camera

Advanced 4 MP dome with deep learning

With 4 MP resolution, Lightfinder 2.0, Forensic WDR, and OptimizedIR, AX quality even in the harshest weather and environments. The IR-shielded do sistently clear, sharp video. Built on ARTPEC-8, it offers advanced features learning. For instance, AXIS Object Analytics comes preinstalled offering high in a metal casing, this robust camera features redundant power, sensors for intrusion and shock detection, and built-in cybersecurity features such as Axis Edge Vault and a FIPS 140-2 level 2 certified Trusted Platform Module (TPM).

- > Outstanding image quality in 4 MP
- > Analytics with deep learning
- > Available with wide or tele lens
- > IR-shielded dome to prevent reflections
- > Metal casing and built-in cybersecurity features





AXIS Q3536-LVE Dome Camera

Models	AXIS Q3536-LVE 9 mm AXIS Q3536-LVE 29 mm

Camera

Image sensor	1/1.8" progressive scan RGB CMOS
Lens	**AXIS Q3536-LVE 9 mm:** Varifocal, 4.3–8.6 mm, F1.5–2.4 Horizontal field of view: 103°–53° Vertical field of view: 56°–30° Varifocal, Remote focus and zoom, P-Iris control, IR corrected **AXIS Q3536-LVE 29 mm:** Varifocal, 11.3–29.4 mm, F1.7 Horizontal field of view: 40°–15° Vertical field of view: 22°–9° Varifocal, Remote focus and zoom, P-Iris control, IR corrected
Day and night	Automatically removable infrared-cut filter
Minimum illumination	**AXIS Q3536-LVE 9 mm** **Color:** 0.06 lux at 50 IRE, F1.5 **B/W:** 0 lux at 50 IRE, F1.5 **AXIS Q3536-LVE 29 mm:** **Color:** 0.08 lux at 50 IRE, F1.7 **B/W:** 0 lux at 50 IRE, F1.7
Shutter speed	1/91000 s to 1 s
Camera angle adjustment	Pan ±180°, tilt -43 to +80°, rotation ±175°

System on chip (SoC)

Model	ARTPEC-8
Memory	2048 MB RAM, 8194 MB Flash
Compute capabilities	Deep learning processing unit (DLPU)

Video

Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
Resolution	Up to 2688x1512
Frame rate	**With WDR**: 25/30 fps with power line frequency 50/60 Hz **Without WDR**: 50/60 fps with power line frequency 50/60 Hz
Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPEG Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265 Low latency mode Video streaming indicator
Multi-view streaming	Up to 8 individually cropped out view areas
Image settings	Saturation, contrast, brightness, sharpness, Forensic WDR: Up to 120 dB depending on scene, white balance, day/night threshold, tone mapping , exposure mode, exposure zones, defogging, barrel distortion correction, electronic image stabilization, compression, rotation: 0°, 90°, 180°, 270° including Corridor Format, mirroring, text and image overlay, dynamic text and image overlay, privacy masks, polygon privacy mask
Pan/Tilt/Zoom	Digital PTZ, optical zoom, preset positions Limited guard tour, control queue, on-screen directional indicator Tour recording (max 10, max duration 16 minutes each), guard tour (max 100) AXIS Q3536-LVE 9 mm: 2x optical zoom AXIS Q3536-LVE 29 mm: 2.6x optical zoom

Audio

Audio streaming	Two-way, full duplex
Audio encoding	24bit LPCM, AAC-LC 8/16/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz Configurable bit rate
Audio input/output	External microphone input or line input (balanced or unbalanced), line output, digital audio input, automatic gain control **Microphone power:** Microphone power 5V on tip, ring power 12V on ring, phantom power 12V on tip/ring

Network

Security	IP address filtering, HTTPS[a] encryption, IEEE 802.1x (EAP-TLS)[a] network access control, user access log, centralized certificate management, signed video, Axis Edge Vault, Axis device ID, secure keystore (CC EAL4 certified), TPM (FIPS 140-2 certified)
Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[a], HTTP/2, TLS[a], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTCP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, DHCPv4/v6, ARP, SSH, SIP, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf)

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, metadata, and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*. ACAP includes Native SDK and Computer Vision SDK. One-click cloud connection (O3C) ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T specification at *onvif.org*
Onscreen controls	Electronic image stabilization Day/night shift Defogging Wide dynamic range Video streaming indicator IR illumination Heater
Event conditions	Analytics, external input, supervised external input, edge storage events, virtual inputs through API Audio: audio detection, audio clip playing Call: state, state change Device status: above operating temperature, above or below operating temperature, below operating temperature, IP address removed, network lost, new IP address, shock detected, casing open, storage failure, system ready, within operating temperature Digital audio: digital signal contains Axis metadata, digital signal has invalid sample rate, digital signal missing, digital signal okay Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input, manual trigger, virtual input MQTT subscribe MQTT: stateless Scheduled and recurring: schedule Video: tampering, average bitrate degradation, day-night mode, live stream open
Event actions	I/O: toggle I/O once, toggle I/O while the rule is active Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP, HTTPS, TCP and SNMP trap Calls: end SIP call, make SIP call, answer call MQTT publish Overlay text, external output activation, play audio clip, zoom preset, day/night mode, make call, flash status LED, use lights, set defog mode, send MQTT publish message, set WDR mode
Built-in installation aids	Leveling assistant, straighten image, image grid, pixel counter

Analytics

AXIS Object Analytics	**Object classes**: humans, vehicles (types: cars, buses, trucks, bikes) **Trigger conditions**: line crossing, object in area, time in area[BETA] Up to 10 scenarios Metadata visualized with trajectories and color-coded bounding boxes Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Metadata	**Object data**: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position **Event data**: Producer reference, scenarios, trigger conditions
Applications	Included AXIS Object Analytics

	AXIS Video Motion Detection, active tampering alarm, audio detection **Supported** Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication, password protection, AES-XTS-Plain64 256bit SD card encryption **Hardware:** Secure boot, Axis Edge Vault with Axis device ID, signed video, secure keystore (CC EAL4+, FIPS 140-2 level 2 certified hardware protection of cryptographic operations and keys)
Network security	IEEE 802.1X (EAP-TLS)[a], IEEE 802.1AR, HTTPS/HSTS[a], TLS v1.2/v1.3[a], Network Time Security (NTS), X.509 Certificate PKI, IP address filtering
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing	IP66-, IP6K9K-, NEMA 4X- and IK10+-rated Polycarbonate hard coated dome Aluminum and plastic casing, polycarbonate (PC) dome, sunshield (PC/ASA) Color: white NCS S 1002-B This product can be repainted For repainting instructions of casing and impact on warranty, contact your Axis partner.
Mounting	Mounting bracket with junction box holes (double-gang, single-gang, 4" square, and 4" octagon) ¾" (M25) conduit side entry
Sustainability	PVC free
Power	Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4 Typical 9 W, max 23 W 10–28 V DC, typical 9 W, max 24 W
Connectors	Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE DC input, 3.5 mm mic/line in, 3.5 mm line out Terminal block for two configurable supervised inputs / digital outputs (12 V DC output, max load 50 mA)
IR illumination	OptimizedIR with power-efficient, long-life 850 nm IR LEDs AXIS Q3536-LVE 9 mm: Range of reach 40 m (130 ft) or more depending on the scene AXIS Q3536-LVE 29 mm: Range of reach 60 m (200 ft) or more depending on the scene
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	-50 °C to 55 °C (-58 °F to 131 °F) Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F) Start-up temperature: -40 °C (-40 °F) Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F) Humidity 5-95% RH (non-condensing)
Approvals	**EMC** CISPR 35, EN 50121-4, EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A, ICES-3(A)/NMB-3(A), IEC 62236-4, KS C 9832 Class A, KS C 9835, RCM AS/NZS CISPR 32 Class A, VCCI Class A **Safety** CAN/CSA-C22.2 No. 60950-22, CAN/CSA C22.2 No. 62368-1, IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, IEC 62471, IS 13252 **Environment** IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66, ISO 20653 IP6K9K, IEC/EN 62262 IK10+ (50J), NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9) **Network** NIST SP500-267
Dimensions	Height: 124 mm (4.9 in), 184 mm (7.3 in) including weathershield ø 183 mm (7.2 in)
Weight	2.1 kg (4.6 lb) including weathershield
Included accessories	Installation guide, Windows® decoder 1-user license, drill hole template, terminal block connectors for DC and I/O, RESISTORX® L-key, connector guard, cable gasket, conduit adapter, mounting bracket, weathershield
Optional accessories	AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards AXIS TQ3807-E Dome Smoked, AXIS T94M01D Pendant Kit For more accessories, see *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis Application Development Partners available at *axis.com/vms*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese
Warranty	5-year warranty, see *axis.com/warranty*

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

Environmental responsibility:

axis.com/environmental-responsibility

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AXIS Camera Station S1232 Rack Recording Server

Flexible and scalable recording server

Featuring powerful components, this secure, scalable recording server offers high performance and support for powerful applications and features. It includes AXIS Camera Station licenses and multiple RAID configurations for flexible storage and multiple redundancy configuration. And, a Trusted Platform Module (FIPS 140-2 level 2 certified) ensures secure storage of all cryptographic keys and certificates. Available in two variants with a choice of storage, it comes preloaded with preconfigured software. Plus, all supported products are available in one price list for a one-stop-shop experience. Furthermore, it offers services such as Keep Your Hard Drive, Next Business Day Onsite Support, and a 5-year warranty.

- > Scalable and powerful solution
- > Flexible storage options including RAID
- > Available in 2 variants: 16 TB and 32 TB
- > 32 AXIS Camera Station licenses included
- > Extensive support and 5-year warranty



AXIS Camera Station S1232 Rack Recording Server

Models	S1232 Rack 16 TB S1232 Rack 32 TB
Licenses	32 AXIS Camera Station core licenses included and tied to the hardware. Can be upgraded with additional licenses (sold separately).
System scalability	Qualified for 128 doors and a recording bitrate up to 500 Mbit per second, 64 video channels at 4MP, 30FPS in a retail scenario. Check AXIS Site Designer for storage estimates. Tested with: 15 live view clients 3 clients performing heavy playback or scrubbing operations

Hardware

Processor	Intel® Xeon® E processor
Memory	2x 8 GB
Storage	**S1232 Rack 16 TB** Hot swappable Enterprise Class HDD Total HDD slot: 4 Free HDD slot: 0 Out-of-the-box storage: 12 TB after RAID 5 Out-of-the-box capacity without RAID: 16 TB (4x4 TB) **S1232 Rack 32 TB** Hot swappable Enterprise Class HDD Total HDD slot: 4 Free HDD slot: 0 Out-of-the-box storage: 24 TB after RAID 5 Out-of-the-box capacity without RAID: 32 TB (4x8 TB)
RAID	Factory RAID level: 5 Supported RAID levels: 0, 1, 5, 6, 10
Power	2 x 600 W hot-plug redundant power supplies (included) (100–240 V AC, 7.1–3.6 A, 50/60 Hz)
Power consumption	**Average:** 127 W (433 BTU/h) **Maximum:** 158 W (539 BTU/h)
Connectors	**Front side:** 1x USB 2.0 1x iDRAC direct port **Rear side:** 1x USB 2.0 1x USB 3.2 1x VGA 1x Serial port 1x iDRAC dedicated Ethernet port 2x RJ45 1 Gbps

Video

Video streaming	Not intended for local viewing of video. Recommended to use Axis workstations.

Cybersecurity

Edge security	**Hardware:** Secure boot, Axis Edge Vault with secure keystore (CC EAL4+, FIPS 140-2 level 2 certified hardware protection of cryptographic operations and keys)
Documentation	AXIS Hardening Guide AXIS Vulnerability Management Policy AXIS Security Development Model To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Operating system	Microsoft® Windows® 10 IoT Enterprise LTSC 2021 Built-in operating system recovery: yes Operating system drive: 240 GB SSD
Remote server management	iDRAC 9 basic license
Security	Support for encrypted operating system drive and recording drive FIPS 140-2 level 2 certified Trusted Platform Module (TPM 2.0)
Operating conditions	10 °C to 35 °C (50 °F to 95 °F) Humidity 8–80% RH (non-condensing)
Storage conditions	Humidity 5–95% RH (non-condensing)
Approvals	**EMC** EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, FCC Part 2 and 15 Class A, ISED ICES-003 Class A, RCM AS/NZS CISPR 32 Class A, KS C 9832 Class A, KS C 9835, VCCI 32-1 Class A, BSMI **Safety** IEC/EN/UL 62368-1, EN 62311, NOM-019-SCFI-1998
Compliance	NDAA (National Defense Authorization Act) TAA (Trade Agreements Act)
Dimensions	599 x 482 x 43 mm (23.59 x 19 x 1.7 in), 1U chassis **Rail sizing:** Type: static Minimum rail mounting depth: 622 mm (24.49 in) Square-hole rack adjustment range: 608–879 mm (23.94–34.61 in) For more information, see the Dell EMC Enterprise Systems Rail Sizing and Rack Compatibility Matrix
Weight	12.9 kg (28.44 lb)
Included accessories	Dell Ready Rails 1U Static Rails, 2x C13 to C14 power cords for rack PDU (Wall plug power cords are not included)
Optional accessories	Axis workstations For more accessories, see *axis.com*
Services	Next Business Day Onsite Support Keep Your Hard Drive
Warranty	5-year warranty, see *axis.com/warranty*
Export control	This product is subject to export control regulations, and you should always comply with all applicable national and international export or re-export control regulations.

AXIS Camera Station

For details about AXIS Camera Station features and functions, see the AXIS Camera Station datasheet on *axis.com*

Environmental responsibility:

axis.com/environmental-responsibility

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AXIS T91D61 Wall Mount 1.5” NPS

For selected fixed dome cameras

AXIS T91D61 is an aluminum wall mount with a 1.5″ NPS thread. It is cor
and Axis ACI 3/4" conduit adapters. The cables can be routed through the ba
connection. The wall mount includes AXIS T91A6 Pipe Seal.

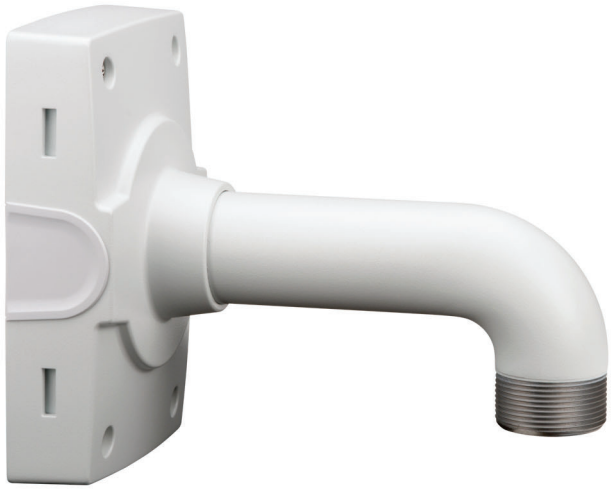
> Indoor and outdoor

> Robust and safe installation

> Ease of installation

> Vandal resistance with IK10

AXIS T91D61 Wall Mount Bracket for outdoor cameras Q3536-LVE
Quantity : 12
PowerPlan - Main Building :
V3-04,V3-11,V3-03,V3-02,V3-13,V3-14,V3-01,V3-07,V3-06,V3-05,V3-12,
Site Office :
V2-01



AXIS T91D61 Wall Mount 1.5” NPS

General	
Supported products	AXIS P32 Series (requires camera-specific pendant kit) AXIS P33 Series (requires camera-specific pendant kit) AXIS P3707-PE (requires AXIS T94M02D Pendant Kit) AXIS Q35 Series (requires camera-specific pendant kit) AXIS Q36 Series (requires camera-specific pendant kit)
Dimensions	140 x 268 x 196 mm (5 1/2 x 10 1/2 x 7 3/4 in)
Weight	1.4 kg (3.1 lb)
Maximum load	15 kg (33 lb)
Cable routing	Back: Cable hole Side: Cable conduit holes M20 (3/4")
Environment	Indoor Outdoor
Approvals	IEC/EN/UL 60950-1 IEC/EN/UL 60950-22 EN 50581 IEC 62262 IK10
Included accessories	Installation Guide AXIS T91A6 Pipe Seal
Optional accessories	Axis network cable couplers, AXIS Conduit Adapter U-shape 30 mm A For more accessories, see *www.axis.com*
Warranty	3-year warranty, see *axis.com/warranty*

Environmental responsibility:

axis.com/environmental-responsibility

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SPEC SHEET

W BOX TECHNOLOGIES

CAT6 PATCH PANEL 24 PORT

COMMERCIAL AND RESIDENTIAL



This 24 Port Patch Panel is a perfect solution for networking your home or business eliminating cross connections and improper wiring.

- IDC TERMINAL BLOCK FOR 110 AND KRONE
- 1U SIZE
- ACCEPTS 22-26 AWG. SOLID OR STRANDED WIRE
- SUPPORTS T568A/B WIRING GUIDLINES
- COLOR CODED
- INCLUDES SCREWS AND PUNCHDOWN TOOL
- WARRANTY: LIMITED LIFETIME
- UPC: 811914023692

PART #: 0E-C6PP24

UL LISTING NUMBER: E471770

Product Certification:

c UL us LISTED

RoHS COMPLIANT

W BOX TECHNOLOGIES

FOR MORE INFORMATION,
CONTACT YOUR ADI SALES PERSON.

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 31/01/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 022 **Referencing** WTS-E02
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : FEDERAL SIGNAL

Descriptions / comments

Strob light

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

- [x] REVIEWED
- [ ] REVIEWED AS NOTED
- [ ] REVISE & RESUBMIT

DC SD NO. 004

PROJECT NO. 19-9543 (WTS)

BY K.Speidel

DATE Jan 31. 2023

DILLON CONSULTING

FEDERAL SIGNAL



Model 191XL

Hazardous Location Division Listed LED Light

A B C G R

Model 191XL is a hazardous location flashing signal light that comes standard in flashing mode and is field configurable to steady-burn mode for maximum functionality.

Federal Signal's super bright LED array used in the 191XL produces intense light output and 50,000 hours of service. Increased shock and vibration resistance add to this unit's rugged industrial portfolio of features.

FEATURES

- Available in 24VAC/DC, 120-240VAC and 277VAC
- Five lamp/lens colors: Amber, Blue, Clear, Green and Red
- Flashing mode standard, configurable to steady-burn
- 50,000 hours, vibration-resistant LED lamp
- Dome guard included
- Available in 3/4-inch NPT pipe mount or surface mount
- Type 4X, IP66 enclosure
- IP69K compliant
- Marine Listed
- UL and cUL Listed for Class I, Division 2, Groups A, B, C and D; Class II, Division 1, Groups E, F and G; Class III

MODEL	VOLTAGE	OPERATING CURRENT	IN-RUSH CURRENT	FLASH RATE/ MINUTE	MOUNT	LIGHT OUTPUT
191XL-_*_024_**	24VAC/DC	0.40 amps	1.75 amps, 5.0 mS	60	3/4" NPT Pipe or Surface	200 cd***
191XL-_*_120 240_**	120/240VAC	0.21/0.13 amps	2.0 amps, 0.25 mS	60	3/4" NPT Pipe or Surface	200 cd***
191XL-277_**	277VAC	0.13 amps	9.75 amps, 0.25mS	60	3/4" NPT Pipe	200 cd***

* Include (S) for Surface Mount Option (Example part number: 191XL-S120240R for surface mount option, 191XL-120-240R for pipe mount)

** Indicates color: (A) Amber, (B) Blue, (C) Clear, (G) Green or (R) Red

*** Tested with clear lens and flashing mode

Note: When ordering the 120/240 voltage, use 120-240 for the pipe mount model and 120240 for the surface mount model

191XL-S-120240-R

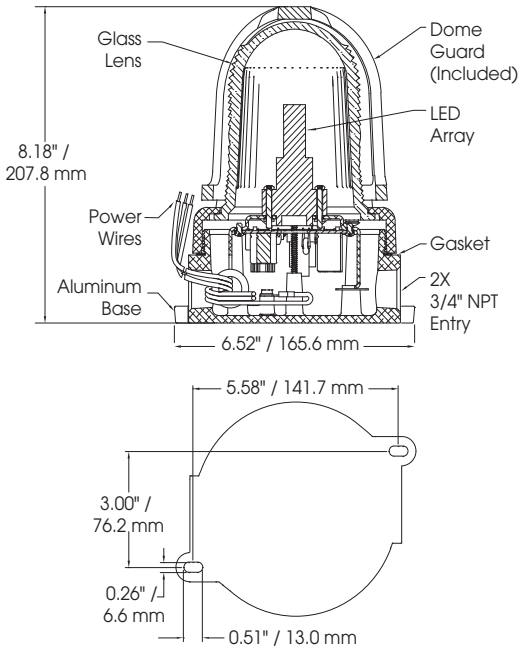
HAZARDOUS LOCATION RATING: 191XL

T-CODE AT MAXIMUM AMBIENT TEMPERATURE, °C

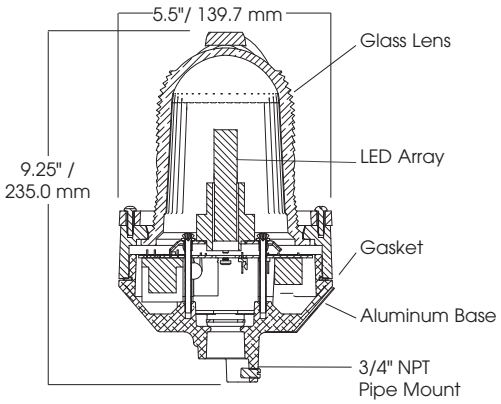
Hazardous Location	40°C			55°C			66°C		
	24 VAC/DC	100-265 VAC	277 VAC	24 VAC/DC	100-265 VAC	277 VAC	24 VAC/DC	100-265 VAC	277 VAC
Class I, Division 2, Groups A, B, C, D	T6	T6	T5	T5	T5	T5	T4A	T4A	T5
Class II, Division 1, Groups E, F, G	T6	T6	T5	T6	T6	T5	T6	T6	T5
Class III	T6	T6	T5	T6	T6	T5	T6	T6	T5

Hazardous Location Division Listed LED Light (191XL)

Surface Mount



Pipe Mount



SPECIFICATIONS

Lamp Life:		50,000 Hours
Light Source:		LED
Operating Temperature:	-58°F to 150°F	-50°C to 66°C
Net Weight:	4.0 lbs	1.81 kg
Shipping Weight:	4.25 lbs	1.93 kg
Pipe Mount		
Height (with Dome Guard):	9.25"	235.0 mm
Diameter:	5.5"	139.7 mm
Surface Mount		
Height (with Dome Guard)	8.18"	207.8 mm
Diameter	6.52"	165.6 mm

HOW TO ORDER

191XL – S 120 240 A

TYPE 191XL

MOUNTING
Blank - Pipe
S - Surface

VOLTAGE
024 (24VDC)
120 240 (120-240VAC)[1]
277 (277VAC)[2]

COLOR
A Amber
B Blue
C Clear
G Green
R Red

[1] When ordering the 120/240 voltage, use 120-240 for the pipe mount model and 120240 for the surface mount model

[2] 277VAC versions are available in pipe mount only

REPLACEMENT PARTS

Description	Part Number
LED array, Amber	K14700030A-A
LED array, Blue	K14700030A-B
LED array, Clear	K14700030A-W
LED array, Green	K14700030A-G
LED array, Red	K14700030A-R
PC Board Assembly, 24VDC	K2005455A
PC Board Assembly, 120/240VAC	K2005416A
PC Board Assembly, 277VAC	K2005416A-01
Glass Lens/Ring Assembly, Amber[1]	K8449078C-01
Glass Lens/Ring Assembly, Blue[1]	K8449078C-06
Glass Lens/Ring Assembly, Clear[1]	K8449078C-04
Glass Lens/Ring Assembly, Green[1]	K8449078C-07
Glass Lens/Ring Assembly, Red[1]	K8449078C
Guard, Dome	K8449090C

[1]Assembly includes a gasket

OPTIONAL ACCESSORIES

Description	Part Number
Hazardous Location Mounting Bracket	LHWB

Mounting Bracket shown on pages138-139

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᔾᔪᑎᒃᓴᓕᕆᔨᒃᑯᑦ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 19/04/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 023 **Referencing** WTS-E04
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Contrôle INCO

Descriptions / comments

Exterior control lighting

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

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X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-023

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE April 21, 2023

DILLON CONSULTING

LES CONTRÔLES INCO INC.

CLIENT: SOLID WASTE TRANSFERT STATION

PROJECT: CONTROL

EXTERIOR LIGHTING CONTROL

DRAWING N°: 230406-3 (PH1242)

DATE: 2023-04-06

REVISION: 1 DATE: 2023-04-06

Legend

DETECTION

- FOOT SWITCH
- LEVEL SWITCH (x)
- LIMIT SWITCH
- PHOTOCELL
- PROXIMITY SENSOR (x mm)
- PRESSURE SWITCH
- TEMPERATURE SWITCH (x C)
- PHOTOCELL TRANSMITTER
- PHOTOCELL RECEIVER
- PROXIMITY SWITCH
- ULTRASONIC SENSOR

WIRING

- INTERNAL WIRING
- EXTERNAL WIRING
- WIRING INTERSECTION (WIRES ARE CONNECTED)
- WIRING INTERSECTION (WIRES ARE NOT CONNECTED)
- GROUND CONNECTION
- CABLE1 — Brin 1, Brin 2 — CABLE
- EX_1 (LCP1/P2/G2) — REFERENCE
- EX_1 (LCP1/P2/H2) — LINE NUMBER, PAGE NUMBER, PANEL NUMBER

PROTECTION

- CONTROL FUSE (1A)
- POWER FUSE
- FUSE HOLDER (1A)
- BREAKER
- BRIDGE RECTIFIER
- DISCONNECT
- DISCONNECT WITH FUSE (600V / 100A FUSIBLE:)
- OVERLOAD
- REACTOR

COIL ET CONTACTOR

- C_EX1 (A1, A2) CONVEYOR LC1D09 — CONTACTOR COIL
- NO (P2/D5) NC — CONTACTOR CONTACT REFENCE
  EX: (P2/D5) = CONTACT IS LOCATED AT PAGE 2 LINE D, COLUMN 5
- C_EX1 (13, 14) (P2/B5) — COIL AUXILIARY CONTACT
  EX: REFERENCE (P2/B5) = CONTACT IS LOCATED AT PAGE 2 LINE B, COLUMN 5
- C_EX1 (1, 2) 100-C09D10 (P2/B5) — CONTACTOR POWER CONTACT
  EX: REFERENCE (P2/B5) = CONTACT IS LOCATED AT PAGE 2 LINE B, COLUMN 5
- R_EX1 (A1, A2) VALVE — RELAY COIL
- NO (P2/F5) NC — RELAY CONTACT REFERENCE
  EX: (P2/F5) = CONTACT IS LOCATED AT PAGE 2 LINE F, COLUMN 5
- R_EX1 VALVE (P2/E5) — RELAY CONTACT
  EX: REFERENCE (P2/E5) = CONTACT IS LOCATED AT PAGE 2 LINE E, COLUMN 5

TERMINAL

- TB0 1 — TERMINAL BLOCK NUM. / TERMINAL NUM. — SINGLE TERMINAL
- TB0 1A — TERMINAL BLOCK NUM. / TERMINAL NUM. — DOUBLE TERMINAL
- TB0 2 — TERMINAL BLOCK NUM. / TERMINAL NUM. — FUSE TERMINAL
- 4 — TEMRINAL NUM. — TERMINAL
- TB0 — TERMINAL BLOCK NUM. / TERMINAL NUM. — DISCONNECT TERMINAL

MISCELLANEOUS

- JUMPER
- EMERGENCY STOP
- MARCHE — PUSH BUTTON
- HORS - EN / EN — SELECTOR SWITCH
- COLOR — V — LIGHT
- COLOR — R — BEACON
- BUZZER
- PULL CORD — TIRETTE URGENCE
- FAN
- 5A — POWER 120V 5A

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REV.	DATE	APPR.	REV.	DATE	APPR.
1	2023-04-06				

CLIENT: SOLID WASTE TRANSFERT STATION

PROJECT: CONTROL
EXTERIOR LIGHTING CONTROL

DATE	TYPE OF SCHEMATIC	
2023-04-06	LEGEND	
BY: J.P.D.	RESP: E.M	APPR: E.M
DRAWING N° 230406-3 (PH1242)		PAGE 2 OF 7

LES CONTRÔLES INCO INC.
300, St-Jean Baptiste Nord
Princeville (Québec)
Canada G6L 5E2
TEL.: (819) 364-5330
FAX.: (819) 364-5120
info@controlesinco.com

BILL OF MATERIALS

REFERENCE	QTY	ITEM NUMBER	MANUFACTURER	DESCRIPTION
C1	1	100-C30D10	ALLEN BRADLEY	CONTACTOR 120V 3 POLES 30A 1NO
LT1\S1	2	800F-ALP	ALLEN BRADLEY	BLOCK FOR PUSH BUTTON AND LIGHT, 22MM, PLASTIC
LT1	1	800F-N5G	ALLEN BRADLEY	GREEN LED, 120V AC
LT1	1	800FP-P3	ALLEN BRADLEY	PILO LIGHT, GREEN, 22MM, PLASTIC
S1	1	800FP-SM32	ALLEN BRADLEY	SELECTOR 3 POSITIONS, MAINTAINED, 22MM, PLASTIC
S1	2	800F-X10	ALLEN BRADLEY	BLOCK CONTACT N.O. FOR PUSH BUTTON
CB1	1	FAZ-C2-1-SP	EATON	BREAKER 1 POLE 2A CURVE C
PAN1	1	A12N106	HOFFMAN	PANEL 12"X10"X6"
PAN1	1	A12N10P	HOFFMAN	BACKPLATE FOR PANEL 12X10

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REV.	DATE	APPR.	REV.	DATE	APPR.

CLIENT: SOLID WASTE TRANSFERT STATION

PROJECT: CONTROL
EXTERIOR LIGHTING CONTROL

DATE	TYPE OF SCHEMATIC	
2023-04-06	LIST OF MATERIALS	
BY: J.P.D.	RESP: E.M.	APPR: E.M.
DRAWING N° 230406-3 (PH1242)		PAGE 3 OF 7

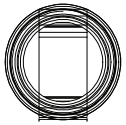
LES CONTRÔLES INCO INC.
300,
St-Jean Baptiste Nord
Princeville (Québec)
Canada G6L 5E2

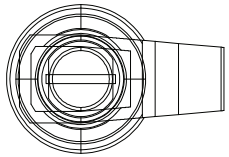
TEL.: (819) 364-5330
FAX.: (819) 364-5120
info@controlesinco.com

LT1



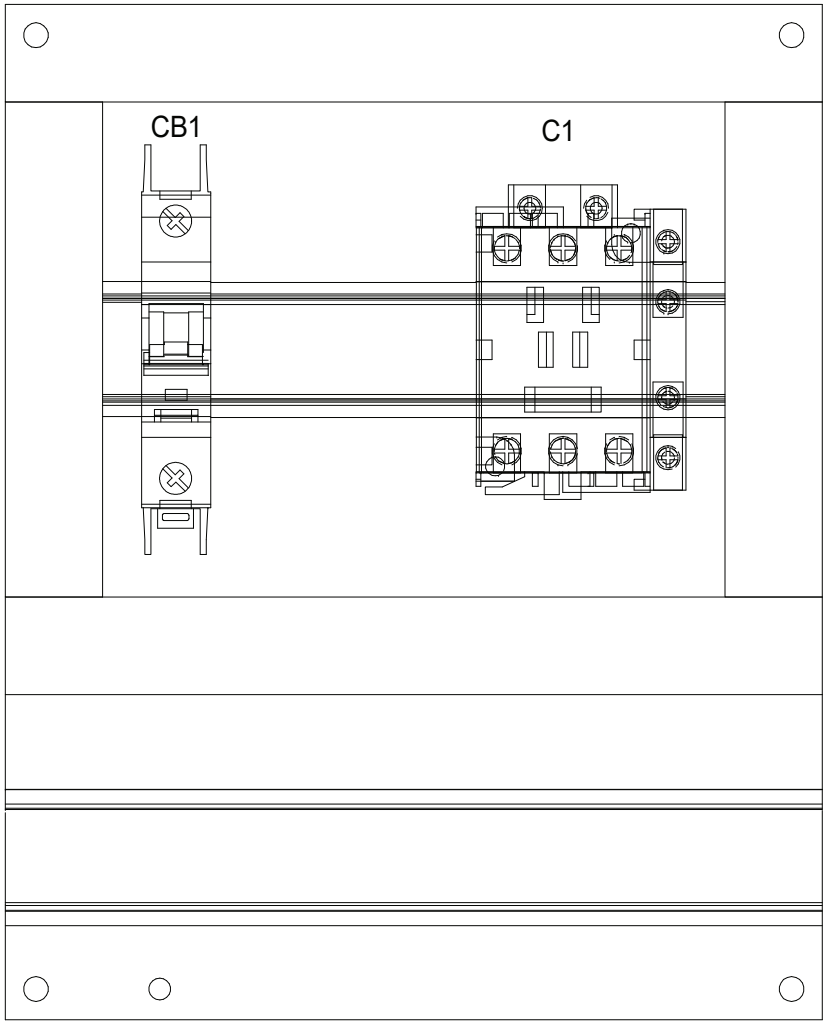
S1





CB1

C1



PAN1
HOFFMAN
A12N106

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REV.	DATE	APPR.	REV.	DATE	APPR.

CLIENT:

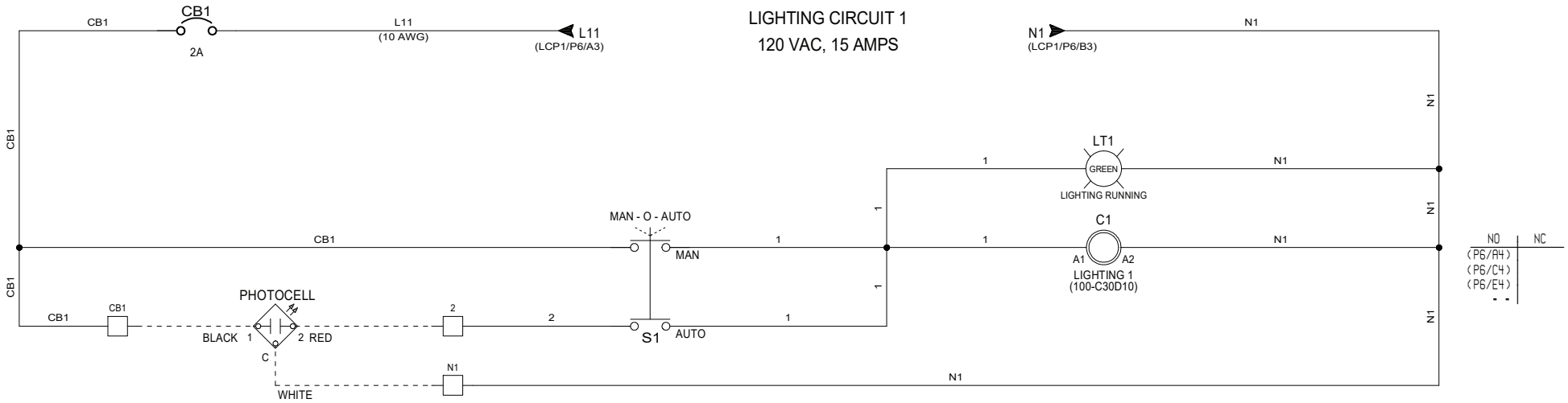
PROJECT:

SOLID WASTE TRANSFERT STATION
CONTROL
EXTERIOR LIGHTING CONTROL

DATE	TYPE OF SCHEMATIC	
2023-04-06	PHYSICAL LAYOUT	
BY: J.P.D.	RESP: E.M.	APPR: E.M.
DRAWING N° 230406-3 (PH1242)		PAGE 4 OF 7

LES CONTRÔLES INCO INC.
300,
St-Jean Baptiste Nord
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							PROJECT: CONTROL EXTERIOR LIGHTING CONTROL	BY: J.P.D.	RESP: E.M	APPR: E.M	
								DRAWING N° 230406-3 (PH1242)		PAGE 5 OF 7	
	REV.	DATE	APPR.	REV.	DATE	APPR.					

SMALL, TYPE 1



APPLICATION

These enclosures have a size range of 6 x 6 x 4-in. to 14 x 12 x 8-in. and meet basic functionality requirements for applications that do not require oil- or dust-tight enclosures.

FEATURES

- Flush slotted latch operated with a screwdriver; optional latches available
- Weldnuts provided for mounting optional panels
- Butt hinges
- Mounting holes on back of enclosure

SPECIFICATIONS

- 16 gauge steel

FINISH

ANSI 61 gray polyester powder paint finish inside and out over pretreated surfaces. Optional solid panels are white and optional perforated panels are gray.

ACCESSORIES

See also Accessories.
T-Handle Latch and Keyed Cylinder Lock Kits
Grounding Device
Panels for Type 1 Enclosures and Small Type 3R Enclosures
Touch-Up Paint
Steel and Stainless Steel Window Kits

BULLETIN: A1SM

INDUSTRY STANDARDS

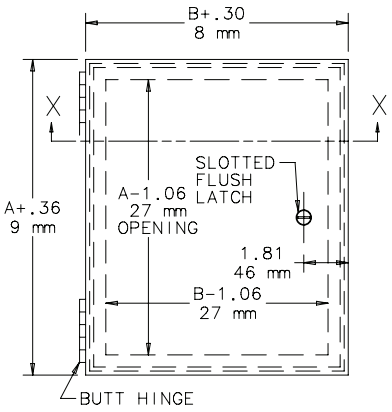
UL 50, 50E Listed; Type 1; File No. E27567
cUL Listed per CSA C22.2 No 40; Type 1; File No. E27567

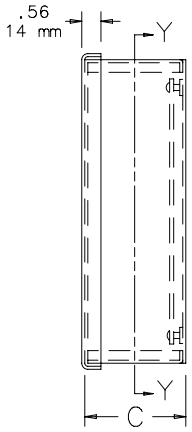
NEMA/EEMAC Type 1
CSA, File 42184: Type 1
IEC 60529, IP30

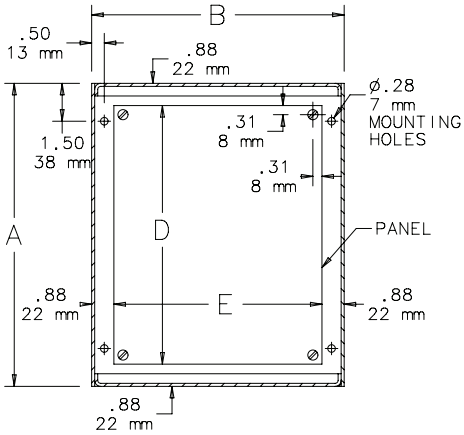
Standard Product

Catalog Number	AxBxC in./mm	Panel	Perforated Panel	Panel Size D x E in./mm
A6N64	6.00 x 6.00 x 4.00 152 x 152 x 102	A6N6P	A6N6PP	4.25 x 4.25 108 x 108
A8N64	8.00 x 6.00 x 4.00 203 x 152 x 102	A8N6P	A8N6PP	6.25 x 4.25 159 x 108
A8N84	8.00 x 8.00 x 4.00 203 x 203 x 102	A8N8P	A8N8PP	6.25 x 6.25 159 x 159
A10N84	10.00 x 8.00 x 4.00 254 x 203 x 102	A10N8P	A10N8PP	8.25 x 6.25 210 x 159
A10N104	10.00 x 10.00 x 4.00 254 x 254 x 102	A10N10P	A10N10PP	8.25 x 8.25 210 x 210
A12N104	12.00 x 10.00 x 4.00 305 x 254 x 102	A12N10P	A12N10PP	10.25 x 8.25 260 x 210
A12N124	12.00 x 12.00 x 4.00 305 x 305 x 102	A12N12P	A12N12PP	10.25 x 10.25 260 x 260
A14N124	14.00 x 12.00 x 4.00 356 x 305 x 102	A14N12P	A14N12PP	12.25 x 10.25 311 x 260
A8N66	8.00 x 6.00 x 6.00 203 x 152 x 152	A8N6P	A8N6PP	6.25 x 4.25 159 x 108
A8N86	8.00 x 8.00 x 6.00 203 x 203 x 152	A8N8P	A8N8PP	6.25 x 6.25 159 x 159
A10N86	10.00 x 8.00 x 6.00 254 x 203 x 152	A10N8P	A10N8PP	8.25 x 6.25 210 x 159
A10N106	10.00 x 10.00 x 6.00 254 x 254 x 152	A10N10P	A10N10PP	8.25 x 8.25 210 x 210
A12N106	12.00 x 10.00 x 6.00 305 x 254 x 152	A12N10P	A12N10PP	10.25 x 8.25 260 x 210
A12N126	12.00 x 12.00 x 6.00 305 x 305 x 152	A12N12P	A12N12PP	10.25 x 10.25 260 x 260
A14N126	14.00 x 12.00 x 6.00 356 x 305 x 152	A14N12P	A14N12PP	12.25 x 10.25 311 x 260
A16N126	16.00 x 12.00 x 6.00 406 x 305 x 152	A16N12P	A16N12PP	14.25 x 10.25 362 x 260
A20N126	20.00 x 12.00 x 6.00 508 x 305 x 152	A20N12P	A20N12PP	18.25 x 10.25 464 x 260
A12N128	12.00 x 12.00 x 8.00 305 x 305 x 203	A12N12P	A12N12PP	10.25 x 10.25 260 x 260
A14N128	14.00 x 12.00 x 8.00 356 x 305 x 203	A14N12P	A14N12PP	12.25 x 10.25 311 x 260

Purchase panels separately.

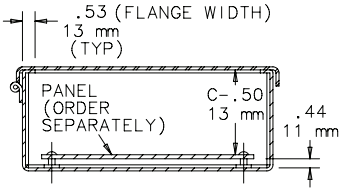






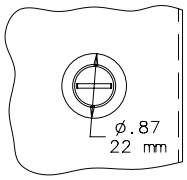
SECTION Y-Y

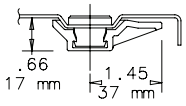
NOTE: 1. Panels are 14 gauge steel.
2. Panel screws have #10-32 threads.



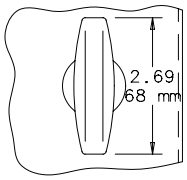
SECTION X-X

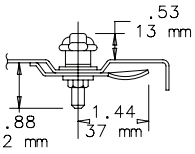
Optional Latches



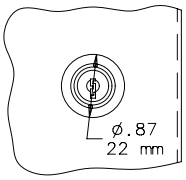


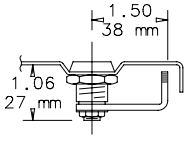
Standard Slotted
Flush Latch





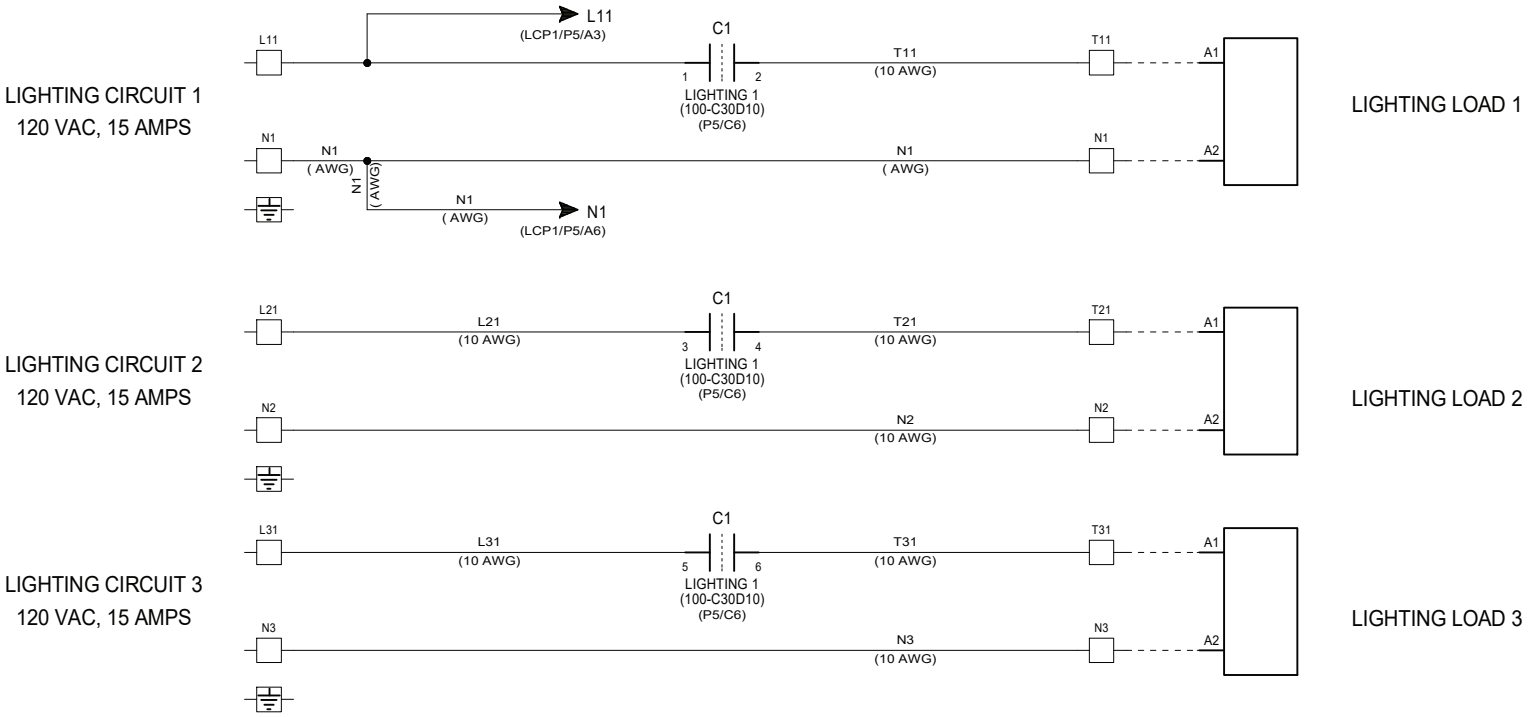
"T" Handle Latch Kit
AL7A





Cylinder Lock Kit
AL12AR

C2572-C



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REV.	DATE	APPR.	REV.	DATE	APPR.

CLIENT:

PROJECT:

SOLID WASTE TRANSFERT STATION
CONTROL
EXTERIOR LIGHTING CONTROL

DATE	TYPE OF SCHEMATIC	
2023-04-06	LIGHTING	
BY: J.P.D.	RESP: E.M	APPR: E.M
DRAWING N° 230406-3 (PH1242)		PAGE 6 OF 7

LES CONTRÔLES INCO INC.
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Princeville (Québec)
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TEL.: (819) 364-5330
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info@controlesinco.com

Product Selection—100-C/104-C Contactors

- Compact sizes from 4...55 kW/5...75 Hp (9...97 A)
- Common accessories for all contactor sizes
- Front and side mounting of auxiliary contacts
- Electronic and pneumatic timing modules
- Space-saving coil-mounted control modules
- Reversible coil terminations (line or load side)
- All devices can be attached to 35 mm DIN mounting Rail
- Environmentally friendly materials


100-C Contactor


104-C Reversing Contactor

The Bulletin 100-C/104-C IEC contactor family, along with a wide range of common accessories and Bulletin 193 solid-state overload relays, provides the most compact and flexible starter component system available.

3-Pole AC- and DC-operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3, AC-4										Auxiliary Contacts		Cat. No.(1)
		3-phase kW (50 Hz)				Hp (60 Hz)								
40 °C (104 °F)		230V	400/415V	500V	690V	1-Phase		3-Phase						
AC-3	AC-1					115V	230V	200V	230V	460V	575V	N.O.	N.C.	
9	32	3	4	4	4	1/2	1-1/12	2	2	5	7-1/12	1	0	100-C09⊗10
												0	1	100-C09⊗01
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	1	0	100-C12⊗10
												0	1	100-C12⊗01
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	1	0	100-C16⊗10
												0	1	100-C16⊗01
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	1	0	100-C23⊗10
												0	1	100-C23⊗01
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	0	100-C30⊗00
												1	0	100-C30⊗10
												0	1	100-C30⊗01
37	65	11	18.5/20	20	18.5	3	5	10	10	25	30	0	0	100-C37⊗00
												1	0	100-C37⊗10
												0	1	100-C37⊗01
43	85	13	22	25	22	3	7-1/2	10	15	30	30	0	0	100-C43⊗00
												1	0	100-C43⊗10
												0	1	100-C43⊗01
55	85	15	30	30	30	5	10	15	20	40	40	0	0	100-C55⊗00
												1	0	100-C55⊗10
												0	1	100-C55⊗01
60	100	18.5	32	37	32	5	10	15	20	40	50	0	0	100-C60⊗00
												1	0	100-C60⊗10
												0	1	100-C60⊗01
72	100	22	40	45	40	5	15	20	25	50	60	0	0	100-C72⊗00
												1	0	100-C72⊗10
												0	1	100-C72⊗01
85	100	25	45	55	45	7-1/2	15	25	30	60	60	0	0	100-C85⊗00
												1	0	100-C85⊗10
												0	1	100-C85⊗01
97	130	30	55	55	55	10	20	30	30	75	75	0	0	100-C97⊗00
												1	0	100-C97⊗10
												0	1	100-C97⊗01

(1) For screwless terminals on 100-C09...C16, add an "R" after the letter "C" in the catalog number. Example: Cat. No. 100-C09⊗10 becomes 100-CR09⊗10. The AC-1 rating for the 100-CR is limited to 25 A.

⊗ Coil voltage code and terminal position—see page 19

Coil Voltage Codes

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz: Cat. No. 100-C09⊗10 becomes Cat. No.100-C09D10.

AC Voltages [V]	12	24	32	36	42	48	100	100…110	110	120	127	200	200…220	208	208…240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	KL[1]	—	—

(1) Not available on 100/104-C90 or -C97 contactors.

AC Voltages [V]	220…230	230	230…240	240	277	347	380	380…400	400	400…415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	KL[1]	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

(1) Not available on 100/104-C90 or -C97 contactors.

DC Voltages [V]		9	12	24	24	36	36…48	48	48…72	60	64
100-C09…C55	Electronic with Integrated Diode	—	EQ	EJ	QJ[1]	—	EW	—	EY	—	—
100-C60…C97	with Integrated Diode	DR	DQ	DJ	—	DW	—	DY	—	DZ	DB

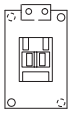
(1) "QJ" coil has faster dropout time (16…21 ms).

DC Voltages [V]		72	80	110	110…125	115	125	220	220…250	230	250
100-C09…C55	Electronic with Integrated Diode	—	—	—	ED	—	—	—	EA	—	—
100-C60…C97	with Integrated Diode	DG	DE	DD	—	DP	DS	DA	—	DF	DT

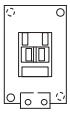
Coil Terminal Position

All contactors are delivered with the coil terminals located on the line side.

For load side coil terminations, insert a "U" prior to the coil voltage code. Ordering example: Cat. No. 100-C09UD10.



Cat. No.100-C09⊗10 Line Side



Cat. No.100-C09U⊗10 Load Side

Product specifications

Eaton FAZ-C2/1-SP

Catalog Number: FAZ-C2/1-SP

Eaton FAZ supplementary protector,UL 1077 Industrial miniature circuit breaker-supplementary protector,Single package,Medium levels of inrush current are expected,2 A,15 kAIC,Single-pole,277 V,5-10X/n,Q38,50-60 Hz,Standard terminals,C Curve

General specifications

Product Name
Eaton FAZ supplementary protector

Catalog Number
FAZ-C2/1-SP

EAN
4015081637553

Product Length/Depth
.69 in

Product Height
3.5 in

Product Width
3 in

Product Weight
.27 lb

Warranty
1 year

Certifications
IEC 60947-2 CSA Std. C22.2 No.235
UL 1077

Catalog Notes
Positioned for medium inrush startup currents to provide protection for small transformers and pilot devices. Single packaging of single-pole curves B, C and D for select amperages only.

Pilot Light Operators



Plastic Pilot Light
Cat. No. 800FP-P7



Metal Pilot Light
Cat. No. 800FM-P4

Color	Package Quantity	Plastic	Metal
		Cat. No.	Cat. No.
Green	1	800FP-P3	800FM-P3
Red		800FP-P4	800FM-P4
Yellow		800FP-P5	800FM-P5

800F **P** - **P** **3** - ____
a b c d

a	
Operator Construction	
Code	Description
P	Round plastic operator (IP69K; IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b	
Operator Type	
Code	Description
P	Diffuser

c	
Lens Color (1)	
Code	Description
0	Amber (2)
3	Green
4	Red
5	Yellow (2)
6	Blue (2)
7	Clear
9	No cap

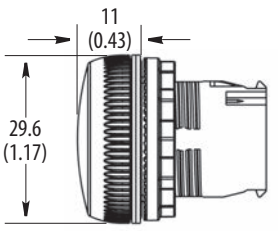
d	
Packaging	
Code	Description
Blank	1 per package
BP	10 per package (3)

(1) For custom laser-engraved operator, consult your local Rockwell Automation sales office or Allen-Bradley distributor.
(2) When using LED for illumination, a white LED is recommended.
(3) Only available with no color cap (Code 9 from Table c).

Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Pilot Light Operators



3-position, Non-illuminated



Standard Knob
Cat. No. 800FP-SM32

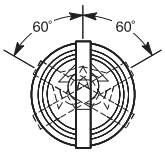


Knob Lever
Cat. No. 800FM-HM32

Switching Angle

Table 11 - Target Table and Operator Position (60° Switching Angle)

Contact Type (1)	Position on Mounting Latch	↖	↑	↗
N.O.	Left	X	0	0
	Right	0	0	X
	Center	X	0	X
	Center CL (2)	X	0	0
	Center CR (2)	0	0	X
N.C.	Left	0	X	X
	Right	X	X	0
	Center	0	X	0
	Center CL (2)	0	X	X
	Center CR (2)	X	X	0



(1) Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.
(2) The center contact block can have the same target output as the left or right contact block, by specifying center left (CL) or center right (CR) option.
Note: X = Closed / 0 = Open

Color	Operator Type ↖	Operator Type ↑	Operator Type ↗	Package Quantity	Standard Knob Plastic Cat. No.	Standard Knob Metal Cat. No.	Knob Lever Plastic Cat. No.	Knob Lever Metal Cat. No.
Black with White Insert	Maintained ↓			1	800FP-SM32	800FM-SM32	800FP-HM32	800FM-HM32
	Spring return from left and right ↓				800FP-SB32	800FM-SB32	800FP-HB32	800FM-HB32

800F **P** – **S** **M3** **2** ____ ____
a b c d e f

a	
Operator Construction	
Code	**Description**
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b	
Operator Type	
Code	**Description**
S	Standard knob
H	Knob lever (1)

c	
Operator Function	
Code	**Type**
M3	Maintained ↓
L3	Spring return from left ↓
R3	Spring return from right ↓
B3	Spring return from left and right ↓

d		
Knob/Insert Color		
Code	**Knob Color**	**Insert Color**
2	Black	White

e	
Orientation	
Code	**Description**
Blank	Standard
N	90° offset (2)

f	
Operation	
Code	**Description**
Blank	Standard
CL	Center left (3)
CR	Center right (3)

(1) 30 mm hole spacing does not work if knob lever is used. See page 47 for recommended operator panel spacing.
(2) For use in vertical mount Bulletin 800F enclosures.
(3) The center contact block can have the same target output as the left or right contact block, by specifying center left (CL) or center right (CR) option.

Power Modules with Contact Blocks and Latch — Composite

800F	–	P	N	5	R	X	1	0	E
		a	b	c	d	e	f	g	h

a	
Style	
Code	**Description**
P	Plastic latch
M	Metal latch

b	
Power Module Type (1) (2)	
Code	**Description**
D	Incandescent module, screw termination
N	Integrated LED module, screw termination
Q	Integrated LED module, spring-clamp termination

c	
Voltage	
Code	**Description**
0	No bulb (3)
1	6V AC/DC (3)
2	12V AC/DC (3)
3	24V AC/DC
4	48V AC/DC (3)
5	120V AC
7	240V AC (4)

d	
Lamp Color (5)	
Code	**Description**
C	Incandescent
R	Red LED
G	Green LED
W	White LED

e	
Contact Block Termination Style	
Code	**Description**
X	Screw termination
Q	Spring-clamp termination

f	
N.O. (Normally Open) Circuits	
Code	**Description**
0	No contact
1	1 N.O.
2	2 N.O.
3	3 N.O.
4	4 N.O.

g	
N.C. (Normally Closed) Circuits	
Code	**Description**
0	No contact
1	1 N.C.
2	2 N.C.
3	3 N.C.
4	4 N.C.

h	
Specialty Contact Block	
Code	**Description**
Blank	Standard blocks
V	Low-voltage — QuadConnect™
E	N.O. early make
L	N.C. late break
B	N.C. early break
S	N.C. self-monitoring

(1) Four circuits maximum allowable when power module is used. Contact blocks cannot be stacked on power module.
(2) LED modules for use with all illuminated operators. Incandescent module for use with pilot lights, push buttons, and momentary mushroom operators only.
(3) Only available for incandescent module.
(4) Only available for integrated LED module.
(5) For best illuminated results, LED should match lens color. For yellow operator, select a white LED.

Other Back-of-panel Components

Table 24 - Latches

	Description	Pkg. Qty.	Cat. No.
 Cat. No. 800F-ALM	Metal Mounting Latch Zinc-plated, metal die cast mounting latches. Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	10	800F-ALM
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces.	100	800F-ALM-BP
 Cat. No. 800F-ALP	Plastic Mounting Latch Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces.	10	800F-ALP
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces.	100	800F-ALP-BP

Table 25 - Contact Blocks

	Description	Contact Type	Pkg. Qty.	Cat. No.
 Cat. No. 800F-X10	Contact Block Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	N.O.	10	800F-X10
		N.C.		800F-X01
		N.O. low-voltage — QuadConnect		800F-X10V
		N.C. low-voltage — QuadConnect		800F-X01V
		N.O.L.M.		800F-X10N (1)
		N.O.E.M.		800F-X10E
		N.O.E.E.M.		800F-X10M (2)
		N.C.L.B.		800F-X01L
		N.C.E.B.		800F-X01B (3)
		Self-Monitoring		800F-X01S (4)
		Dual-circuit of 2 N.O.		800F-X20D (4)
		Dual-circuit of 2 N.C.		800F-X02D (4)
		Dual-circuit of 1 N.O.-1 N.C.		800F-X11D (4)
		N.O. spring-clamp		800F-Q10
		N.C. spring-clamp		800F-Q01
		Ring lug N.O.		800F-R10 (5) (6)
		Ring lug N.C.		800F-R01 (5) (6)
	Note: Sold only in multiples of 100. Order (quantity of) 100 to receive one package of 100 pieces. Latch not included.	N.O.	100	800F-X10-BP
		N.C.		800F-X01-BP
 Cat. No. 800F-BX01	Base Mounted Contact Block Base mounted contact blocks can be used in plastic or metal enclosures. Note: Sold only in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	N.O.	10	800F-BX10
		N.C.		800F-BX01

(1) For use with Cat. No. 800FP-CB_ and Cat. No. 800FP-CC_ operators.
(2) For use with Cat. No. 800FP-CC_ operators.
(3) Only for use with 4-position selector switch, 4-position toggle switch, or 3-position push-pull operator.
(4) Cannot stack.
(5) Cannot be used in a composite catalog number.
(6) Replacement screws are available (Cat. No. 800F-ARS1

Table 26 - Power Modules

	Description	Voltage	Pkg. Qty.	Cat. No.
 Cat. No. 800F-D3C	Incandescent Module For use with pilot lights, push buttons, and momentary mushroom operators. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	No bulb	10	800F-D0C
		6V AC/DC		800F-D1C
		12V AC/DC		800F-D2C
		24V AC/DC		800F-D3C
		48V AC/DC		800F-D4C
		120V AC/DC		800F-D5C

Table 26 - Power Modules (Continued)

	Description	Voltage	Pkg. Qty.	Cat. No.
 Cat. No. 800F-N3G	Integrated LED Module For use with all illuminated devices. For best results, LED should match lens color. For amber, yellow, and blue operators use white LED. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	24...120V AC/DC	10	800F-NU*x* (1) (2)
		24V AC/DC		800F-N3*x* (1)
		120V AC		800F-N5*x* (1)
		240V AC		800F-N7*x* (1)
		24V AC/DC spring-clamp		800F-Q3*x* (1)
		120V AC spring-clamp		800F-Q5*x* (1)
		240V AC spring-clamp		800F-Q7*x* (1)
		24V AC/DC ring lug		800F-R3*x* (1) (2) (3)
 Cat. No. 800F-BN3R	Base Mounted Integrated LED Module Base mounted modules can be used in plastic or metal enclosures. For best illumination results, LED should match lens color. Note: Sold in multiples of 10. Order (quantity of) 10 to receive one package of 10 pieces. Latch not included.	24V AC/DC	10	800F-BN3*x* (1)
		120V AC		800F-BN5*x* (1)
		240V AC		800F-BN7*x* (1)

(1) To complete the cat. no., replace the *x* with one of the following letters for the desired color: R = Red, G = Green, W = White.
(2) Cannot be used in a composite catalog number.
(3) Replacement screws are available (Cat. No. 800F-ARS1)

Physical Attributes

Number of poles

Single-pole

Terminals

Standard

Type

UL 1077 Industrial miniature circuit breaker - supplementary protector

Performance Ratings

Amperage Rating

2 A

Circuit protection

C curve

Frequency rating

50-60 Hz

Interrupt rating

15 kAIC

Trip Type

5-10X /n

Voltage rating

277V

Miscellaneous

Application

Suitable for applications where medium levels of inrush current are expected

Quantity

38

Special features

Single package

Resources

Brochures

Industrial miniature circuit breakers UL 489

Catalogs

Eaton's Volume 4—Circuit Protection

Product specification guides

Eaton Specification Sheet - FAZ-C2/1-SP

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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 28/11/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 026 **Referencing** 283100
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Edwards

Descriptions / comments

Fire Alarm System
-- annunciator

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

[X]	REVIEWED
[ ]	REVIEWED AS NOTED
[ ]	REVISE & RESUBMIT

DC SD NO. ELE-026
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE Dec 04 2023

DILLON CONSULTING

LIFE SAFETY & INCIDENT MANAGEMENT

R-Series Remote Annunciators

RLCD, RLCD-C, RLED, RLED-C, RLED24, GCI



FM APPROVED FDNY COA 6020 COA 6087 7120-1657: 0254 S3424

Overview

EDWARDS R-Series Annunciators are high-performance remote annunciators that provide status indication and common controls for compatible fire alarm control panels, including iO-Series small analog fire alarm systems. This family of annunciators offers LCD or LED annunciation. Models are available with and without common controls.

There are three R-Series annunciator models, plus an LED-based expander. Up to two expanders can be connected to any annunciator. The expander includes 24 pairs of LEDs that extend the capabilities of any of the annunciators.

All annunciator models include status LEDs and an internal buzzer. Two models have an LCD text display, and one has 16 pairs of LEDs for zone annunciation. LCD models feature a large back-lit, four by twenty character per line, super-twist liquid crystal display.

R-Series annunciators and expanders are mounted on a standard 4-inch square electrical box, using the included mounting ring. They can also be surface mounted in locking steel enclosures. Three different enclosures are available.

A keyswitch and graphic annunciator interface is available for R-Series annunciator applications. The keyswitch enables or disables common controls. The graphic annunciator interface cards supports 32 LEDs and 16 switches on the graphic panel display.

Features

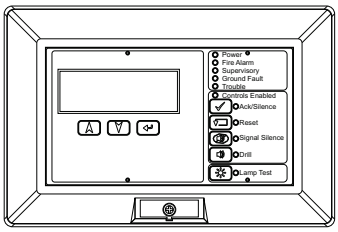
- LCD models feature large 4 x 20 character backlit LCD display
- LED models provide 16 pairs of LEDs for zone annunciation
- Available expander extends capability with 24 pairs of LEDs
- Up to two expanders may be wired to each annunciator
- Status LEDs and internal buzzer standard on all models
- Common controls available for LED and LCD display models
- Available keyswitch for disabling common controls
- Standard 4-inch square electrical box mounting
- Class B or Class A RS485 wiring standard
- One-, two-, and three-position enclosures available
- Graphic Annunciator interface, includes common control, indicators and 32 LEDS
- No programing required, set the address and unit receives all information from panel

DATA SHEET E85005-0128
Not to be used for installation purposes. Issue 1.1

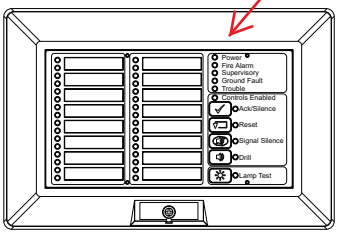
Application

R-Series annunciators communicate with the FACP on the RS-485 data riser. This can be configured for Class A or Class B communication. Annunciators do not provide ground fault isolation.

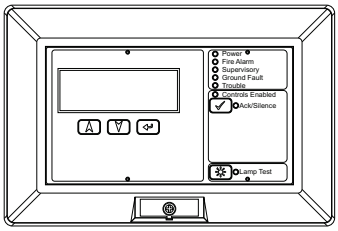
These annunciators are stand-alone units that can be powered by the FACP or by an approved power supply.



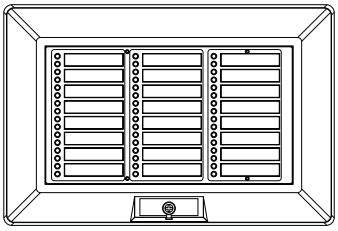
RLCD-C



RLED-C



RLCD


RLED24

Features by model	RLCD	RLCD-C	RLED-C	RLED24
Reset	✓	✓	✓	-
Ack/Silence	✓	✓	✓	-
Fire Alarm	✓	✓	✓	-
Supervisory	✓	✓	✓	-
Ground Fault	✓	✓	✓	-
Trouble	✓	✓	✓	-
Controls Enabled	✓	✓	✓	-
Ack/Silence	✓	✓	✓	-
Reset		✓	✓	-
Signal Silence		✓	✓	-
Drill		✓	✓	-
Lamp Test	✓	✓	✓	-
LCD Display	✓	✓	-	-
Zone Active LEDs	-	-	16 *	24 **
Zone Trouble LEDs	-	-	16	24

** zones 13-16 may be selected as Supervisory on IO64*
*** zones 13-16 and 29-32 may be selected as Supervisory on iO1000*

Graphic Annunciator Interface

The GCI Graphic Annunciator Driver is an interface card that connects the fire alarm control panel to the display panel of an LED-based graphic annunciator.

The annunciator card supports 32 LEDs and 16 switches on the graphic panel display. It includes status LEDs and an internal buzzer.

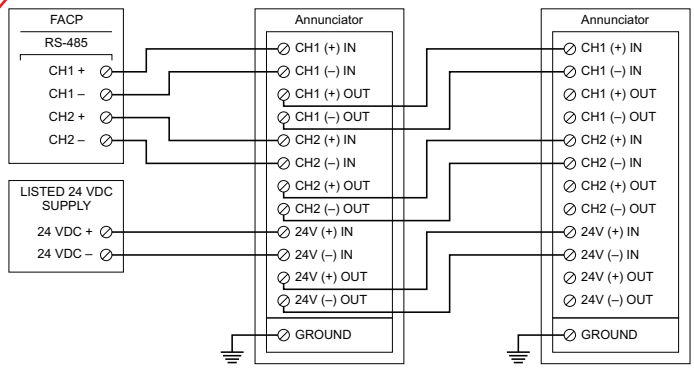
The graphic interface is supplied with snap track mounting. It is attached to a plastic mounting rail that requires two EIA panels.

The annunciator communicates with the FACP on the RS-485 data riser. This can be configured for Class A or Class B communication. The annunciator does not provide ground fault isolation. It is a stand-alone unit that can be powered by the FACP or by an approved power supply.

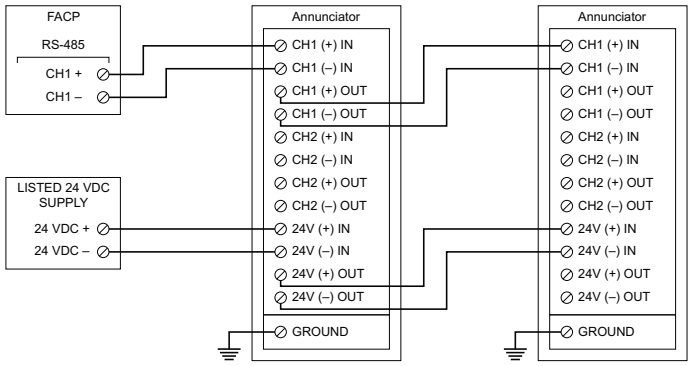
Graphic Annunciator Interface Specifications	
Alarm current	146 mA at 24 Vdc (with 36 LEDs ON)
Standby current	36 mA at 24 Vdc (with no LEDs ON)
Maximum current	10 mA per LED

Annunciator Wiring

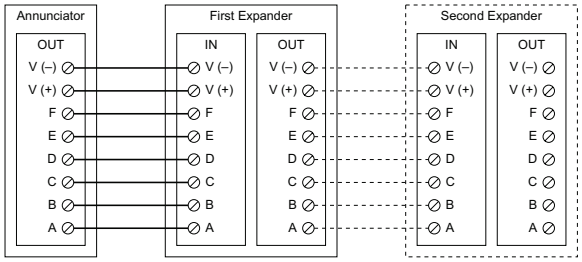
Annunciator, Class A



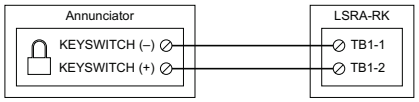
Annunciator, Class B



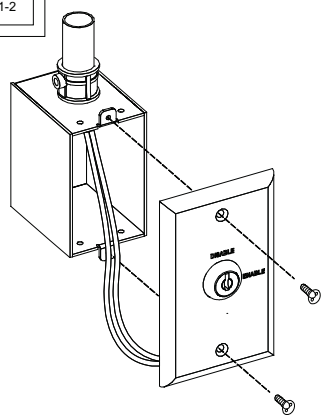
Expander



Remote Keyswitch

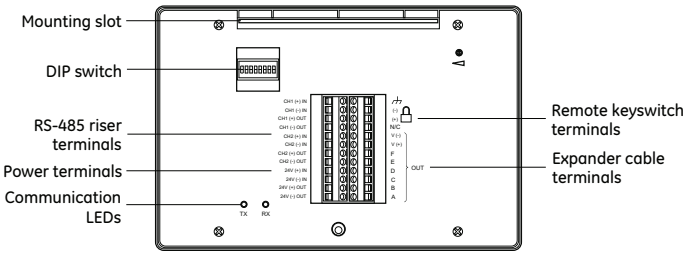


Keyswitch Specifications	
Maximum voltage	5 Vdc
Maximum current	200 mA
Mounting	2-1/2 in (64 mm) deep 1-gang box
Termination	Screw terminals
Maximum wire size	12 AWG (2.5 mm sq)
Contact configuration	Normally open

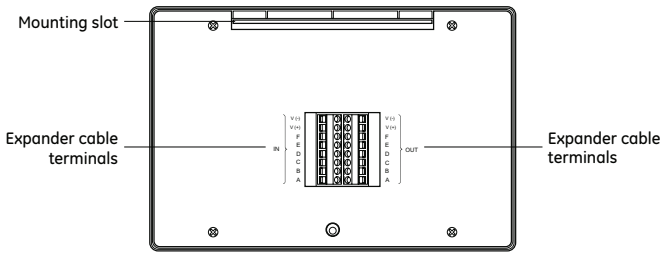


Annunciator Connections

Annunciator

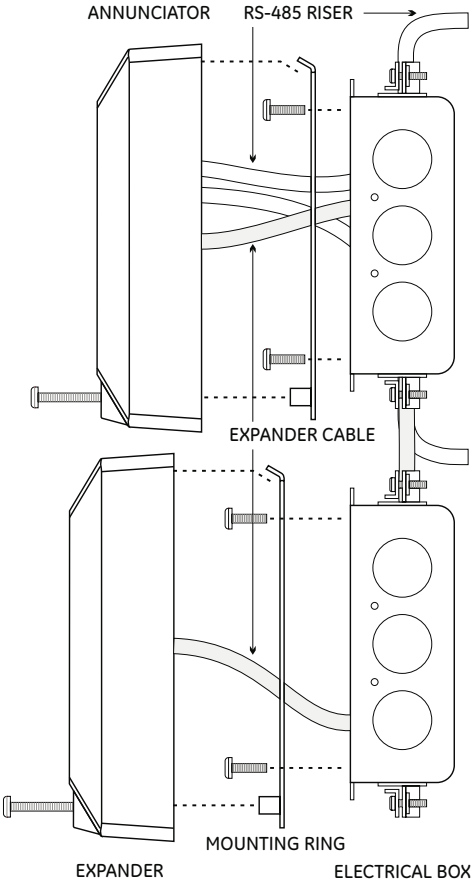


Expander



DIP switch settings	
Switch	**Description and values**
S1 to S5 Network address	The annunciator network address (in binary). The factory setting is for address 2. Examples: 10000 = 1 01000 = 2 11000 = 3 00100 = 4
S6 Network baud rate	OFF = 9600 baud (factory default setting) ON = 38,400 baud
S7 to S8	Not used

Annunciator Mounting

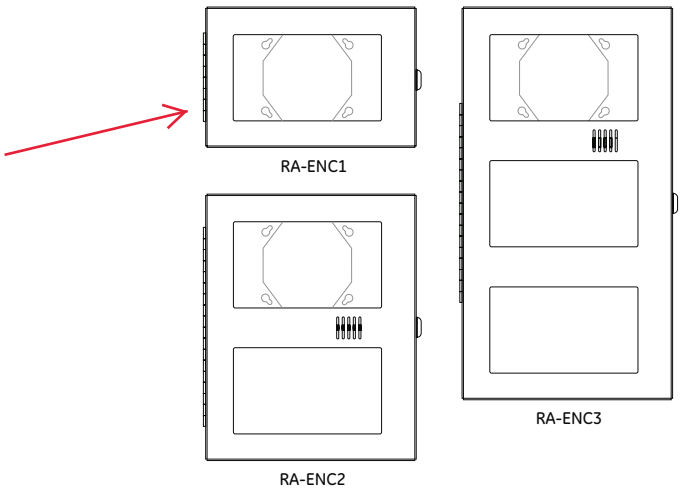


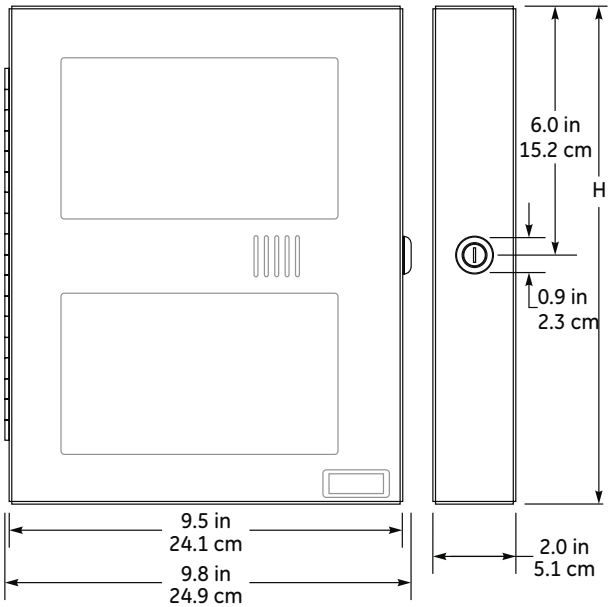
Annunciator Enclosures

The RA Remote Annunciator Enclosures provide secure, surface mounted protection for annunciators and extenders. Each consists of a back plate, hinged cover, and key lock.

The enclosures are 16-gauge welded steel with a white, painted finish. Each enclosure includes a security lock and two keys. The two- and three-position enclosures have wiring channels for correct routing of interconnections.

The enclosures attach to a standard electrical box, and provide a mounting lip that takes the place of the integral mounting ring supplied with the annunciators and expanders.





Dimensions (H x W x D)	
RA-ENC1	6.3 x 9.8 x 2.0 in (16.0 x 24.9 x 5.1 cm)
RA-ENC2	12.0 x 9.8 x 2.0 in (30.5 x 24.9 x 5.1 cm)
RA-ENC3	17.7 x 9.8 x 2.0 in (45.0 x 24.9 x 5.1 cm)

Note: Allow approximately 2 inches (50 cm) clearance on both sides of the enclosure, to permit inserting and removing the key, and opening the door through 90 degrees.

EDWARDS

LIFE SAFETY & INCIDENT MANAGEMENT

Contact us

Phone: 800-655-4497 (Option 4)
Email: edwards.fire@carrier.com
Website: edwardsfiresafety.com

8985 Town Center Pkwy
Bradenton, FL 34202

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Specifications

	RLCD-C	RLCD	RLED-C	RLED24
Operating voltage	24 VDC, continuous.			
Standby current	99 mA	98 mA	28 mA	6 mA
Alarm current	115 mA	113 mA	62 mA	34 mA
RS-485 communications	Class A or Class B, 9600 baud			
Data wiring	18 to 14 AWG (1.0 to 2.5 sq mm) twisted pair (6 twists per foot minimum). Maximum wire run is 4,000 ft. (1,219 m)			
Remote key switch circuit	5 VDC at 1 mA, power-limited, unsupervised			
Ground fault impedance	0			
Power wiring	18 to 14 AWG (1.0 to 2.5 sq. mm)			
Display area	4 lines of 20 characters each			
Dimensions (H x W x D)	5-5/8 x 8-1/2 x 1-1/2 in. (14.3 x 21.4 x 3.8 cm)			
Mounting	North American 4-inch square electrical box or listed enclosure			
Agency Listing	UL, ULC			
Operating environment	Temperature: 32 to 120°F (0 to 49°C) Humidity: 0 to 93% RH, noncondensing at 90°F (32°C)			

Ordering Information

Part	Description
Remote Annunciators	
RLCD	LCD text annunciator without common controls. English.
RLCD-R	LCD text annunciator without common controls. English. Red.
RLCDF	LCD text annunciator without common controls. French.
RLCD-C	LCD text annunciator with common controls. English.
RLCD-CR	LCD text annunciator with common controls. English. Red.
RLCD-CF	LCD text annunciator with common controls. French.
RLED-C	16-pair LED zone annunciator with common controls. English.
RLED-CR	16-pair LED zone annunciator with common controls. English. Red.
RLED-CF	16-pair LED zone annunciator with common controls. French.
Remote Expanders	
RLED24	24-pair LED zone expander with expander cable and zone card insert.
RLED24R	24-pair LED zone expander with expander cable and zone card insert. Red.
Enclosures	
RA-ENC1	One-position enclosure for Remote Annunciator.
RA-ENC2	Two-position enclosure for Remote Annunciator and one Remote Expander, including one interconnection cable.
RA-ENC3	Three-position enclosure for Remote Annunciator and two Remote Expanders, including two interconnection cables.
LSRA-SB	Surface Mount Box - for single R Series annunciator.
Graphic Annunciator Drivers	
GCI	Graphic Annunciator Driver, provides outputs for common indicators and 32 alarm/supv zones as well as inputs for common switches. Provided with a snap track for mounting in custom graphic enclosures.
Accessories	
RKEY	Remote key switch on plate for enabling or disabling common controls (Lock/Unlock).
27193-16	Electrical box, surface mount, white, single-gang, for RKEY.

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 06/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 027 **Referencing** 281600
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : WBOX

Descriptions / comments

Intrusion system
special garage door contact
quantity: 7 (1 for each non-standard garage door)

Comments of Professionnal :

- This was ELE-020-R2 last time? Please confirm proper document name

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-027
PROJECT NO. 19-9543(WTS)
BY K.Speidel
DATE 2023-Dec-06

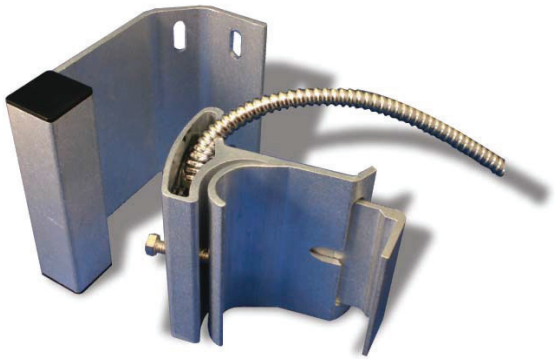
DILLON CONSULTING

SPEC SHEET

W BOX TECHNOLOGIES

HIGH IMPACT MAGNETIC CONTACTS

0E-DC4811
TRACK MOUNT
MAGNETIC CONTACT



A high impact magnetic lock that removes the chance for a loss of product performance typically caused by adverse stress due to building movement, sudden impacts or temperature changes.

SPECIFICATIONS

Magnet Length	3.5”
Magnet Depth	1.7”
Magnet Height	3.2”
Switch Length	2.6”
Switch Depth	1.8”
Switch Height	3”
Wire Leads	27" Armored Cable
Max. Contact Rating	30VDC, 0.2A, 5W
Loop Type	Closed
Reed Form	N/O
Closed Gap	2.5” (65mm)
Departure Gap	2.65” (67mm)
Max. Initial Contact Resistance	0.20 Ω

PART #: 0E-DC4811

UPC: 811914023470

Crush resistant

Durable magnet

Simple installation

Product Certification:

RoHS COMPLIANT

W BOX TECHNOLOGIES

FOR MORE INFORMATION,
CONTACT YOUR ADI SALES PERSON.

wboxtech.com

Prefabricated building

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 08/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 028 **Referencing** 265000
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : LITHONIA LIGHTING

Descriptions / comments

Lighting type G for office

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-028

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2023-12-12

DILLON CONSULTING

LITHONIA LIGHTING®

DIGITAL NAVIGATION

Ordering Tree nLight Platform Sensor Switch JOT Photometrics Performance Data Drawings

Catalog Number	EPANL 2x2 4800lm 80cri 40k-mini zt 120
Notes	
Type	G

EPANL LED

1'x4', 2'x2', and 2'x4'



FEATURES & SPECIFICATIONS

INTENDED USE — The EPANL Series LED Edge-Lit Flat Panel provides a fully luminous appearance across the face of the lens. This provides a soft, glare-free solution that is visually comfortable within the space. Suitable for many lighting applications including schools, offices and other commercial spaces, retail, convenience stores, hospitals and healthcare facilities. **Certain airborne contaminants can diminish the integrity of acrylic and/or polycarbonate.** Click here for Acrylic-Polycarbonate Compatibility table for suitable uses.

CONSTRUCTION — This edgelit platform was built to last with an aluminum frame for strength and durability, the seamless frame prevents light leak in the corners. The PMMA light guide plate and lens resists yellowing and transmits light with superior efficacy. The satin white lens provides excellent shielding and fully luminous appearance. EPANL's low-profile design provides increased installation flexibility especially in restricted plenum spaces. The back plate includes integral T-bar clips for installation into 15/16" or 9/16" T-grid ceilings. Fixture may be recessed, suspended, surface box mounted or mounted in a hard-ceiling see accessories section for more information. Fixture may be mounted and wired in continuous rows.

Integrated Sensor (nLight Wired Networking): This sensor is nLight-enabled, meaning it has the ability to communicate over an nLight network. When wired, using CAT-5 cabling, with other nLight-enabled sensors, power packs, or WallPods, an nLight control zone is created. Once linked to a Gateway, directly or via a Bridge, the zone becomes capable of remote status monitoring and control via SensorView software.

Integrated Smart Sensor (nLight Air Wireless Platform): The RES7 sensor is nLight AIR enabled, meaning it has the ability to communicate over the wireless nLight control platform. It is available with an automatic dimming photocell, and either a digital PIR or a microphonics (PDT) dual technology occupancy sensor. It pairs to other luminaires and wall switches through our mobile app, CL**AIR**ITY+, which allows for simple sensor adjustment.

Integrated Wireless Sensor (single room control): Sensor Switch VERTEX JOT or JOTVTX15 luminaire-embedded occupancy and ambient light sensor allows the luminaire to power off when the space is unoccupied or when enough ambient light is entering the space. See page 7 for more details on the integrated wireless sensor.

ELECTRICAL — Long-life LEDs, coupled with a high-efficiency driver, provide superior illumination for extended service life. See page 3 for detailed lumen maintenance information. 0-10V dimming driver, dims to 1% or 10% and contains non-isolated dimming leads.

LISTINGS — CSA Certified to meet US and Canadian standards. Tested to meet UL1598. Intended for indoor use only. Product is not to be stored in non-climate controlled spaces.

DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Damp location listed. IC rated. IP5X rated. Long nomenclature, configurable product is rated for NSF/ANSI Standard 2 - Light Fixture for Splash Zone and Non Food Zone. Tested in accordance with ISO 14644-1; suitable for ISO Class 5–9 positive and negative pressure clean rooms. Suitable for ambient temperatures from 32°F (0°C) to 77°F (25°C).

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Dimensions

	1x4	2x2	2x4
Length	47.72"	23.70"	47.72"
Width	11.85"	23.70"	23.70"
Depth	2.19"	2.19"	2.19"
Weight	13.9 lbs	7.4 lbs	15.1 lbs

* Base configurations; options may add weight

Embed nLight controls today. Prepare for tomorrow.

Now

- User-friendly install
- Enhanced energy savings
- Code compliance

Tomorrow

- Scalability
- Space configuration
- Future-ready

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

EPANL LED Flat Panel

A+ Capable options indicated by this color background.

ORDERING INFORMATION

Example: EPANL 2X4 4000LM 80CRI 35K MIN1 MVOLT E10WCP NLTAIR2 RIO

Series	Width and Length	Lumens		CRI	Color Temperature	Minimum Dimming Level ‡
		Standard Lumens:	High Efficiency Lumens:			
EPANL LED Flat Panel	1x4 1'x4'	1500LM 1500 Lumens	1500LMHE 1500 Lumens	80CRI 80 CRI	30K 3000K	MIN10 Dims to 10% ‡
		3000LM 3000 Lumens	3000LMHE 3000 Lumens		35K 3500K	MIN1 Dims to 1%
		4000LM 4000 Lumens	4000LMHE 4000 Lumens		40K 4000K	
		4800LM 4800 Lumens	4800LMHE 4800 Lumens		50K 5000K	
		6000LM 6000 Lumens	6000LMHE 6000 Lumens			
	2x2 2'x2'	2000LM 2000 Lumens	2000LMHE 2000 Lumens			
		3400LM 3400 Lumens	3400LMHE 3400 Lumens			
		4000LM 4000 Lumens	4000LMHE 4000 Lumens			
		4800LM 4800 Lumens	4800LMHE 4800 Lumens			
	2x4 2'x4'	3000LM 3000 Lumens	3000LMHE 3000 Lumens			
		4000LM 4000 Lumens	4000LMHE 4000 Lumens			
		4800LM 4800 Lumens	4800LMHE 4800 Lumens			
		5400LM 5400 Lumens	5400LMHE 5400 Lumens			
		6000LM 6000 Lumens	6000LMHE 6000 Lumens			
		6800LM 6800 Lumens	6800LMHE 6800 Lumens			
		7200LM 7200 Lumens	7200LMHE 7200 Lumens			

Dimming ‡	Voltage	Step Level Dimming	Emergency Option
ZT Generic 0-10V Dimming	MVOLT 120-277V	(Blank) None	E10WCP EM Self-Diagnostic battery pack, 10W Constant Power, Certified in CA Title 20 MAEDBS ‡
EZT eldoLED 0-10V Dimming	120 120V	SLD Step Level Dimming ‡	GTD Generator Transfer Device ‡
DALI eldoLED DALI	277 277V		EMG for use with NLIGHT or NLTAIR2 on generator supply EM power ‡
	347 347V ‡		

Control Options

Control Input

nLight Wired:

NLIGHT	nLight enabled, no constant lumen management
CL80 NLIGHT	nLight enabled, constant lumen output 80%

nLight Wireless:

NLTAIR2	nLight AIR Generation 2 enabled ‡

Control

nLight Wired: ‡

(blank)	no control

nLight Wireless:

RIO	nLight AIR Radio module without sensor ‡
RES7	nLight AIR control with PIR integral occupancy sensor and automatic dimming photocell ‡
RES7PDT	nLight AIR control with PDT dual technology integral occupancy sensor and automatic dimming photocell ‡

Individual Control

JOT	Wireless room control with "Just One Touch" pairing ‡
JOTVTX15	Wireless occupancy sensor with "Just One Touch" pairing ‡

Options

GLR	Fast-blowing fuse ‡
GMF	Slow-blowing fuse ‡
PWS1836	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit
PWS1846	6' pre-wire, 3/8" diameter, 18 gauge, 2 circuit
PWS1846 PWSLV	Two cables: one 6' pre-wire, 3/8" diameter, 18 gauge, 2 circuits; one 6' pre-wire, 3/8" diameter, 18 gauge ‡
PWS1856LV	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit w/low voltage wires ‡
CP	Chicago plenum ‡
NPLT	Narrow Pallet
BDP	Factory Installed Ballast Disconnect Plug
RRL_	RELOC®-ready luminaire ‡

NOTE: ‡ indicates option value has ordering restrictions. Please reference the Option Value Ordering Restictions chart on the next page. Options are sorted alphanumerically.

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‡ Option Value Ordering Restrictions	
Option Value	**Restriction**
347	Not available with SLD, E10WCP, or GTD options.
Dimming	If Step Level Dimming (SLD) or NLIGHT or NLTAIR2 is specified, leave this section blank.
CP	Not available with nLight wired (NLIGHT), nLight wireless (NLTAIR2). Not available with PWS1836, PWS1846, PWS1856LV, or PWS1846 PWSLV.
E10WCP	Refer to Emergency Battery Estimated Lumen section for lumen estimation. Test Switch must be remote mounted or installed in an adjacent ceiling tile. When using pre-wire option, use PWS1846 or PWS1846 PWSLV.
EMG	Requires a connection to existing NLIGHT or NLTAIR2 network. Power is provided from separate nLight enabled fixture. When EMG is combined with NLTAIR2 see UL924 Sequence of Operation Chart on page 4.
GLR, GMF	Must specify voltage. 120 or 277, with GLR and GMF fusing.
GTD	Not available with JOT, JOTVTX15, sensor options or emergency battery options. Must specify voltage. Requires BSE labeling, voltage specific. Consult factory for options. Example: GTD BSE10.
JOT, JOTVTX15	Not available with NLIGHT, DALI, SLD, GTD, EMG, or NLTAIR2 options.
MIN10	Not available with EZT, NLIGHT or DALI.
Minimum Dimming Level	If Step Level Dimming (SLD) is specified, leave this section blank.
NLTAIR2	Only available with MIN1 minimum dimming level option.
PWS1846 PWSLV	Not available with GTD, nLight wired, nLight wireless, NLIGHT or NLTAIR2.
PWS1856LV	Not available with nLight wired, nLight wireless, NLIGHT, or NLTAIR2.
RES7, RES7PDT, RIO	See UL924 Sequence of Operation chart on page 4. Can be used as a normal power sensing device for nLight Air devices and luminaries with EM options.
RRL_	For ordering logic consult RRL_2013.
SLD	Not available with with any nLight Interface, Control options, or GTD. When using prewire option use PWS1846.

Tunable White (Select SKUs Only)

Available SKUs:

*2735H0 EPANL 2X2 TUWH PROR 4800LM 80CRI NLT
*2735H9 EPANL 2X2 TUWH PROR 4800LM 80CRI NLT PWS1836
*2735HJ EPANL 2X2 TUWH PROR 4800LM 80CRI NLT E10WCP
*2735HN EPANL 2X2 TUWH PROR 4800LM 80CRI NLT E10WCP PWS1846

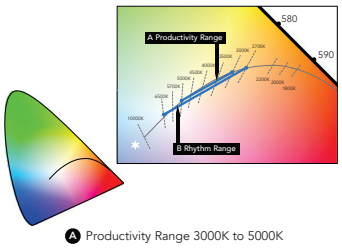
Operating Performance:

Nomenclature	CCT	Lumens	Efficacy	CRI
EPANL 2X2 TUWH PROR 4800LM 80CRI NLT @ 3000K	3105	4527.53	98.81	80.78
EPANL 2X2 TUWH PROR 4800LM 80CRI NLT @ 4000K	3974	4920.24	127.2	83.85
EPANL 2X2 TUWH PROR 4800LM 80CRI NLT @ 5000K	4925	5004.18	123.41	82.89

Mainstream Dynamic Tunable White with nTune Technology: Tunable white nTune™ is an all-digital light color temperature control within an nLight enabled luminaire. This brings tunable white lighting control into the mainstream with repeatable, consistent results in an economical luminaire form and system already familiar to schools. Designers and facility operators are granted the freedom to tie scenes to specific activities or to complement colors or materials within a visual environment. nTune™ allows color temperature settings through the Productivity Range of 3000K-5000K. Refer to the Programming User's Guide for instructions on customizing to your application with SensorView.

Tunable White GPHD

- **Gamut**: One dimensional Warm-Cool
- **Path**: Direct 3000K to 5000K (Productivity Range)
- **Handle**: Two Natural Language Handles: Intensity and CCT
- **Data**: nLight with nTune technology for both handles of control



A Productivity Range 3000K to 5000K

Lumen Maintenance:

EPANL	Reported Lumen Maintenance	Forecasted Lumen Maintenance
SE LEDs	L90 @ 41k Hrs / L80 @ >54k Hrs / L70 @>54k Hrs	L90 @ 41k Hrs / L80 @ 84k Hrs / L70 @ 134k Hrs
HE LEDs	L90 @ 44k Hrs / L80 @ >54k Hrs / L70 @ >54k Hrs	L90 @ 44k Hrs / L80 @ 93k Hrs / L70 @ 148k Hrs

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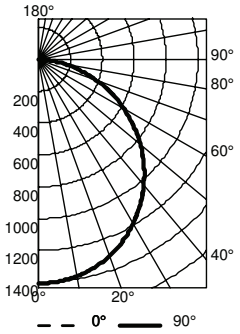
Performance Data					
Model No.	**DLC Classification**	**Lumens**	**Watts**	**LPW**	**DLC Product Id**
EPANL 2X2 4000LMHE 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4117	33	125	
EPANL 2X2 4000LMHE 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4117	33	125	
EPANL 2X2 4000LMHE 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4211	33	128	
EPANL 2X2 4000LMHE 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4211	33	128	
EPANL 2X2 4800LM 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4558	45	102	
EPANL 2X2 4800LM 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4558	45	102	
EPANL 2X2 4800LM 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4729	45	106	
EPANL 2X2 4800LM 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4729	45	106	
EPANL 2X2 4800LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4843	45	109	PS2AC19A
EPANL 2X2 4800LM 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4843	45	109	
EPANL 2X2 4800LM 80CRI 50K [BLANK, ZT, EZT, NLIGHT] 347 [ALL OPTIONS]	Not Listed	4886	45	110	
EPANL 2X2 4800LM 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4886	45	110	P89SURCD
EPANL 2X2 4800LM 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4886	45	110	
EPANL 2X2 4800LMHE 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4420	36	121	
EPANL 2X2 4800LMHE 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4420	36	121	
EPANL 2X2 4800LMHE 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4539	36	125	
EPANL 2X2 4800LMHE 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4539	36	125	
EPANL 2X2 4800LMHE 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4697	36	129	
EPANL 2X2 4800LMHE 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4697	36	129	
EPANL 2X2 4800LMHE 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4804	36	132	
EPANL 2X2 4800LMHE 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4804	36	132	
EPANL 2X4 3000LM 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	3015	29	106	
EPANL 2X4 3000LM 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3015	29	106	
EPANL 2X4 3000LM 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3141	29	110	P4PIGUFW
EPANL 2X4 3000LM 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3141	29	110	
EPANL 2X4 3000LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3266	29	115	PSPB7FBG
EPANL 2X4 3000LM 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3266	29	115	
EPANL 2X4 3000LM 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3392	29	119	PSL0A6G7
EPANL 2X4 3000LM 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3392	29	119	
EPANL 2X4 3000LMHE 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	2943	23	129	PNSQ2LMI
EPANL 2X4 3000LMHE 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	2943	23	129	
EPANL 2X4 3000LMHE 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	2986	23	131	P84A41CZ
EPANL 2X4 3000LMHE 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	2986	23	131	
EPANL 2X4 3000LMHE 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3071	23	135	P0S68XSR
EPANL 2X4 3000LMHE 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3071	23	135	
EPANL 2X4 3000LMHE 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3114	23	137	PW2SY5X9
EPANL 2X4 3000LMHE 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3114	23	137	
EPANL 2X4 3760LMHE 80CRI 40K MIN10 ZT MVOLT NACV	Standard	3984	27	147	PQMB5PAR
EPANL 2X4 4000LM 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	3914	38	104	
EPANL 2X4 4000LM 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3914	38	104	
EPANL 2X4 4000LM 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4077	38	108	PG2MH0ZE
EPANL 2X4 4000LM 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4077	38	108	
EPANL 2X4 4000LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4240	38	113	PNKUCIIA
EPANL 2X4 4000LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] 347 [ALL OPTIONS]	Not Listed	4240	38	113	
EPANL 2X4 4000LM 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4240	38	113	
EPANL 2X4 4000LM 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4403	38	117	P94H4XFG
EPANL 2X4 4000LM 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4403	38	117	
EPANL 2X4 4000LMHE 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3874	31	123	PT1H08CF
EPANL 2X4 4000LMHE 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3874	31	123	
EPANL 2X4 4000LMHE 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	3930	31	125	P8VKRLEE
EPANL 2X4 4000LMHE 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	3930	31	125	
EPANL 2X4 4000LMHE 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4042	31	129	PW2KT9FQ
EPANL 2X4 4000LMHE 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4042	31	129	
EPANL 2X4 4000LMHE 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4098	31	130	PD7JL7CS
EPANL 2X4 4000LMHE 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4098	31	130	
EPANL 2X4 4800LM 80CRI 30K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Not Listed	4817	45	107	
EPANL 2X4 4800LM 80CRI 30K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4817	45	107	
EPANL 2X4 4800LM 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	4998	45	111	P8FFEBQH
EPANL 2X4 4800LM 80CRI 35K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] 347 [ALL OPTIONS]	Not Listed	4998	45	111	
EPANL 2X4 4800LM 80CRI 35K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	4998	45	111	
EPANL 2X4 4800LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	5119	45	113	PL3AU798
EPANL 2X4 4800LM 80CRI 40K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] 347 [ALL OPTIONS]	Not Listed	5119	45	113	
EPANL 2X4 4800LM 80CRI 40K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	5119	45	113	
EPANL 2X4 4800LM 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] [MVOLT, 120, 277] [ALL OPTIONS]	Standard	5164	45	114	P8TD4A4V
EPANL 2X4 4800LM 80CRI 50K [MIN1, MIN10] [BLANK, ZT, EZT, NLIGHT] 347 [ALL OPTIONS]	Not Listed	5164	48	107	
EPANL 2X4 4800LM 80CRI 50K [MVOLT, 120, 277] SLD [ALL OPTIONS]	Not Listed	5164	45	114	

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PHOTOMETRICS

Full Photometric data is available on Lithonia.acuitybrands.com

EPANL 2x2 4000LM 80CRI 40K, 4121 delivered lumens.



CP Summary

	0°	90
0°	1405	1405
5°	1401	1400
15°	1353	1352
25°	1258	1254
35°	1114	1113
45°	940	934
55°	733	727
65°	512	506
75°	280	275
85°	75	73
90	1	1

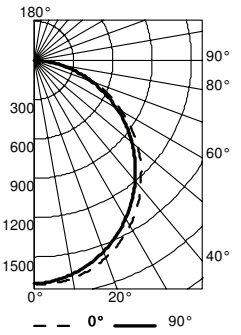
Coefficients of Utilization

	pf			20%								
	pc	80%			70%			50%				
	pw	70%	50%	30%	50%	30%	10%	50%	30%	10%		
RCR	0	119	119	119	116	116	116	111	111	111		
	1	108	103	99	101	97	94	97	94	91		
	2	98	90	83	88	82	76	84	79	74		
	3	90	79	70	77	69	63	74	68	62		
	4	82	70	61	68	60	54	66	59	53		
	5	75	62	53	61	52	46	59	51	46		
	6	69	56	47	55	46	40	53	45	40		
	7	64	51	42	50	41	35	48	41	35		
	8	60	46	38	46	37	32	44	37	31		
	9	56	42	34	42	34	28	41	33	28		
	10	52	39	31	39	31	26	38	31	26		

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	1099	26.7	26.7
0° - 40°	1802	43.7	43.7
0° - 60°	3200	77.6	77.6
0° - 90°	4120	100.0	100.0
90° - 120°	1	0.0	0.0
90° - 130°	1	0.0	0.0
90° - 150°	1	0.0	0.0
90° - 180°	1	0.0	0.0
0° - 180°	4121	100.0	100.0

EPANL 2x4 4800LM 80CRI 40K, 5119 delivered lumens.



CP Summary

	0°	90
0°	1703	1703
5°	1707	1689
15°	1653	1610
25°	1535	1477
35°	1364	1300
45°	1154	1086
55°	903	851
65°	636	593
75°	354	335
85°	103	103
90	3	13

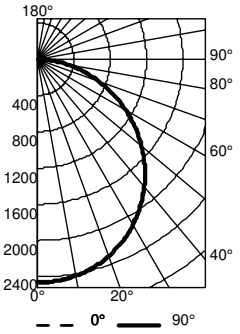
Coefficients of Utilization

	pf			20%								
	pc	80%			70%			50%				
	pw	70%	50%	30%	50%	30%	10%	50%	30%	10%		
RCR	0	119	119	119	116	116	116	111	111	111		
	1	108	103	99	101	97	93	97	94	91		
	2	98	90	83	88	82	76	84	79	74		
	3	90	79	70	77	69	63	74	68	62		
	4	82	70	61	68	60	54	66	59	53		
	5	75	62	53	61	52	46	59	51	46		
	6	69	56	47	55	46	40	53	46	40		
	7	64	51	42	50	41	35	48	41	35		
	8	60	46	38	46	37	32	44	37	31		
	9	56	42	34	42	34	28	41	33	28		
	10	52	39	31	39	31	26	38	31	26		

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	1330	26.7	26.7
0° - 40°	2179	43.8	43.8
0° - 60°	3862	77.6	77.6
0° - 90°	4975	100.0	100.0
90° - 120°	1	0.0	0.0
90° - 130°	1	0.0	0.0
90° - 150°	1	0.0	0.0
90° - 180°	1	0.0	0.0
0° - 180°	4976	100.0	100.0

EPANL 2x4 6800LM 80CRI 40K, 7269 delivered lumens.



CP Summary

	0°	90
0°	2461	2461
5°	2461	2451
15°	2387	2376
25°	2221	2218
35°	1977	1975
45°	1674	1671
55°	1311	1317
65°	911	921
75°	508	521
85°	136	158
90	1	15

Coefficients of Utilization

	pf			20%								
	pc	80%			70%			50%				
	pw	70%	50%	30%	50%	30%	10%	50%	30%	10%		
RCR	0	119	119	119	116	116	116	111	111	111		
	1	108	103	99	101	97	93	97	94	90		
	2	98	90	83	88	81	76	84	79	74		
	3	89	79	70	77	69	63	74	67	62		
	4	82	70	61	68	60	53	66	58	53		
	5	75	62	53	61	52	46	59	51	45		
	6	69	56	47	55	46	40	53	45	40		
	7	64	51	42	50	41	35	48	41	35		
	8	60	46	37	45	37	31	44	37	31		
	9	56	42	34	42	34	28	41	33	28		
	10	52	39	31	38	31	26	37	30	26		

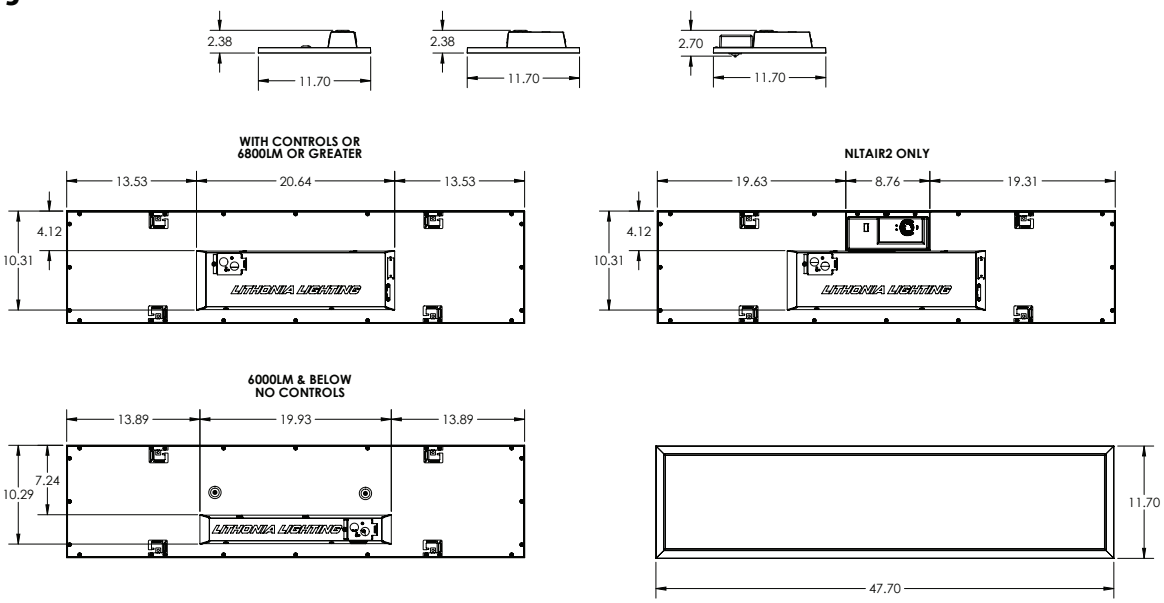
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	1927	26.5	26.5
0° - 40°	3164	43.5	43.5
0° - 60°	5632	77.5	77.5
0° - 90°	7271	100.0	100.0
90° - 180°	0	0.0	0.0
0° - 180°	7271	100.0	100.0

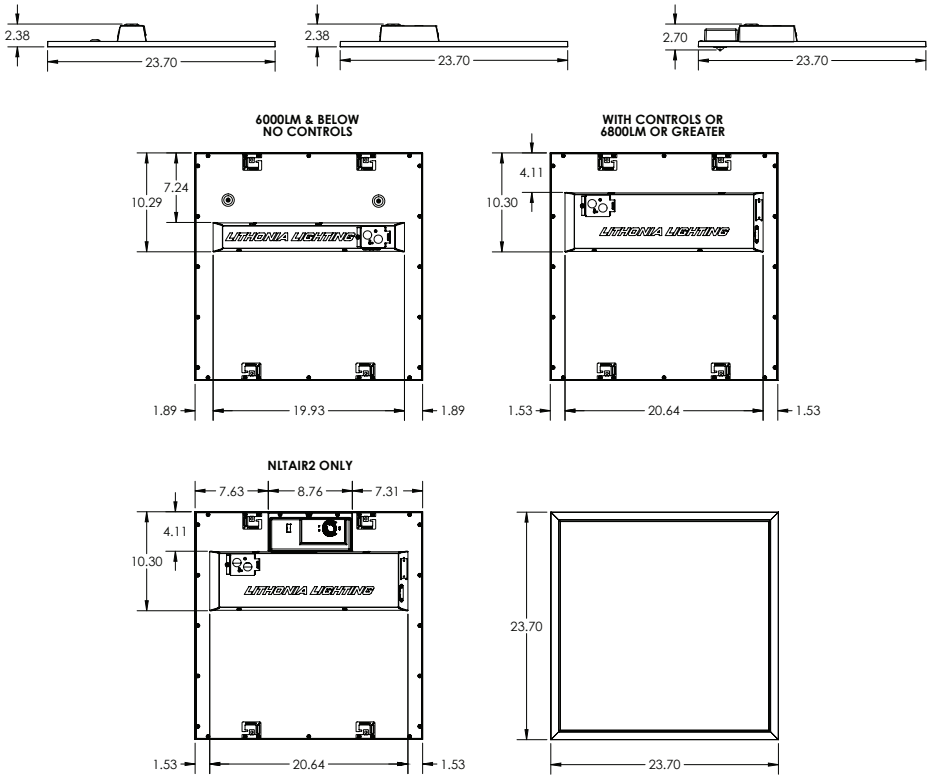
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DIMENSIONS

1X4 Configurations



2X2 Configurations



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REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑎᓱᒪᑦ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 18/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	 	**Shop Drawing no :** ELE- 029 R1 **Referencing** 262417 + 262821
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : Schneider

Descriptions / comments

PANELBOARD : PNL-C (office) and PNL-D (scale house)

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. ELE-029R1

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2023-Dec-18

DILLON CONSULTING

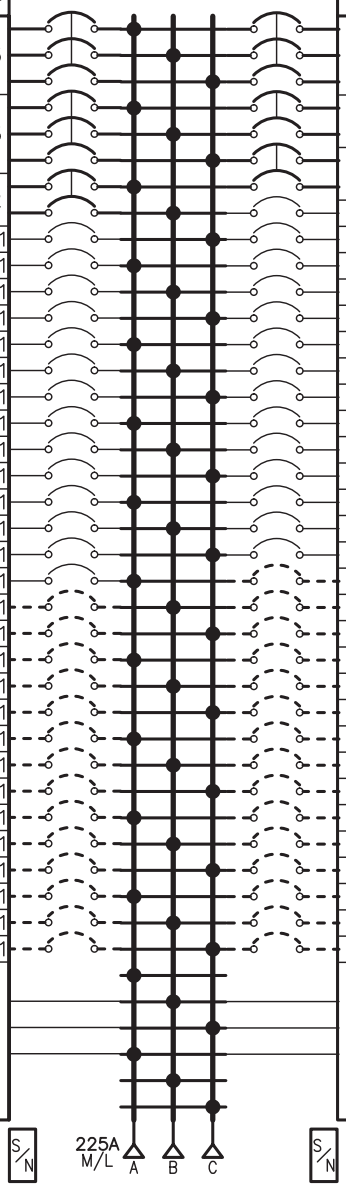
Seq #	Qty	Product Description
1	1	**Designation :** PNL-C **Product Details:** 1 - NQ SPD Panel (INTERIOR)-NQ Panelboard Consisting of 208Y/120V 3Ph 4W 60Hz SCCR: 10kA Fully Rated SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 225A Incoming Conductors: 1 - #6 - 350 kcmil AL Ground Bar Bus: 225A Rated Aluminum: Tin Plated 84 Circuit Interior Type 1 with GasketBox: 50H x 20W x 5.75D Incoming: Bottom Trim: Flush with Door Box Cat No: MH50 Front Cat No: NC50FGSK Ref. Drawing: PBA701A Feeders: 1 - 100A/3P QOB 2 - 30A/3P QOB 2 - 20A/2P QOB 10 - 20A/1P QOB 18 - 15A/1P QOB 29 - 15A/1P QOB Prepared Space 1 - 25A/2P QOB Optional Features: Standard Panel (Box Ahead),SPD Model SBA,Standard Solid Neutral,Standard Ground Bar Branch User Placement 1 - MH50-PANELBOARD ENCLOSURE/BOX TYPE 1 50H 20W 1 - NC50FGSK (TRIM)-Gasketed Trim, Flush w/Door 50"H **Estimated days to ship, excluding transit:** 29 working days after customer release to manufacturer. See Conditions of Sale.

Seq #	Qty	Product Description
2	1	**Designation :** PNL-D **Product Details:** 1 - NQ SPD Panel (INTERIOR)-NQ Panelboard Consisting of 208Y/120V 3Ph 4W 60Hz SCCR: 10kA Fully Rated SPD 240kA per Phase/120kA per Mode SPD line to grd protect w/SPD Surge Counter w/SPD Dry Contacts Main Lug Only: 100A Incoming Conductors: 1 - #6 - 2/0 AWG AL Ground Bar Bus: 225A Rated Aluminum: Tin Plated 42 Circuit Interior Type 1 with GasketBox: 38H x 20W x 5.75D Incoming: Bottom Trim: Flush with Door Box Cat No: MH38 Front Cat No: NC38FGSK Ref. Drawing: PBA701A Feeders: 8 - 20A/1P QOB 22 - 15A/1P QOB Optional Features: Standard Panel (Box Ahead),SPD Model SBA,Standard Solid Neutral,Standard Ground Bar Branch User Placement 1 - MH38-PANELBOARD ENCLOSURE/BOX TYPE 1 38H 20W 1 - NC38FGSK (TRIM)-Gasketed Trim, Flush w/Door 38"H **Estimated days to ship, excluding transit:** 29 working days after customer release to manufacturer. See Conditions of Sale.

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P
1		QOB	100/3
3			
5			
7		QOB	30/3
9			
11			
13		QOB	20/2
15			
17		QOB	20/1
19		QOB	20/1
21		QOB	20/1
23		QOB	20/1
25		QOB	20/1
27		QOB	15/1
29		QOB	15/1
31		QOB	15/1
33		QOB	15/1
35		QOB	15/1
37		QOB	15/1
39		QOB	15/1
41		QOB	15/1
43		QOB	15/1
45	PREPARED SPACE	QOB	15/1
47	PREPARED SPACE	QOB	15/1
49	PREPARED SPACE	QOB	15/1
51	PREPARED SPACE	QOB	15/1
53	PREPARED SPACE	QOB	15/1
55	PREPARED SPACE	QOB	15/1
57	PREPARED SPACE	QOB	15/1
59	PREPARED SPACE	QOB	15/1
61	PREPARED SPACE	QOB	15/1
63	PREPARED SPACE	QOB	15/1
65	PREPARED SPACE	QOB	15/1
67	PREPARED SPACE	QOB	15/1
69	PREPARED SPACE	QOB	15/1
71	PREPARED SPACE	QOB	15/1
	Surge Counter Dry Contacts	SPD 240kA/3	

RATING AMP/P	TYPE	ACCESSORIES	CKT NO
30/3	QOB		2
			4
			6
25/2	QOB		8
			10
20/2	QOB		12
			14
20/1	QOB		16
20/1	QOB		18
20/1	QOB		20
20/1	QOB		22
20/1	QOB		24
15/1	QOB		26
15/1	QOB		28
15/1	QOB		30
15/1	QOB		32
15/1	QOB		34
15/1	QOB		36
15/1	QOB		38
15/1	QOB		40
15/1	QOB		42
15/1	QOB	PREPARED SPACE	44
15/1	QOB	PREPARED SPACE	46
15/1	QOB	PREPARED SPACE	48
15/1	QOB	PREPARED SPACE	50
15/1	QOB	PREPARED SPACE	52
15/1	QOB	PREPARED SPACE	54
15/1	QOB	PREPARED SPACE	56
15/1	QOB	PREPARED SPACE	58
15/1	QOB	PREPARED SPACE	60
15/1	QOB	PREPARED SPACE	62
15/1	QOB	PREPARED SPACE	64
15/1	QOB	PREPARED SPACE	66
15/1	QOB	PREPARED SPACE	68
15/1	QOB	PREPARED SPACE	70
15/1	QOB	PREPARED SPACE	72
	SPD 240kA/3	Surge Counter Dry Contacts	



PHYSICAL DATA

ENCLOSURE Type 1 with Gasket
Flush with Door
FRONT CAT#: NC50FGSK
BOX CAT#: MH50

DIMENSIONS:
50''(1270mm)Hx20"(508mm)Wx5.75''(146mm)D
PBA: 701A

BUSSING: 225A RATED ALUMINUM BUS
Tin Plated

OPTIONAL FEATURES:
BRANCH USER PLACEMENT
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR

(Continued on next page.)

ELECTRICAL DATA

SYSTEM: 208Y/120V 3Ph 4W 60Hz
System Ampacity: 225A
10kA SYMS. SCCR
Fully Rated

MAIN: MAIN LUGS : 225A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – #6 – 350 kcmil

JOB NAME:	AJOUT SUR Q-3459378	EQUIPMENT DESIGNATION:	PNL-C
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	December 14 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-4594207-134254977-01	PG 1 OF 2 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

PHYSICAL DATA CONTINUED

SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

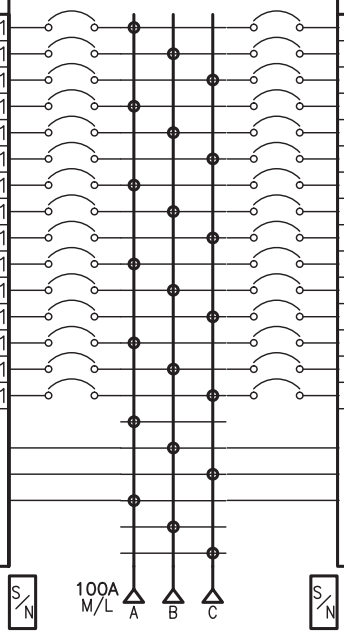
----------BRANCH SUMMATION----------

1 – 100A/3P QOB
2 – 20A/2P QOB
18 – 15A/1P QOB
1 – 25A/2P QOB
2 – 30A/3P QOB
10 – 20A/1P QOB
29 – 15A/1P–PS QOB

JOB NAME:	AJOUT SUR Q-3459378	EQUIPMENT DESIGNATION:	PNL-C
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	December 14 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-4594207-134254977-01	PG 2 OF 2 REV –

REV	DESCRIPTION	BY	DATE	–	----	--	--/--/--
–	----	--	--/--/--	–	----	--	--/--/--

CKT NO	ACCESSORIES	TYPE	RATING AMP/P
1		QOB	20/1
3		QOB	20/1
5		QOB	20/1
7		QOB	20/1
9		QOB	15/1
11		QOB	15/1
13		QOB	15/1
15		QOB	15/1
17		QOB	15/1
19		QOB	15/1
21		QOB	15/1
23		QOB	15/1
25		QOB	15/1
27		QOB	15/1
29		QOB	15/1
	Surge Counter Dry Contacts	SPD 240kA/3	



RATING AMP/P	TYPE	ACCESSORIES	CKT NO
20/1	QOB		2
20/1	QOB		4
20/1	QOB		6
20/1	QOB		8
15/1	QOB		10
15/1	QOB		12
15/1	QOB		14
15/1	QOB		16
15/1	QOB		18
15/1	QOB		20
15/1	QOB		22
15/1	QOB		24
15/1	QOB		26
15/1	QOB		28
15/1	QOB		30
	SPD 240kA/3	Surge Counter Dry Contacts	

PHYSICAL DATA

ENCLOSURE Type 1 with Gasket
Flush with Door
FRONT CAT#: NC38FGSK
BOX CAT#: MH38

DIMENSIONS:
38''(965mm)Hx20"(508mm)Wx5.75''(146mm)D
PBA: 701A

BUSSING: 225A RATED ALUMINUM BUS
Tin Plated

OPTIONAL FEATURES:
BRANCH USER PLACEMENT
ALUMINUM SOLID NEUTRAL
ALUMINUM GROUND BAR
SPD DRY CONTACTS
SPD SURGE COUNTER
SPD PEAK SURGE RATING/PHASE: 240kA
SPD LINE TO GRD PROTECT

ELECTRICAL DATA

SYSTEM: 208Y/120V 3Ph 4W 60Hz
System Ampacity: 100A
10kA SYMS. SCCR
Fully Rated

MAIN: MAIN LUGS : 100A
Bottom FEED
INCOMING CONDUCTORS(S) PER NEC, CEC, NOM:
Wire Bending Space:
Phase Lugs:1 – #6 – 2/0 AWG

----------BRANCH SUMMATION----------

8 – 20A/1P QOB
22 – 15A/1P QOB

JOB NAME:	AJOUT SUR Q-3459378	EQUIPMENT DESIGNATION:	PNL-D
JOB LOCATION:		EQUIPMENT TYPE:	NQ (Circuit Breaker Type) PANEL 1 OF 1
DRAWN BY:	(Q2C)	DRAWING TYPE:	ONE LINE DIAGRAM
ENGR:			SQUARE D by Schneider Electric
DATE:	December 14 2023		
DRAWING STATUS:	QUOTE	DWG# OQ-4594207-134255497-01	PG 1 OF 1 REV –

Prefabricated building

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 08/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 030 **Referencing** nothing
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : NVENT - RAYCHEM

Descriptions / comments

Heating cable and accessories for office

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

[X]	REVIEWED
[ ]	REVIEWED AS NOTED
[ ]	REVISE & RESUBMIT

DC SD NO. ELE-030

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2023-12-12

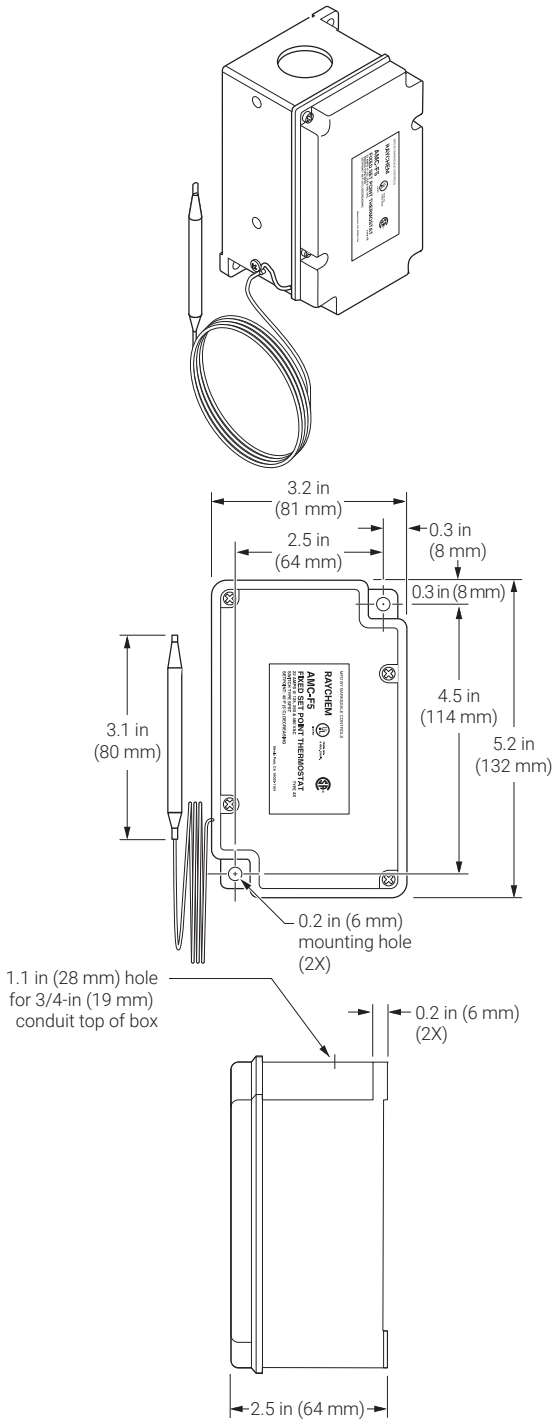
DILLON CONSULTING

AMC-F5

CONNECT AND PROTECT

Fixed set point freeze protection thermostat for nonhazardous locations

PRODUCT OVERVIEW



The nVent RAYCHEM AMC-F5 thermostat is designed to control heat-tracing systems used for freeze protection in nonhazardous locations. The thermostat has a fixed set point of 40°F (5°C) and can be used for ambient-sensing or line-sensing. It can be used to control a single heat-tracing circuit or as a pilot control of a contactor switching multiple heat-tracing circuits.

SPECIFICATIONS

Enclosure	TYPE 4X, UV-resistant thermoplastics
Entries	One 3/4-in (19 mm) through hole
Set point	40°F (5°C) nonadjustable
Sensor exposure limits	–30°F to 140°F (–34°C to 60°C)
Housing exposure limits	–30°F to 140°F (–34°C to 60°C)
Switch	SPST
Electrical rating	22 A at 125 / 250 / 480 Vac
Accuracy	±3°F (±1.7°C)
Deadband	2°F to 12°F (1.1°C to 6.7°C) above actuation temperature
Set point repeatability	±3°F (±1.7°C)
Sensor type	Fluid-filled (silicone) bulb and 2.5 ft (0.8 m) capillary
Sensor material	Tin-plated copper
Connection	Two 14 AWG (2 mm^2) pigtails One ground screw

APPROVALS

XL-TRACE EDGE SELF-REGULATING HEATING CABLE



nVent RAYCHEM XL-Trace Edge self-regulating trace heating cables provide energy efficient and easy to use solutions for pipe freeze protection and flow maintenance of grease waste lines (above and below ground) and fuel lines (above ground).

FEATURES & BENEFITS

Simple to design

Easy to install: cut to length, meter marks, fast RayClic cold connection system

Energy efficient and safe: self-regulating cable, advanced energy saving controls, no cable overheating possible, suitable for plastic pipes

Reliable during long life: 10 year extended product warranty available, maintenance free

SPECIFICATIONS

Supply Voltage 208 – 277 V

Ground Path Type Braid

Min Installation Temperature -18 °C

Table 1/1

Catalog Number	Item Name	Outer Jacket Material	Max Circuit Length	Max Continuous Exposure Temperature, Power Off
2000002608	5XLE2-CR	Modified Polyolefin	178 m	85 °C
2000002610	8XLE2-CR	Modified Polyolefin	138 m	85 °C
2000002612	5XLE2-CT	Fluoropolymer	178 m	85 °C

Catalog Number	Item Name	Outer Jacket Material	Max Circuit Length	Max Continuous Exposure Temperature, Power Off
2000002614	8XLE2-CT	Fluoropolymer	138 m	85 °C
P000000793	12XL2-CR	Modified Polyolefin	110 m	85 °C
P000000794	12XL2-CT	Fluoropolymer	110 m	85 °C

Supply Voltage 120 V

Ground Path Type Braid

Min Installation Temperature -18 °C

Table 1/1

Catalog Number	Item Name	Outer Jacket Material	Max Continuous Exposure Temperature, Power Off
2000002611	5XLE1-CT	Fluoropolymer	85 °C
2000002613	8XLE1-CT	Fluoropolymer	85 °C
2000002607	5XLE1-CR	Modified Polyolefin	85 °C
2000002609	8XLE1-CR	Modified Polyolefin	85 °C

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nVent

Our powerful portfolio of brands:
nVent.com **CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER**

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RAYCLIC

CONNECTION KITS AND ACCESSORIES FOR RAYCHEM XL-TRACE LSZH, FS-A-2X, FS-B-2X, GM-2X AND HWAT SELF-REGULATING HEATING CABLES

PRODUCT OVERVIEW

The nVent RAYCHEM RayClic system is a simple, fast and reliable connection device developed exclusively for nVent RAYCHEM XL-Trace LSZH, FS-A-2X, FS-B-2X, GM-2X and HWAT self-regulating heating cables.

The easy-to-install RayClic system reduces installation time, lowering the total installed cost of the heating cable system.

Simple

- No need for special tools
- Three-step installation

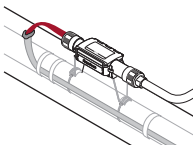
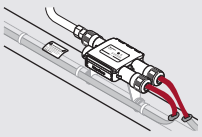
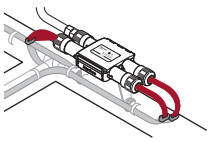
Reliable

- Intuitive installation
- Rugged, waterproof, UV-resistant enclosure
- IP68
- Torx head fittings

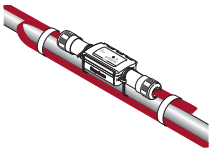
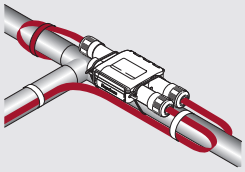
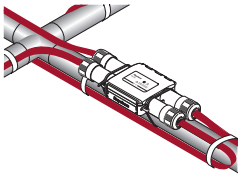
Cost-effective

- Quick installation

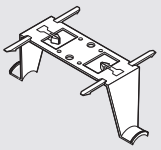
POWERED CONNECTION KITS

Catalog number	Part number	Description
RayClic-CE-02 	235422-000	A RayClic-CE-02 can supply power to one heating cable. Each kit contains one RayClic-CE-02 power connection, one RayClic-E-02 end seal, one RayClic-SB-04 pipe mounting bracket and two cable ties. Rayclic-CE-02 has a 1.5m power cable fitted. Weight: 0.8 kg
RayClic-PS-02 	716976-000	A RayClic-PS-02 can be used as a power connection kit for supplying power to two heating cables. Each kit contains one RayClic-PS-02 powered splice connection, two RayClic-E-02 end seals, one RayClic-SB-04 pipe mounting bracket and two cable ties. Rayclic-PS-02 has a 1.5m power cable fitted. Weight: 0.9 kg
RayClic-PT-02 	636284-000	A RayClic-PT-02 can be used as a power connection kit for supplying power to three heating cables. Each kit contains one RayClic-PT-02 powered tee connection, three RayClic-E-02 end seals, one RayClic-SB-04 pipe mounting bracket and two cable ties. Rayclic-PT-02 has a 1.5m power cable fitted. Weight: 0.9 kg

UNPOWERED CONNECTION KITS

Catalog number	Part number	Description
RayClic-S-02 	364855-000	Splice kits are installed as needed to connect two heating cables together at one point. Each kit contains one RayClic-S-02 splice. Weight: 0.6 kg
RayClic-T-02 	441524-000	Tee kits are installed as needed to connect three heating cables together at one point. Each kit contains one RayClic-T-02 tee connection and one RayClic-E-02 end seal. Weight: 0.9 kg
RayClic-X-02 	001013-000	RayClic-X-02 kits are installed as needed to connect four heating cables together at one point. Each kit contains one RayClic-X-02 and two RayClic-E-02 end seals. Weight: 0.9 kg

ACCESSORIES

Catalog number	Part number	Description
RayClic-E-02 	224727-000	The RayClic-E-02 is a replacement end seal kit.
RayClic-SB-04 	616809-000	The RayClic-SB-04 is a pipe mounting bracket for use with any RayClic connection kit. One pipe mounting bracket is included with each connection kit.

RayClic System Specifications

Rated voltage	230Vac
Maximum circuit breaker size	20A
Maximum exposure temperature (De-energised)	65°C
Maximum ambient temperature (Energised)	40°C
Minimum installation temperature	–18°C
Enclosure rating	IP68

Applicable Products

XL-Trace LSZH: 10XL2-ZH, 15XL2-ZH, 26XL2-ZH, and 31XL2-ZH
FS-A-2X and FS-B-2X
GM-2X, GM2-XT
HWAT L, M & R

APPROVALS

DESIGN AND INSTALLATION

For proper design and installation of a RayClic connection system, use the appropriate product design guide and the installation instructions included with the connection kit.

ELECTRICAL PROTECTION

nVent requires the use of a 30mA residual current device (RCD) to provide a maximum safety and protection from fire. All trace heating circuits should be protected by C-type circuit breaker.

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Our powerful portfolio of brands:
nVent.com CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

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nVent reserves the right to change specifications without notice.

Prefabricated building

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 08/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 031 **Referencing** nothing
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : EMERGI LITE

Descriptions / comments

Emergency light for office

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. ELE-031

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2023-12-12

DILLON CONSULTING

New product

CM-SC Series

Steel pictogram combination unit

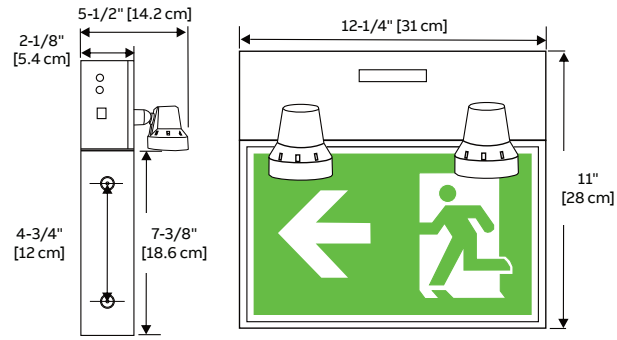


Features

- Steel housing with thermoplastic fully adjustable 2W LED heads
- Universal ceiling, side or wall mount
- Universal single and double face
- 3 pictogram panels included: 1 with no arrow and 2 with arrows
- Can power CM-R1 and CM-R2 remote fixtures only
- 120VAC-347VAC, 50/60Hz input
- Lead-acid battery provides minimum 120 minutes of emergency lighting
- Red LED charger monitor
- CSA C22.2 no.141-10 listed
- **Warranty details at: www.emergi-lite.ca**

Dimensions

Dimensions are approximate and subject to change.





< Pictogram LEFT from here | Pictogram STRAIGHT from here | Pictogram > RIGHT from here

Power consumption and unit rating

Model	AC specs			
		Wattage	Current	Efficiency
CM-SC-E	120V, 50/60Hz	3.2W	0.03A	0.97P
	277V, 50/60Hz	6.5W	0.025A	0.92PF
	347V, 50/60Hz	3.6W	0.01A	0.92P

Ordering information

Series	Voltage	Brand
CM-SC	**Blank=** 120VAC-347VAC	**-E**= Emergi-Lite®

Example: CM-SC-E

Commodity Emergency Lighting Offering
Suitable for installation from 5°C to 30°C

	Part number	Description	Features
	**CM-SS-SP**	Steel pictogram sign, Self-powered	2 hours emergency run-time Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-SS-AC**	Steel pictogram sign, AC only	Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-SC**	Steel pictogram combination unit, 6 volt 27 watts	High efficiency 2 watt LED heads Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-SB**	Steel battery unit, 6 volt 27 watts	High efficiency 2 watt LED heads
	**CM-R1**	Single thermoplastic remote head **Compatible with CM-SB and CM-SC only**	High efficiency 2 watt LED head
	**CM-R2**	Double thermoplastic remote heads **Compatible with CM-SB and CM-SC only**	High efficiency 2 watt LED heads
	**CM-PS-SP**	Thermoplastic pictogram sign, Self-powered	2 hours emergency run-time Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-PS-AC**	Thermoplastic pictogram sign, AC only	Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-PC**	Thermoplastic pictogram combination unit, 3.6 volts	High efficiency 2 watt LED heads Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-PB**	Thermoplastic battery unit, 3.6 volts	High efficiency 2 watt LED heads
	**CM-EDGE-SP**	Aluminum edge-lit pictogram sign, Self-powered	2 hours emergency run-time Universal single and double face Universal mount: wall, ceiling or side mount
	**CM-EDGE-AC**	Aluminum edge-lit pictogram sign, AC only	Universal single and double face Universal mount: wall, ceiling or side mount

Prefabricated building

PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 08/12/2023

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 032 **Referencing** nothing
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : BELIMO

Descriptions / comments

Methane monitor and detector for office
no calibrationon site
calibration done by company before shipment

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

☒	REVIEWED
☐	REVIEWED AS NOTED
☐	REVISE & RESUBMIT

DC SD NO. ELE-032

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2023-12-12

DILLON CONSULTING

Gas monitor

Les appareils de surveillance de gaz sont étalonnés en usine et peuvent mesurer jusqu'à deux gaz différents simultanément. Tous les appareils sont dotés d'alarmes sonores et visuelles et d'un bus de commnication CAN, ce qui permet un fonctionnement autonome et la mise en réseau d'un maximum de 32 appareils. Certains modèles sont équipés de relais et de sorties analogiques permettant de contrôler directement la ventilation, ainsi que du protocole BACnet MS/TP permettant l'intégration à un SGB. Tous les appareils de surveillance de gaz sont raccordés en guirlande et bénéficient d'une garantie de cinq ans.



2-year warranty

Vue d'ensemble

Type	Valeurs mesurées	Nombre de relais	Number of analog outputs	Communication
EXT-OP-6005-A	CH_4	1	2	CAN-Bus, BACnet MS/TP
EXT-OP-6005-B	CH_4	2	0	CAN-Bus, BACnet MS/TP
EXT-OP-6005-C	CH_4	0	0	CAN-Bus

Données techniques

Caractéristiques électriques	Tension nominale	AC 24 V
	Remarque relative à la tension nominale	Voir la section des remarques pour les détails de la tension nominale et la plage de tension nominale.
	Fréquence de tension nominale	50/60 Hz
	Consommation d'énergie CA	5 VA
	Entrée de câble	2 au haut, 2 au bas, 1 à l'arrière - ½ po EMT
	Spécifications des câbles	Câble d'alimentation : 18...20 AWG Câble de communication ; paire torsadée blindée 22....24 AWG, faible capacité Please see the remarks section for more information about cable size and polarity.
	Fusible de sûreté	Thermistance à coefficient de température positif, remise à zéro automatique
Communication par bus de données	Communication	CAN-Bus BACnet MS/TP
Caractéristiques fonctionnelles	Solution	air
	Remarque sur le signal de sortie actif	Sorties analogiques : 2...10 V ou 4...20 mA, sélectionnables par l'utilisateur avec cavalier
	Remarque relative au signal de sortie du relais	Relais : SPDT, 5 A @ AC 125 V, non inductif Please see remarks section for relay rating.
	Montage	0,3...0,9 m [1...3 pi] sous le plafond
	Altitude max.	2 000 m [6 562 pi] au dessus du niveau de la mer

Données techniques

Caractéristiques fonctionnelles	Remarque sur l'altitude max.	Il est recommandé de vérifier l'étalonnage au-dessus de 2000 pi [610 m]
	Zone de couverture	Rayon : 10 m [30 pi] Superficie : 250 m^2 [2500 pi^2] There can be no obstructions such as walls, elevators, stairs, shelving with solid fill, tool chests, etc. Otherwise the time weighted average (TWA) for the gas to reach the monitor will increase.
	Affichage	ACL, avec rétro-éclairage affiche le type de gaz, la teneur en gaz, l'état du niveau d'alarme
	Alarme	Alarme niveau 1 : alarme visuelle (DEL rouge) Alarme niveau 2 : alarme visuelle (DEL rouge) Niveau d'alarme 3 : alarme visuelle et sonore (DEL stroboscopique blanche clignotante et avertisseur sonore) Horn: 80 dB @ 1 m [3.3ft]
Données de mesure	Valeurs mesurées	CH_4
Spécifications CO_2	Sensing element technology	Catalytique
	Measuring range	0 à 50 % LEI
	Calibration	Non-interactive zero and span Sensor modules are required to be calibrated annually.
Spécifications Température	Measuring range	-4...104 °F [-20...40°C] Veuillez consulter la section des remarques pour l'avis d'application du capteur de température
	Précision température passive	±7°C @ 23.5°C [13°F @ 74°F] Please see remarks section under application notice for more information about temperature accuracy
Matériaux	Boîtier	UL94 5VA
Données de sécurité	Homologations	cCSAus listed to C22.2 No. 61010-1-12, UL Std. No. 61010-1 (3rd Edition), harmonized under IEC/EN 61010-1 BTL listed No. BTL-30001
	Degré de pollution	2
	Humidité ambiante	15...90 % HR/RH continue, 0...99% HR/RH intermittente, sans condensation
	Température ambiante	-20...40°C [-4...104°F]

Remarques

Remarques sur la tension nominale

All Belimo gas monitors, communication modules, and relay units can be powered by AC/DC 24 V. Under CSA/UL 61010-1 all gas monitors and communication modules are rated to AC 24 V only. Under ULC-S588 and UL 2075 all vehicle emissions gas monitors (CO, NO_2, CO + NO_2) are rated to AC/DC 24 V.

Remarques sur la tension nominale

All Belimo gas monitors, communication modules, and relay units have a nominal voltage range of AC 17...28/DC 21...38 V (not UL or CSA tested), AC/DC 20.4...26.4 V (UL tested).

Remarques

Power cable size and polarity

Terminal blocks can accommodate one 14...20 AWG wire, or two 18...20 AWG wires in the same terminal. Please consider cable and transformer size to provide adequate voltage. For all power (AC/DC 24 V) maintain the same polarity between devices.

Communication cable size and polarity

CAN bus and BACnet MS/TP communication cables should be 22...24 AWG, twisted pair, shielded jacketed, low capacitance. Please consider CAN bus baud rate (programmable setting No. 68) and BACnet MS/TP baud rate (programmable setting No. 48) to provide working communication. For all communication wiring, maintain the same polarity and baud rate between all devices on the network.

22DT-52..

All relays used in Belimo gas monitors, communication modules, and relay units are rated for: SPDT, 5A @ AC 125 V, non-inductive (UL/CSA tested), SPDT, 5A @ AC 240 V, non-inductive, (not UL/CSA tested), and SPDT, 4A @ DC 24 V, non-inductive (not UL/CSA tested).

Notice d'utilisation du capteur de température

Tous les détecteurs de gaz et modules de communication Belimo sont dotés d'un capteur de température interne qui est désactivé par défaut. Une fois activé, le rôle de ce capteur de température est de protéger un garage souterrain de la surchauffe ou du gel. En cas d'utilisation de cette fonction, il est conseillé d'étalonner le capteur de température à la température ambiante (réglage programmable n° 50), 24 heures après la mise sous tension du détecteur de gaz. Pour la protection contre le gel, il est recommandé de régler le point de consigne de la température à plus de 40 F [4°C].

Veuillez noter que ce capteur de température est situé dans le détecteur de gaz directement sur le circuit imprimé. Par conséquent, il doit être étalonné après 24 heures de fonctionnement normal, afin de compenser pour la chaleur générée par le circuit imprimé. Il n'est pas conçu pour servir de capteur de température ambiante en raison de sa précision limitée et de son temps de réponse long dû à son emplacement sur la carte de circuit imprimé.

Accessoires

Modules capteurs de remplacement

Description	Type
Module capteur CH_4 (méthane), 0 à 50 % LEI, Catalytique	EXT-OP-5505

Mélange de gaz d'étalonnage

Description	Type
Bonbonne de gaz d'étalonnage N_2 (azote), 0...100 % vol., Gaz à la pression zéro, 103 L,	EXT-OP-GAS-N2
Bonbonne de gaz d'étalonnage CH_4 (méthane), 0 à 25 % LEI, 103 L,	EXT-OP-GAS-CH4

Accessoires électriques

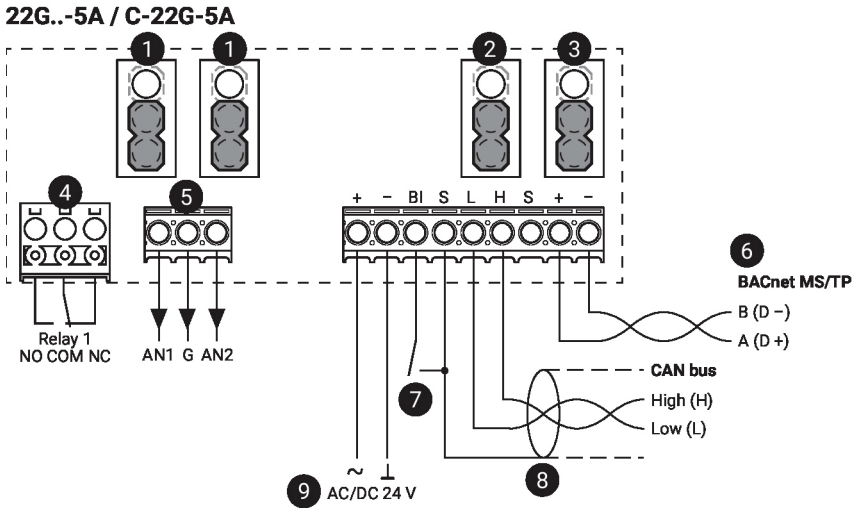
Description	Type
Module de communication, CAN-Bus, BACnet MS/TP, 1 relais, 2 sorties analogiques	C-22G-5A
Module de communication, CAN-Bus, BACnet MS/TP, 2 relais	C-22G-5B
Module de communication, CAN-Bus	C-22G-5C
Bloc relais, CAN-Bus, 4 relais	C-22G-50
Kit de montage haut-bas	A-22G-A14
External visual alarm	A-22G-A15
External audible alarm	A-22G-A16
Transformer, 50 VA	A-22G-A50
Transformer, 100 VA	A-22G-A100

Accessoires mécaniques

Description	Type
Boîtier antiéclaboussure	A-22G-A12
Boîtier fixé au conduit	A-22G-A13
Calibration kit,	A-22G-A22

Schéma de câblage

A Model Wiring



1 Réglages de sortie analogique

Position basse :	2...10 V (réglage en usine)
Position haute :	4...20 mA

2 Cavalier de fin de ligne (EOL) : CAN bus

Position basse :	terminaison OFF (réglage d'usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

3 Cavalier de fin de ligne (EOL) : BACnet MS/TP

Position basse :	terminaison OFF (réglage en usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

4 Sortie analogique

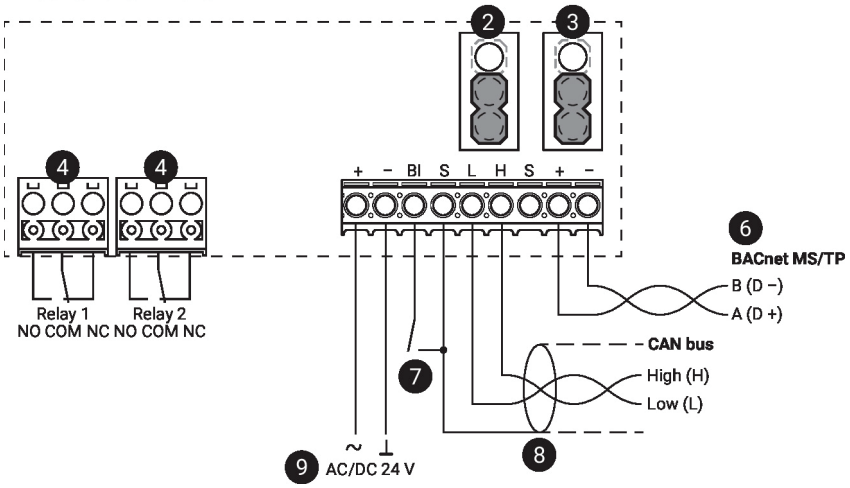
5 Entrée binaire pour interrupteur de fin de course

6 Blindage connecté à la première unité seulement, aux autres unités seulement en boucle.

7 Aucune connexion à la terre

B Model Wiring

22G..-5B / C-22G-5B



1 Cavalier de fin de ligne (EOL) : CAN bus

Position basse :	terminaison OFF (réglage en usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

2 Cavalier de fin de ligne (EOL) : BACnet MS/TP

Position basse :	terminaison OFF (réglage en usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

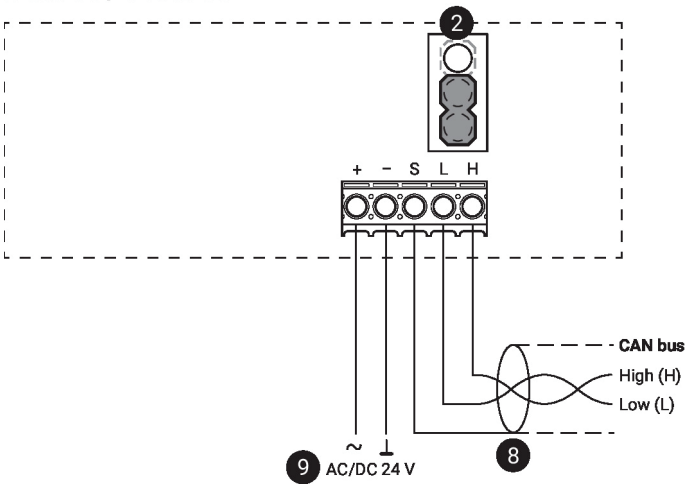
3 Entrée binaire de l'interrupteur de fin de course

4 Blindage est connecté à la première unité seulement, aux autres unités seulement en boucle.

5 Aucune connexion à la terre

C Model Wiring

22G..-5C / C-22G-5C



1 **Réglages de sortie analogique**

Position basse :	2...10 V (réglage en usine)
Position haute :	4...20 mA

2 **Cavalier de fin de ligne (EOL) : CAN bus**

Position basse :	terminaison OFF (réglage d'usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

3 **Cavalier de fin de ligne (EOL) : BACnet MS/TP**

Position basse :	terminaison OFF (réglage en usine)
Position haute :	terminaison ON (seules la première et la dernière unités devrait avoir ce cavalier en position haute)

4 **Sortie analogique**

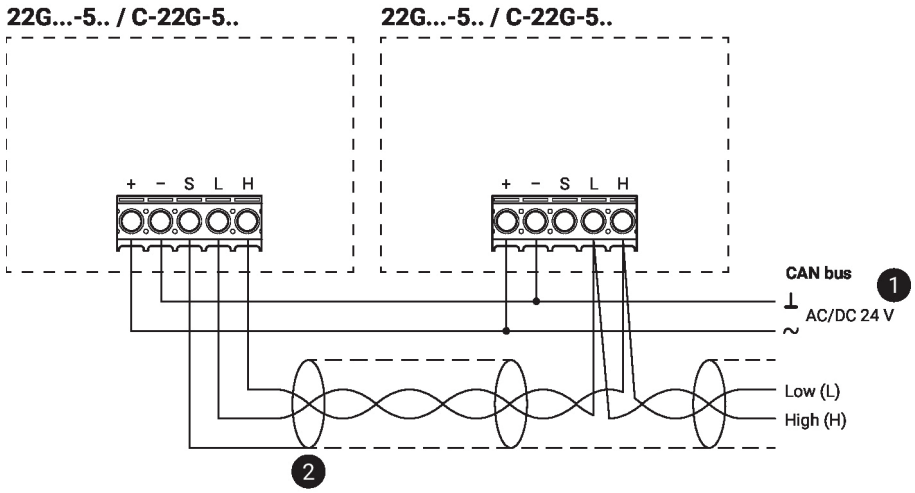
5 **Entrée binaire pour interrupteur de fin de course**

6 **Blindage connecté à la première unité seulement, aux autres unités seulement en boucle.**

7 **Aucune connexion à la terre**

Câblage du bus CAN

CAN-Bus

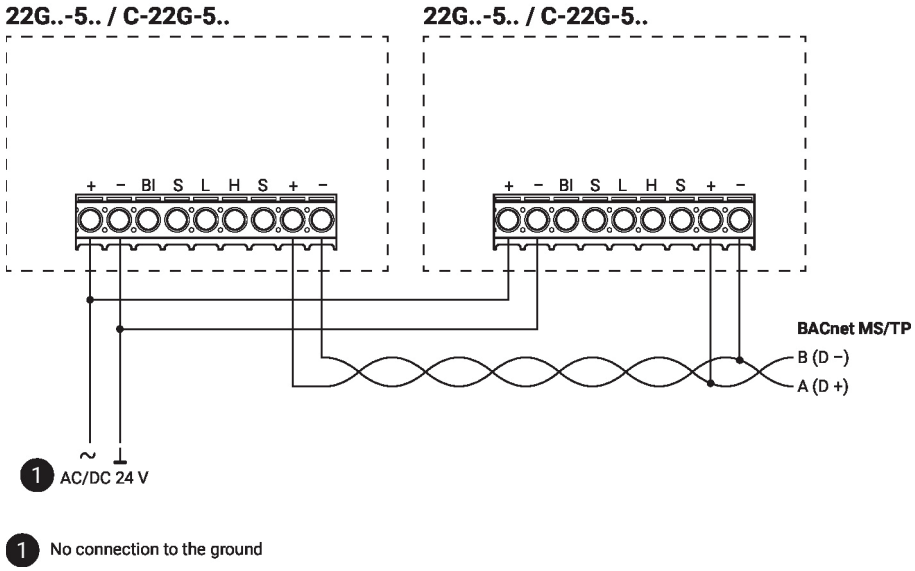


1 No connection to the ground

2 Shield connected at the first unit only, at others only looped through

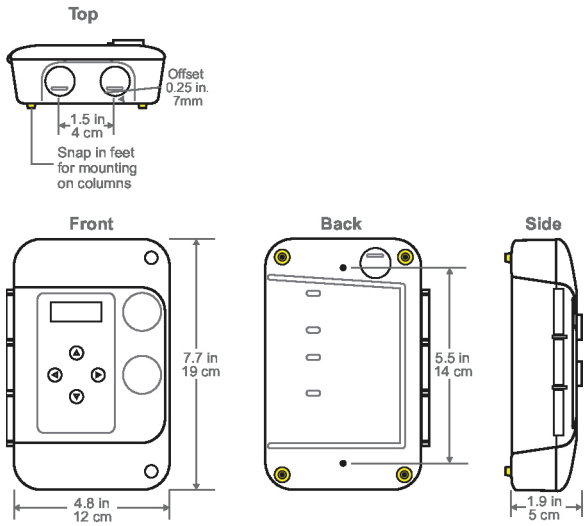
Schéma de câblage

Câblage RS485 BACnet MS/TP BACnet MS/ TP Wiring



1 No connection to the ground

Dimensions



Type	Poids
EXT-OP-6005-A	0.95 lb [0.43 kg]
EXT-OP-6005-B	0.95 lb [0.43 kg]
EXT-OP-6005-C	0.95 lb [0.43 kg]



High-Low Mounting Kit

Remote Enclosure for Dual Gas Monitors

The A-22G-A14 high low kit converts a gas monitor into two separate enclosures, to suite mounting height applications where it is recommended to monitor the two gases at different elevations.

Discover the advantages
www.belimo.us

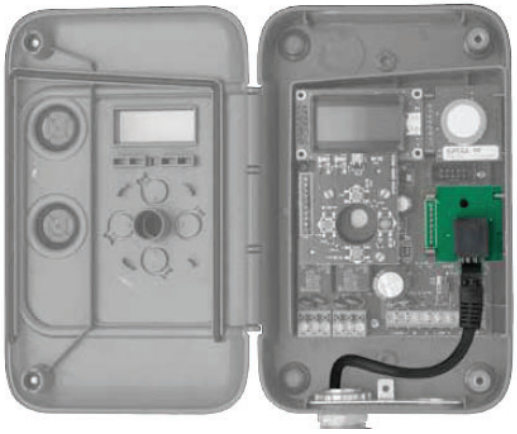
BELIMO®

Typical Applications

Boiler Mechanical Rooms: A carbon monoxide (CO) gas monitor is installed at 3-7 feet (1-2 meters) from the floor, and a natural gas monitor (CH4) is mounted at 1-3 feet (0.3-1 meters) from the ceiling.

Parking Garages/Automobile Parkades: Mount carbon monoxide monitors at 3-7 feet (1-2 meters) from the floor and a nitrogen dioxide monitor at 50% of the ceiling height when gasoline and diesel vehicles are expected.

Loading Docks and Truck Maintenance: Install a carbon monoxide monitor at 3-7 feet (1-2 meters) from the floor and a propane monitor at 1-2 feet (0.3-0.6 meters) from the floor.



Dual Gas Monitor

A prefabricated interconnection cable allows for a quick installation.

The high-low mounting kit consists of an enclosure for remote mounting a sensor module, an interface connector to plug into an existing gas monitor, and a 7 foot [2 meter] plug in data cable [Type RJ45] that interconnects the two.



Interface Connector



Data Cable



Enclosure

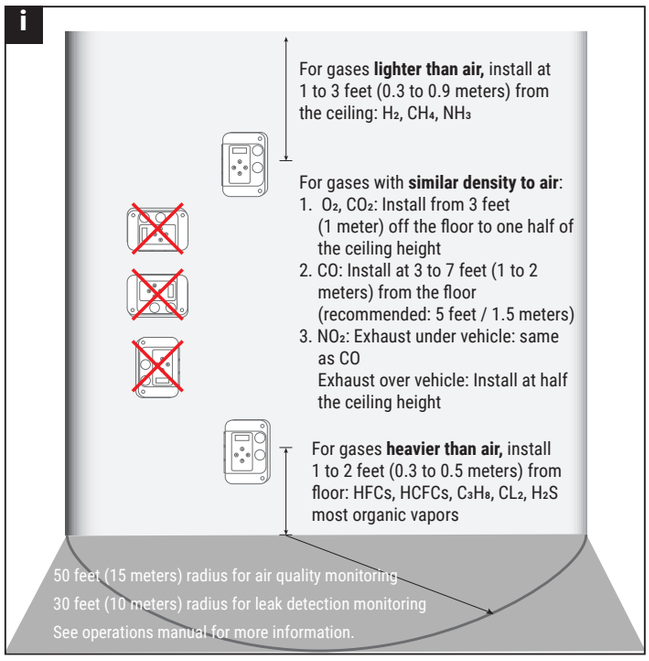
Y_10009 – 04.2023 – Subject to technical modifications

Belimo Americas
USA, Latin America, and the Caribbean: www.belimo.us
Canada: www.belimo.ca, Brazil: www.belimo.com.br
Belimo Worldwide: www.belimo.com

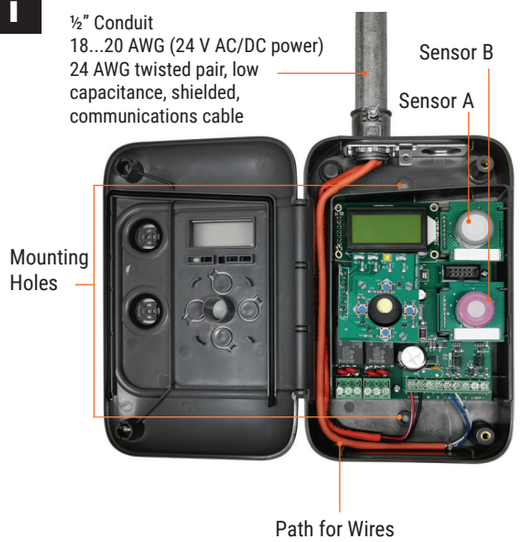
INSTALLATION GUIDE

Gas Monitors

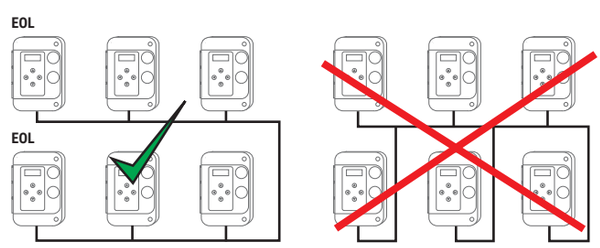
Refer to Operation Manual section **3 for installation** and section **4 for operation** and parameters



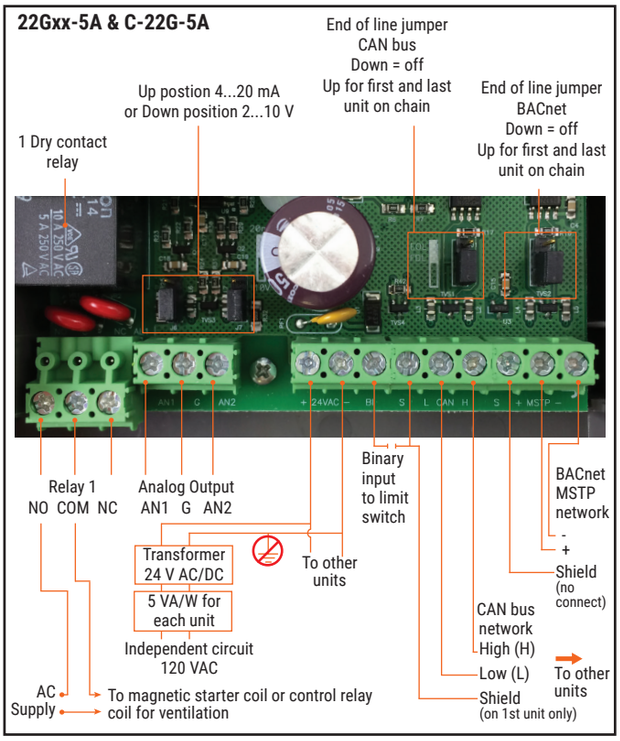
Important. All wiring must conform to local building codes, regulations and laws. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



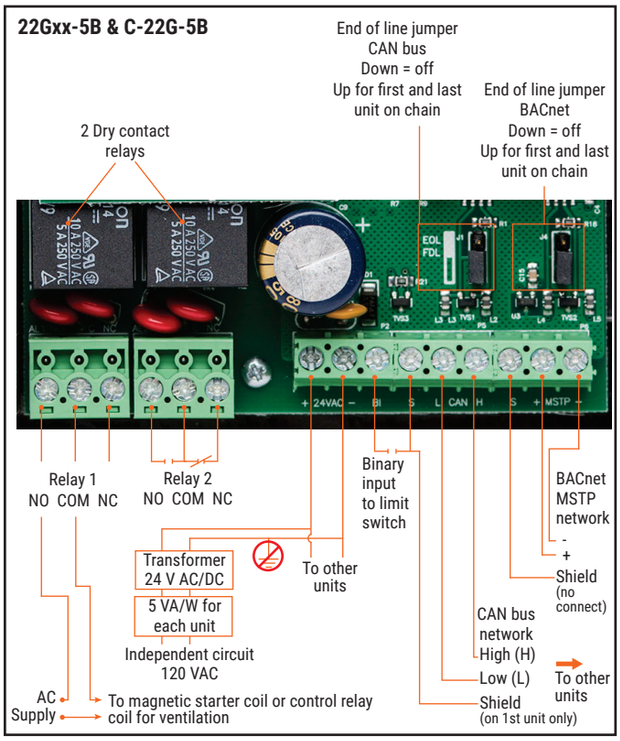
Notes:
1) Do not obstruct the monitor
2) Do not ground the 24 V AC/DC
3) When using multiple monitors:
   a) Maintain the same polarity (24 V AC/DC) for all devices
   b) CAN bus connection:
      i) Maintain the same polarity (CAN bus) for all devices
      ii) Use 24 AWG twisted pair, low capacitance, shielded, communications cable
      iii) Monitors must be connected in series
      iv) Switch end of line (EOL) jumpers (for first and last units)



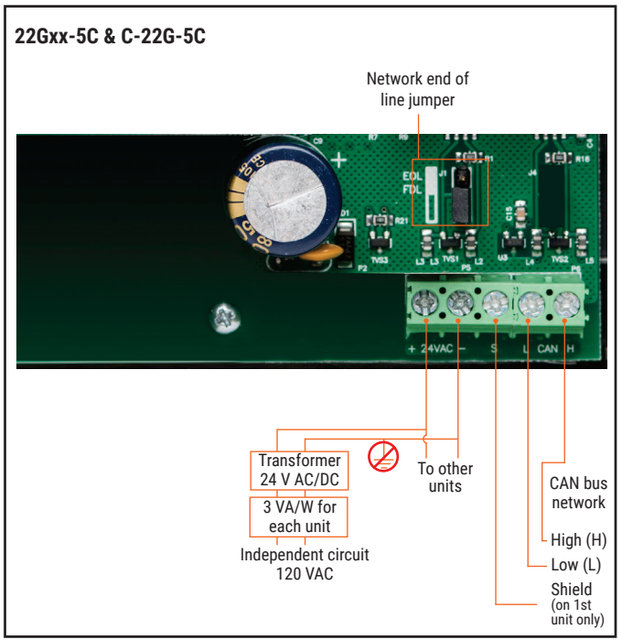
22Gxx-5A & C-22G-5A



22Gxx-5B & C-22G-5B



22Gxx-5C & C-22G-5C



Z_13001 Subject to change. © Belimo Aircontrols (USA), Inc.

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 24/01/2024

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station	YVON ROY (1986) INC.	**Shop Drawing no :** ELE- 033 R1 **Referencing**
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : CONTROLES INCO

Descriptions / comments CONTROL PANEL FOR LEVEL TANK

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE GENERAL DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR ERRORS OR OMMISSIONS OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

X	REVIEWED
	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-033 R1

PROJECT NO. 19-9543 (WTS)

BY K.Speidel

DATE 2024-01-24

DILLON CONSULTING

LES CONTRÔLES INCO INC.

CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION
OFFICE IQALUIT

DRAWING N°: 240111-1 (PI2818)

DATE: 2024-01-11

REVISION: 1 DATE: 2024-01-11

Legend

DETECTION

- FOOT SWITCH
- LEVEL SWITCH (x)
- LIMIT SWITCH
- PHOTOCELL
- PROXIMITY SENSOR (x mm)
- PRESSURE SWITCH
- TEMPERATURE SWITCH (x C)
- PHOTOCELL TRANSMITTER
- PHOTOCELL RECEIVER
- PROXIMITY SWITCH
- ULTRASONIC SENSOR

WIRING

- INTERNAL WIRING
- EXTERNAL WIRING
- WIRING INTERSECTION (WIRES ARE CONNECTED)
- WIRING INTERSECTION (WIRES ARE NOT CONNECTED)
- GROUND CONNECTION
- CABLE1 — Brin 1, Brin 2 — CABLE
- EX_1 (LCP1/P2/G2) — REFERENCE
- EX_1 (LCP1/P2/H2) — LINE NUMBER, PAGE NUMBER, PANEL NUMBER

PROTECTION

- CONTROL FUSE (1A)
- POWER FUSE
- FUSE HOLDER (1A)
- BREAKER
- BRIDGE RECTIFIER
- DISCONNECT
- DISCONNECT WITH FUSE (600V / 100A FUSIBLE:)
- OVERLOAD
- REACTOR

COIL ET CONTACTOR

- C_EX1 (A1, A2) CONVEYOR LC1D09 — CONTACTOR COIL
- NO (P2/D5) NC — CONTACTOR CONTACT REFENCE
  EX: (P2/D5) = CONTACT IS LOCATED AT PAGE 2 LINE D, COLUMN 5
- C_EX1 (13, 14) (P2/B5) — COIL AUXILIARY CONTACT
  EX: REFERENCE (P2/B5) = CONTACT IS LOCATED AT PAGE 2 LINE B, COLUMN 5
- C_EX1 (1, 2) 100-C09D10 (P2/B5) — CONTACTOR POWER CONTACT
  EX: REFERENCE (P2/B5) = CONTACT IS LOCATED AT PAGE 2 LINE B, COLUMN 5
- R_EX1 (A1, A2) VALVE — RELAY COIL
- NO (P2/F5) NC — RELAY CONTACT REFERENCE
  EX: (P2/F5) = CONTACT IS LOCATED AT PAGE 2 LINE F, COLUMN 5
- R_EX1 VALVE (P2/E5) — RELAY CONTACT
  EX: REFERENCE (P2/E5) = CONTACT
  IS LOCATED AT PAGE 2 LINE E, COLUMN 5

TERMINAL

- TB0 1 — TERMINAL BLOCK NUM., TERMINAL NUM. — SINGLE TERMINAL
- TB0 1A — TERMINAL BLOCK NUM., TERMINAL NUM. — DOUBLE TERMINAL
- TB0 2 — TERMINAL BLOCK NUM., TERMINAL NUM. — FUSE TERMINAL
- 4 — TEMRINAL NUM. — TERMINAL
- TB0 — TERMINAL BLOCK NUM., TERMINAL NUM. — DISCONNECT TERMINAL

MISCELLANEOUS

- JUMPER
- EMERGENCY STOP
- MARCHE — PUSH BUTTON
- HORS - EN / EN — SELECTOR SWITCH
- COLOR, V — LIGHT
- COLOR, R — BEACON
- BUZZER
- PULL CORD — TIRETTE URGENCE
- FAN
- 5A — POWER 120V 5A

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REV.	DATE	APPR.	REV.	DATE	APPR.
1	2024-01-11				

CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION OFFICE IQALUIT

DATE 2024-01-11 | TYPE OF SCHEMATIC: LEGEND

BY: J.P.D. | RESP: E.M | APPR: E.M.

DRAWING N° 240111-1 (PI2818) | PAGE 2 OF 7

LES CONTRÔLES INCO INC.
300, St-Jean Baptiste Nord
Princeville (Québec)
Canada G6L 5E2
TEL.: (819) 364-5330
FAX.: (819) 364-5120
info@controlesinco.com

BILL OF MATERIALS

REFERENCE	QTY	ITEM NUMBER	MANUFACTURER	DESCRIPTION
R1	1	100-C23D10	ALLEN BRADLEY	CONTACTOR 120V 3 POLES 23A 1NO
R1	1	100-FA11	ALLEN BRADLEY	AUXILARY CONTACTS 1NO-1NC
TB1	1	1492-CJP4-10	ALLEN BRADLEY	PUSH-IN CENTER JUMPER, 10 PINS
TB1	5	1492-EBP4	ALLEN BRADLEY	END PLATE FOR TERMINAL 1492-P4
TB1	18	1492-P4	ALLEN BRADLEY	SINGLE TERMINAL 35A
RI	1	800FD-P4N5	ALLEN BRADLEY	RED LIGHT INDICATOR 120VAC
BI	1	800FD-P7N5	ALLEN BRADLEY	BLUE LIGHT INDICATOR 120VAC
CB1	1	FAZ-C15-1-NA-SP	EATON	BREAKER 1 POLE 15A CURVE C
BE	1	50SINB-N5-40WH	EDWARDS SIGNALING	STEADY-ON BEACON BLUE 120VAC
RE	1	50SINR-N5-40WH	EDWARDS SIGNALING	STEADY-ON BEACON RED 120VAC
PANEL	1	A1412CH	HOFFMAN	PANEL NEMA 12 14"X12"X6"
PANEL	1	A14P12	HOFFMAN	BACKPLATE FOR PANEL 14X12

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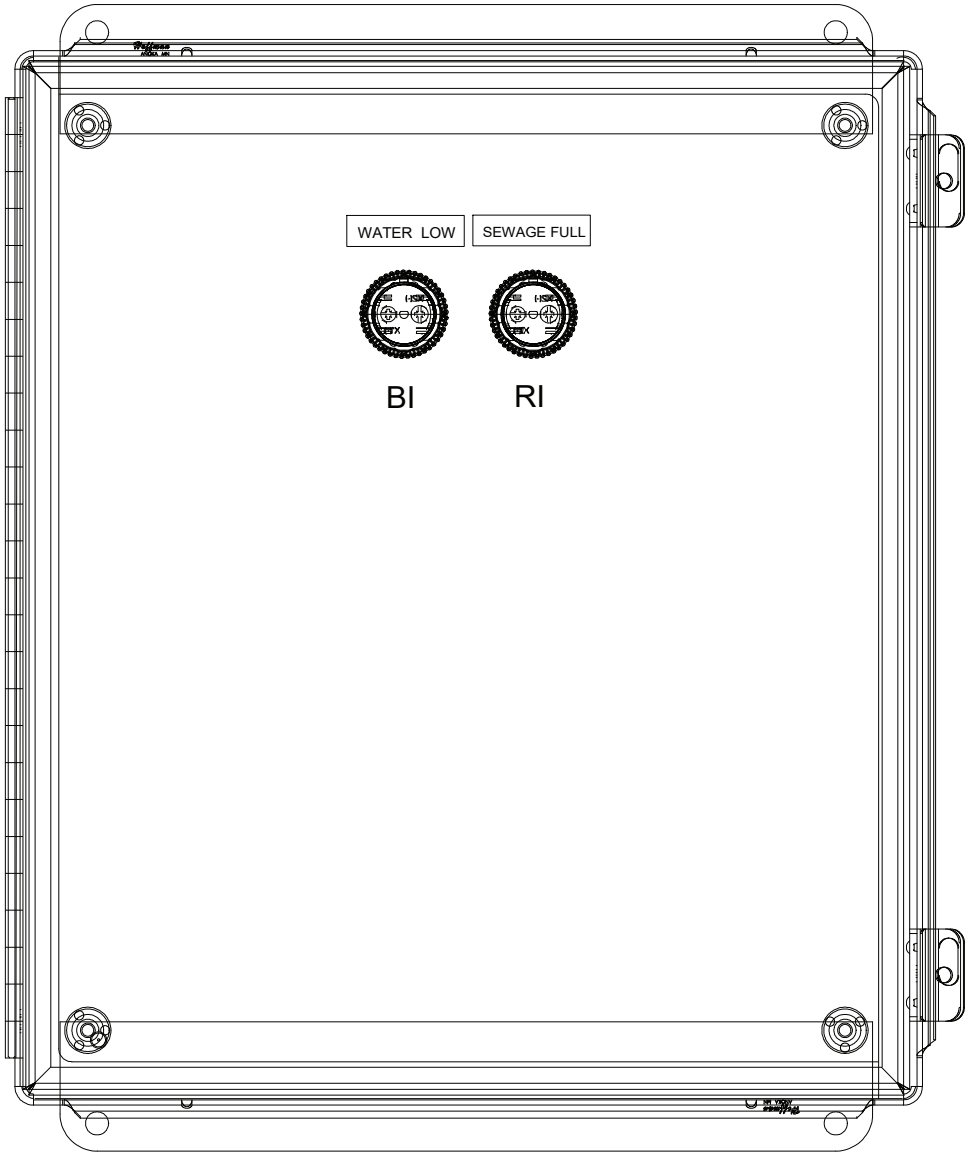
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1	2024-01-11				

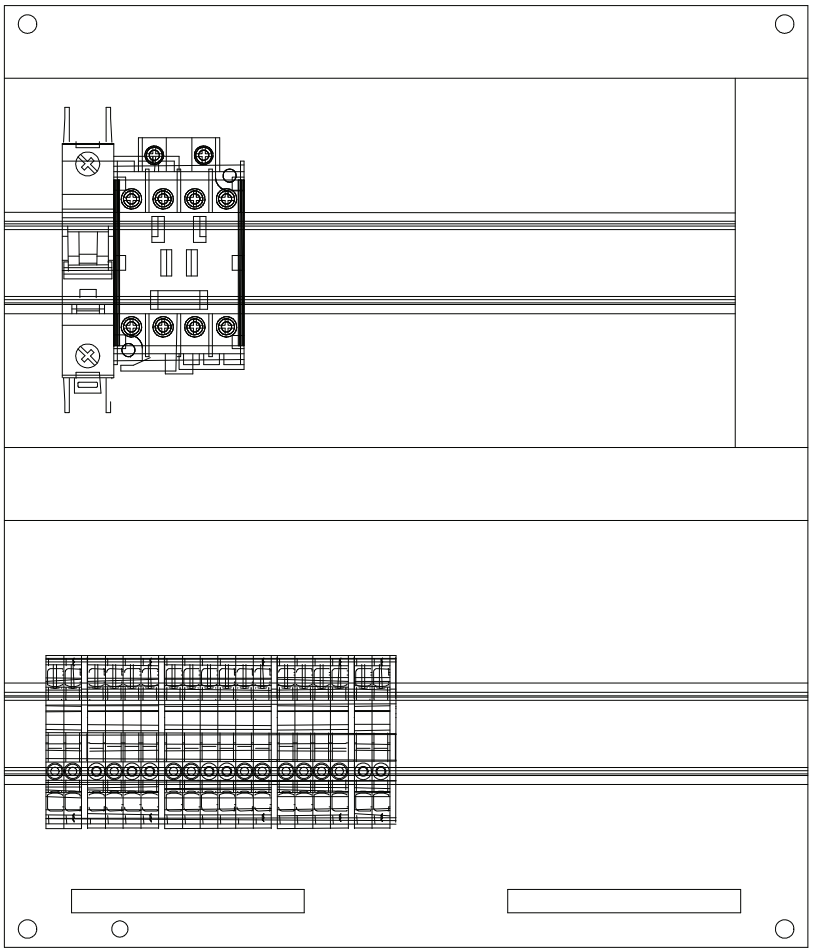
CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION OFFICE IQALUIT

DATE	TYPE OF SCHEMATIC	
2024-01-11	LIST OF MATERIALS	
BY: J.P.D.	RESP: E.M	APPR: E.M
DRAWING N° 240111-1 (PI2818)		PAGE 3 OF 7

LES CONTRÔLES INCO INC.
300, St-Jean Baptiste Nord
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Canada G6L 5E2
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REV.	DATE	APPR.	REV.	DATE	APPR.
1	2024-01-11				

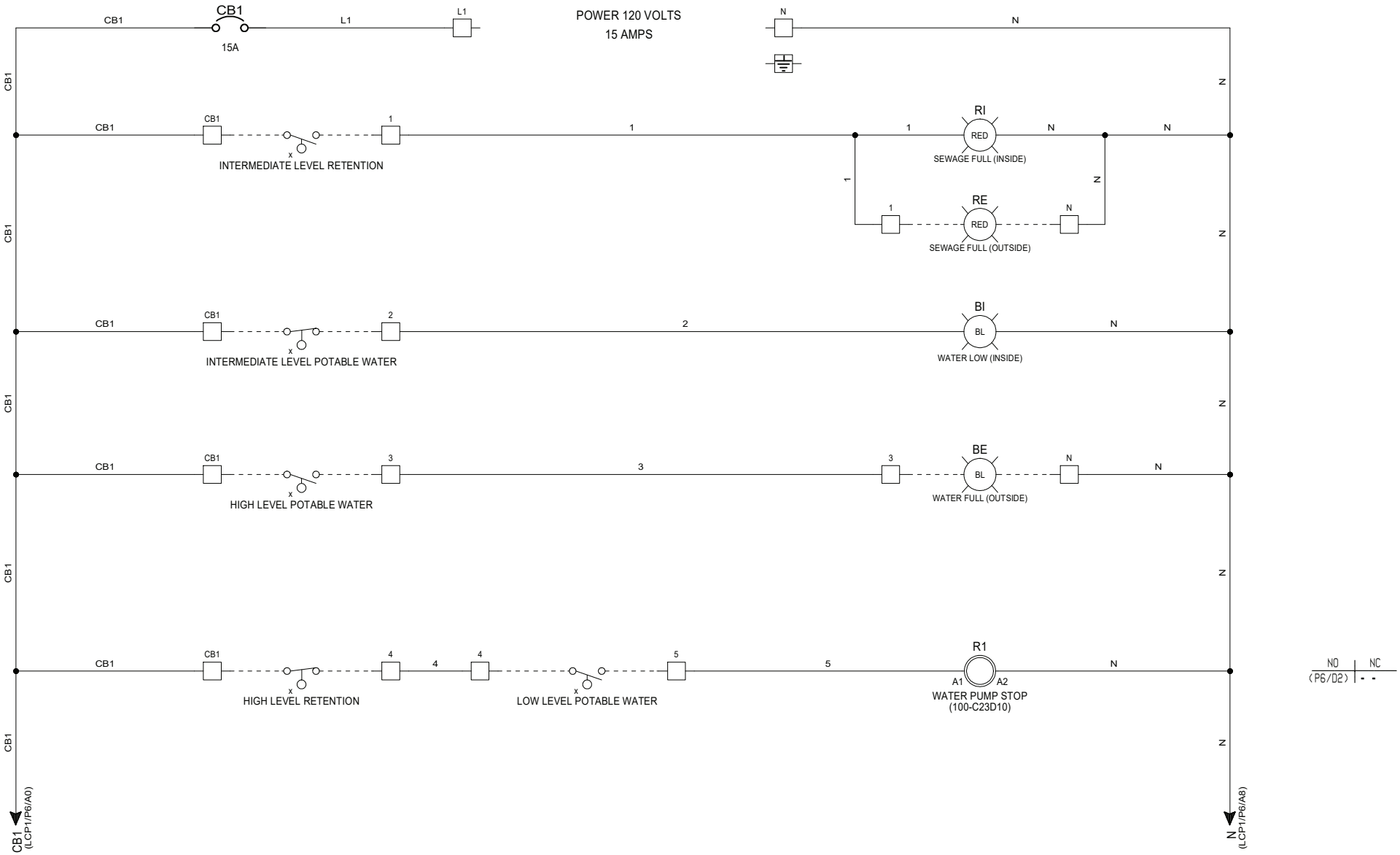
CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION
OFFICE IQALUIT

DATE	TYPE OF SCHEMATIC	
2024-01-11	PHYSICAL LAYOUT	
BY: J.P.D.	RESP: E.M.	APPR: E.M.
DRAWING N° 240111-1 (PI2818)		PAGE 4 OF 7

LES CONTRÔLES INCO INC.
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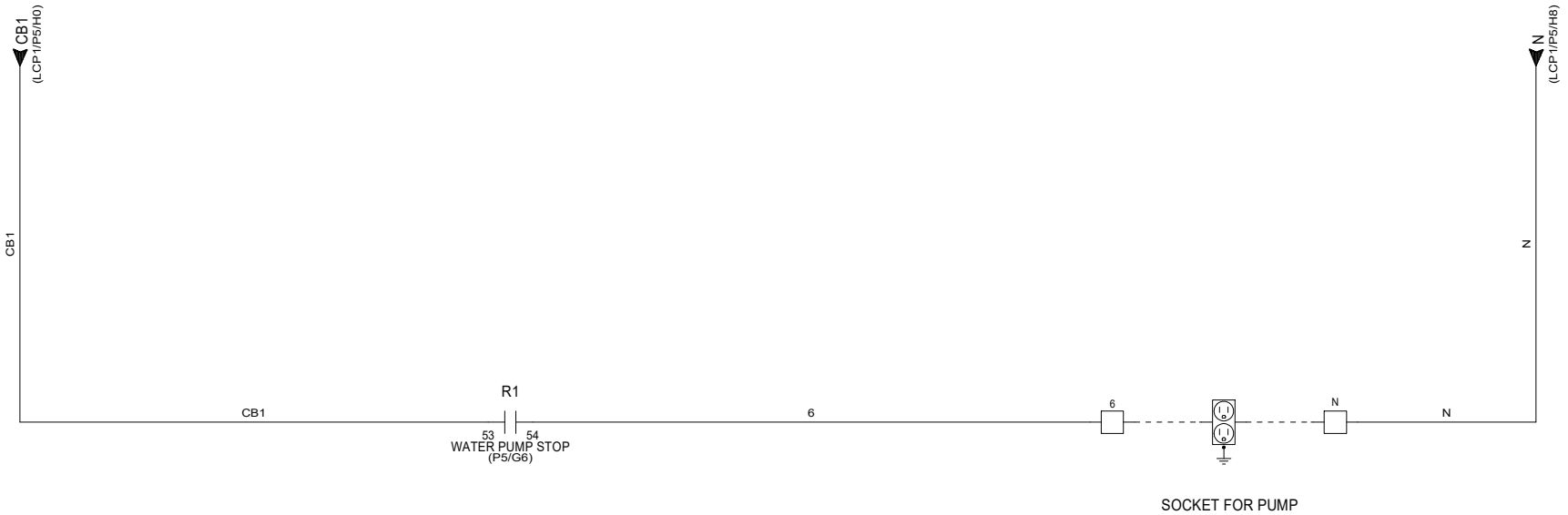
REV.	DATE	APPR.	REV.	DATE	APPR.
1	2024-01-11				

CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION OFFICE IQALUIT

DATE	TYPE OF SCHEMATIC CONTROL	
2024-01-11		
BY: J.P.D.	RESP: E.M	APPR: E.M
DRAWING N° 240111-1 (PI2818)		PAGE 5 OF 7

LES CONTRÔLES INCO INC.
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REV.	DATE	APPR.	REV.	DATE	APPR.
1	2024-01-11				

CLIENT: YVON ROY 1986 INC.

PROJECT: WASTE TRANSFER STATION
OFFICE IQALUIT

DATE	TYPE OF SCHEMATIC CONTROL	
2024-01-11		
BY: J.P.D.	RESP: E.M	APPR: E.M
DRAWING N° 240111-1 (PI2818)		PAGE 6 OF 7

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CONTINUOUS HINGE WITH CLAMPS, TYPE 12



APPLICATION

This easy-to-open, continuous hinge enclosure features screw-down clamps for secure closure and can be used in a wide variety of applications.

SPECIFICATIONS

- 16 or 14 gauge steel
- Seams continuously welded and ground smooth
- Continuous hinge
- Screw-down door clamps
- Bonding provision on door
- External welded-on mounting brackets for easy installation
- Oil-resistant gasket
- Weldnuts provided for mounting optional panels and terminal block kits in size 6.00 x 4.00 in. (152 x 102 mm) and larger

FINISH

ANSI 61 gray polyester powder paint inside and out

ACCESSORIES

Panels for Junction Boxes
Clamp Kits
Fast-Operating Clamp-Cover Junction Box Clamp
Lock Kit for Clamp Cover Junction Boxes
Junction Box and Wall-Mount Enclosure Swing Out Panel Kit
Hole Seals

INDUSTRY STANDARDS

UL 50, 50E Listed; Type 12, 13; File No. E27567
cUL Listed per CSA 22.2 No. 94; Type 12, 13; File No. E27567
UL 508A Listed; Type 12, 13; File No. E61997
cUL Listed per CSA 22.2 No. 94; Type 12, 13; File No. E61997

NEMA/EEMAC Type 12 and 13
CSA, File No. 42184: Type 12
IEC 60529, IP65

MODIFICATION AND CUSTOMIZATION

Hoffman excels at modifying and customizing products to your specifications. Contact your local Hoffman sales office or distributor for complete information.

BULLETIN: A51CH

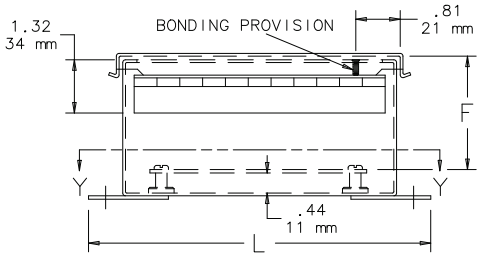
Standard Product

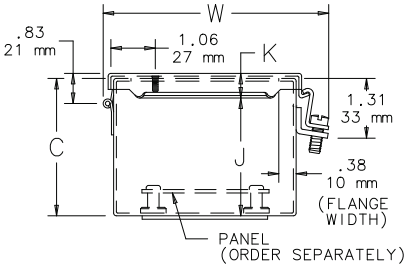
Catalog Number	AxBxC in./mm	Gauge	UL Listed	Panel	Conductive Panel	Panel Size D x E in./mm	Mounting G x H in./mm	Overall L x W in./mm	F in./mm	J in./mm	K in./mm	P in./mm	T in./mm	V in./mm	Y in./mm
A404CH	4.00 x 4.00 x 3.00 102 x 102 x 76	16	508A	No Panel	No Panel	No Panel No Panel	4.75 x 2.00 121 x 51	5.50 x 4.94 140 x 125	— —	2.62 66	0.54 14	1.38 35	3.00 76	— —	— —
A604CH	6.00 x 4.00 x 3.00 152 x 102 x 76	16	508A	A6P4	A6P4G	4.88 x 2.88 124 x 73	6.75 x 2.00 171 x 51	7.50 x 4.94 191 x 125	2.53 64	2.62 66	0.54 14	2.38 60	3.00 76	0.31 8	0.56 14
A806CH	8.00 x 6.00 x 3.50 203 x 152 x 89	14	50, 50E	A8P6	A8P6G	6.75 x 4.88 171 x 124	8.75 x 4.00 222 x 102	9.50 x 6.94 241 x 176	3.03 77	3.12 79	0.56 14	2.38 60	5.00 127	0.25 6	0.62 16
A8063CHS	8.00 x 6.00 x 3.50 203 x 152 x 89	14	50, 50E	A8P6	A8P6G	6.75 x 4.88 171 x 124	8.75 x 4.00 222 x 102	9.50 x 6.94 241 x 176	3.03 77	3.12 79	0.56 14	2.38 60	5.00 127	0.25 6	0.62 16
A4044CH	4.00 x 4.00 x 4.00 102 x 102 x 102	16	508A	No Panel	No Panel	No Panel No Panel	4.75 x 2.00 121 x 51	5.50 x 4.94 140 x 125	— —	3.62 92	0.54 14	1.38 35	3.00 76	— —	— —
A6044CH	6.00 x 4.00 x 4.00 152 x 102 x 102	16	508A	A6P4	A6P4G	4.88 x 2.88 124 x 73	6.75 x 2.00 171 x 51	7.50 x 4.94 191 x 125	3.53 90	3.62 92	0.54 14	2.38 60	3.00 76	0.31 8	0.56 14
A606CH	6.00 x 6.00 x 4.00 152 x 152 x 102	16	50, 50E	A6P6	A6P6G	4.88 x 4.88 124 x 73	6.75 x 4.00 171 x 102	7.50 x 6.94 191 x 176	3.53 90	3.62 92	0.54 14	2.38 60	5.00 127	0.31 8	0.56 14
A808CH	8.00 x 8.00 x 4.00 203 x 203 x 102	14	50, 50E	A8P8	A8P8G	6.75 x 6.88 171 x 175	8.75 x 6.00 222 x 152	9.50 x 8.94 241 x 227	3.53 90	3.62 92	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A12064CH	12.00 x 6.00 x 4.00 305 x 152 x 102	14	50, 50E	A12P6	A12P6G	10.75 x 4.88 273 x 124	12.75 x 4.00 324 x 102	13.50 x 6.94 343 x 176	3.53 90	3.62 92	0.56 14	1.00 25	5.00 127	0.25 6	0.62 16
A1008CH	10.00 x 8.00 x 4.00 254 x 203 x 102	14	50, 50E	A10P8	A10P8G	8.75 x 6.88 222 x 175	10.75 x 6.00 273 x 152	11.50 x 8.94 292 x 227	3.53 90	3.62 92	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A1008CHS	10.00 x 8.00 x 4.00 254 x 203 x 102	14	50, 50E	A10P8	A10P8G	8.75 x 6.88 222 x 175	10.75 x 6.00 273 x 152	11.50 x 8.94 292 x 227	3.53 90	3.62 92	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A1210CH	12.00 x 10.00 x 5.00 305 x 254 x 127	14	50, 50E	A12P10	A12P10G	10.75 x 8.88 273 x 226	12.75 x 8.00 324 x 203	13.50 x 10.94 343 x 278	4.53 115	4.62 117	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A1210CHS	12.00 x 10.00 x 5.00 305 x 254 x 127	14	50, 50E	A12P10	A12P10G	10.75 x 8.88 273 x 226	12.75 x 8.00 324 x 203	13.50 x 10.94 343 x 278	4.53 115	4.62 117	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A8066CH	8.00 x 6.00 x 6.00 203 x 152 x 152	14	50, 50E	A8P6	A8P6G	6.75 x 4.88 171 x 124	8.75 x 4.00 222 x 102	9.50 x 6.94 241 x 176	5.53 140	5.62 143	0.56 14	1.00 25	5.00 127	0.25 6	0.62 16
A8086CH	8.00 x 8.00 x 6.00 203 x 203 x 152	14	50, 50E	A8P8	A8P8G	6.75 x6.88 171 x 175	8.75 x 6.00 222 x 152	9.50 x 8.94 241 x 227	5.53 140	5.62 143	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A10086CH	10.00 x 8.00 x 6.00 254 x 203 x 152	14	50, 50E	A10P8	A10P8G	8.75 x 6.88 222 x 175	10.75 x 6.00 273 x 152	11.50 x 8.94 292 x 227	5.53 140	5.62 143	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A14086CH	14.00 x 8.00 x 6.00 356 x 203 x 152	14	50, 50E	A14P8	A14P8G	12.75 x 6.88 324 x 175	14.75 x 6.00 375 x 152	15.50 x 8.94 394 x 227	5.53 140	5.62 143	0.56 14	1.00 25	7.00 178	0.25 6	0.62 16
A10106CH	10.00 x 10.00 x 6.00 254 x 254 x 152	14	50, 50E	A10P10	A10P10G	8.75 x 8.88 222 x 226	10.75 x 8.00 273 x 203	11.50 x 10.94 292 x 278	5.53 140	5.62 143	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A16106CH	16.00 x 10.00 x 6.00 406 x 254 x 152	14	50, 50E	A16P10	A16P10G	14.75 x 8.88 375 x 226	16.75 x 8.00 425 x 203	17.50 x 10.94 445 x 278	5.53 140	5.62 143	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A1212CH	12.00 x 12.00 x 6.00 305 x 305 x 152	14	50, 50E	A12P12	A12P12G	10.75 x 10.88 273 x 276	12.75 x 10.00 324 x 254	13.50 x 12.94 343 x 329	5.53 140	5.62 143	0.56 14	1.00 25	11.00 279	0.25 6	0.62 16

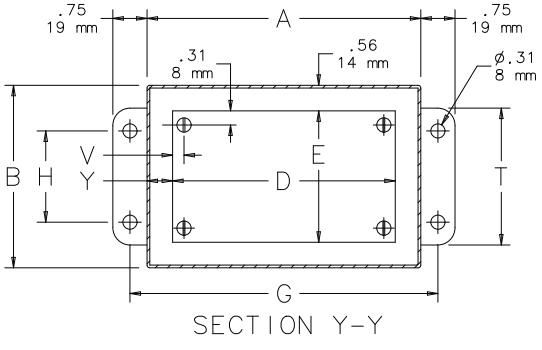
Catalog Number	AxBxC in /mm	Gauge	UL Listed	Panel	Conductive Panel	Panel Size D x E in /mm	Mounting G x H in /mm	Overall L x W in /mm	F in /mm	J in /mm	K in /mm	P in /mm	T in /mm	V in /mm	Y in /mm
A1412CH	14.00 x 12.00 x 6.00 356 x 305 x 152	14	50, 50E	A14P12	~~A14P12G~~	12.75 x 10.88 324 x 276	14.75 x 10.00 375 x 254	15.50 x 12.94 394 x 329	5.53 140	5.62 143	0.56 14	1.00 25	11.00 279	0.25 6	0.62 16
A1412CHS	14.00 x 12.00 x 6.00 356 x 305 x 152	14	50, 50E	A14P12	A14P12G	12.75 x 10.88 324 x 276	14.75 x 10.00 375 x 254	15.50 x 12.94 394 x 329	5.53 140	5.62 143	0.56 14	1.00 25	11.00 279	0.25 6	0.62 16
A1614CH	16.00 x 14.00 x 6.00 406 x 356 x 152	14	50, 50E	A16P14	A16P14G	14.75 x 12.88 375 x 327	16.75 x 12.00 425 x 305	17.50 x 14.94 445 x 379	5.53 140	5.62 143	0.56 14	1.00 25	13.00 330	0.25 6	0.62 16
A1614CHS	16.00 x 14.00 x 6.00 406 x 356 x 152	14	50, 50E	A16P14	A16P14G	14.75 x 12.88 375 x 327	16.75 x 12.00 425 x 305	17.50 x 14.94 445 x 379	5.53 140	5.62 143	0.56 14	1.00 25	13.00 330	0.25 6	0.62 16
A10108CH	10.00 x 10.00 x 8.00 254 x 254 x 203	14	50, 50E	A10P10	A10P10G	8.75 x 8.88 222 x 226	10.75 x 8.00 273 x 203	11.50 x 10.94 292 x 278	5.53 140	5.62 143	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A12108CH	12.00 x 10.00 x 8.00 305 x 254 x 203	14	50, 50E	A12P10	A12P10G	10.75 x 8.88 273 x 226	12.75 x 8.00 324 x 203	13.50 x 10.94 343 x 278	7.53 191	7.62 194	0.56 14	1.00 25	9.00 229	0.25 6	0.62 16
A14128CH	14.00 x 12.00 x 8.00 356 x 305 x 203	14	50, 50E	A14P12	A14P12G	12.75 x 10.88 324 x 276	14.75 x 10.00 375 x 254	15.50 x 12.94 394 x 329	7.53 191	7.62 194	0.56 14	1.00 25	11.00 279	0.25 6	0.62 16
A16148CH	16.00 x 14.00 x 8.00 406 x 356 x 203	14	50, 50E	A16P14	A16P14G	14.75 x 12.88 375 x 327	16.75 x 12.00 425 x 305	17.50 x 14.94 445 x 379	7.53 191	7.62 194	0.56 14	1.00 25	13.00 330	0.25 6	0.62 16
A161410CH	16.00 x 14.00 x 10.00 406 x 356 x 254	14	50, 50E	A16P14	A16P14G	14.75 x 12.88 375 x 327	16.75 x 12.00 425 x 305	17.50 x 14.94 445 x 379	9.53 242	9.62 244	0.56 14	1.00 25	13.00 330	0.25 6	0.62 16

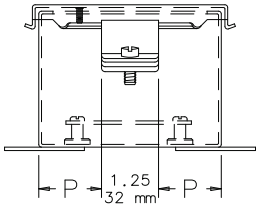
Catalog numbers ending in "S" are hinged on short side.

Purchase panels separately. Optional stainless steel, conductive, composite and aluminum panels are available for most sizes.

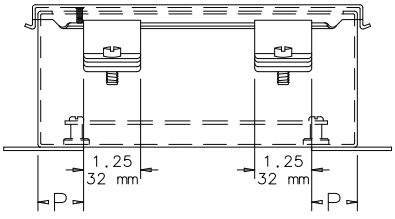








View showing clamp end of box when one clamp is used.



View showing clamp end of box when two clamps are used. When A=8.00 (203mm) or more, use two clamps.

Product Selection—100-C/104-C Contactors

- Compact sizes from 4...55 kW/5...75 Hp (9...97 A)
- Common accessories for all contactor sizes
- Front and side mounting of auxiliary contacts
- Electronic and pneumatic timing modules
- Space-saving coil-mounted control modules
- Reversible coil terminations (line or load side)
- All devices can be attached to 35 mm DIN mounting Rail
- Environmentally friendly materials


100-C Contactor


104-C Reversing Contactor

The Bulletin 100-C/104-C IEC contactor family, along with a wide range of common accessories and Bulletin 193 solid-state overload relays, provides the most compact and flexible starter component system available.

3-Pole AC- and DC-operated Contactors

Rated Operational Current I_e [A]		Ratings for switching AC motors - AC-2, AC-3, AC-4										Auxiliary Contacts		Cat. No.(1)
		3-phase kW (50 Hz)				Hp (60 Hz)								
40 °C (104 °F)		230V	400/415V	500V	690V	1-Phase		3-Phase						
AC-3	AC-1					115V	230V	200V	230V	460V	575V	N.O.	N.C.	
9	32	3	4	4	4	1/2	1-1/12	2	2	5	7-1/12	1	0	100-C09⊗10
												0	1	100-C09⊗01
12	32	4	5.5	5.5	5.5	1/2	2	3	3	7-1/2	10	1	0	100-C12⊗10
												0	1	100-C12⊗01
16	32	5.5	7.5	7.5	7.5	1	3	5	5	10	15	1	0	100-C16⊗10
												0	1	100-C16⊗01
23	32	7.5	11	13	10	2	3	5	7-1/2	15	15	1	0	100-C23⊗10
												0	1	100-C23⊗01
30	65	10	15	15	15	2	5	7-1/2	10	20	25	0	0	100-C30⊗00
												1	0	100-C30⊗10
												0	1	100-C30⊗01
37	65	11	18.5/20	20	18.5	3	5	10	10	25	30	0	0	100-C37⊗00
												1	0	100-C37⊗10
												0	1	100-C37⊗01
43	85	13	22	25	22	3	7-1/2	10	15	30	30	0	0	100-C43⊗00
												1	0	100-C43⊗10
												0	1	100-C43⊗01
55	85	15	30	30	30	5	10	15	20	40	40	0	0	100-C55⊗00
												1	0	100-C55⊗10
												0	1	100-C55⊗01
60	100	18.5	32	37	32	5	10	15	20	40	50	0	0	100-C60⊗00
												1	0	100-C60⊗10
												0	1	100-C60⊗01
72	100	22	40	45	40	5	15	20	25	50	60	0	0	100-C72⊗00
												1	0	100-C72⊗10
												0	1	100-C72⊗01
85	100	25	45	55	45	7-1/2	15	25	30	60	60	0	0	100-C85⊗00
												1	0	100-C85⊗10
												0	1	100-C85⊗01
97	130	30	55	55	55	10	20	30	30	75	75	0	0	100-C97⊗00
												1	0	100-C97⊗10
												0	1	100-C97⊗01

(1) For screwless terminals on 100-C09...C16, add an "R" after the letter "C" in the catalog number. Example: Cat. No. 100-C09⊗10 becomes 100-CR09⊗10. The AC-1 rating for the 100-CR is limited to 25 A.

⊗ Coil voltage code and terminal position—see page 19

Coil Voltage Codes

The Cat. No. as listed is incomplete. Select a coil voltage code from the table below to complete the Cat. No. Example: 120V, 60 Hz: Cat. No. 100-C09⊗10 becomes Cat. No.100-C09D10.

AC Voltages [V]	12	24	32	36	42	48	100	100…110	110	120	127	200	200…220	208	208…240
50 Hz	R	K	V	W	X	Y	KP	—	D	P	S	KG	L	—	—
60 Hz	Q	J	—	V	—	X	—	KP	—	D	—	—	KG	H	L
50/60 Hz	—	KJ	—	—	—	KY	KP	—	KD	—	—	KG	KL[1]	—	—

(1) Not available on 100/104-C90 or -C97 contactors.

AC Voltages [V]	220…230	230	230…240	240	277	347	380	380…400	400	400…415	440	480	500	550	600
50 Hz	F	—	VA	T	—	—	—	N	—	G	B	—	M	C	—
60 Hz	—	—	—	A	T	I	E	—	—	—	N	B	—	—	C
50/60 Hz	KL[1]	KF	—	KA	—	—	—	—	KN	—	KB	—	—	—	—

(1) Not available on 100/104-C90 or -C97 contactors.

DC Voltages [V]		9	12	24	24	36	36…48	48	48…72	60	64
100-C09…C55	Electronic with Integrated Diode	—	EQ	EJ	QJ[1]	—	EW	—	EY	—	—
100-C60…C97	with Integrated Diode	DR	DQ	DJ	—	DW	—	DY	—	DZ	DB

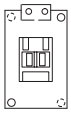
(1) "QJ" coil has faster dropout time (16…21 ms).

DC Voltages [V]		72	80	110	110…125	115	125	220	220…250	230	250
100-C09…C55	Electronic with Integrated Diode	—	—	—	ED	—	—	—	EA	—	—
100-C60…C97	with Integrated Diode	DG	DE	DD	—	DP	DS	DA	—	DF	DT

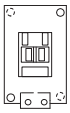
Coil Terminal Position

All contactors are delivered with the coil terminals located on the line side.

For load side coil terminations, insert a "U" prior to the coil voltage code. Ordering example: Cat. No. 100-C09UD10.

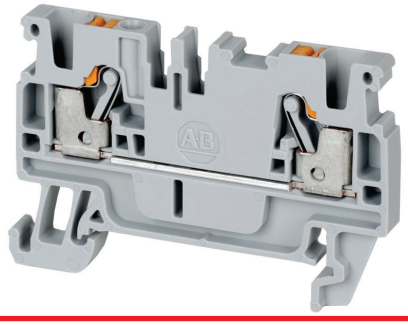


Cat. No.100-C09⊗10 Line Side



Cat. No.100-C09U⊗10 Load Side

1492-P4



Terminal Blocks—Dimensions (W x H x L): 6.1 x 39.5 x 60 mm							
Color		**Cat. No.**	**Pkg. Qty.**	**Color**		**Cat. No.**	**Pkg. Qty.**
	Gray	1492-P4	100		Green	1492-P4-G	100
	Red	1492-P4-RE	100		Yellow	1492-P4-Y	100
	Blue	1492-P4-B	100		Orange	1492-P4-OR	100
	Black	1492-P4-BL	100		White	1492-P4-W	100

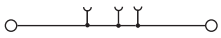
Specifications — Single-level Feed-through Terminal Block			
Certifications	**/CSA**	**IEC**	**ATEX**
Voltage Rating	600V AC/DC	800V AC/DC	550V AC/DC
Maximum Current	30 A	32 A	30 A
Wire Range (Rated Cross Section)	26…10 AWG	4 mm^2	4 mm^2
Wire Strip Length	0.47 in. (12 mm)		
Density	49 pcs/ft (163 pcs/m)		
Housing Temperature Range	-76…+266°F (-60…+130 °C)		

Accessories		Cat. No.	Pkg. Qty.
Mounting Rails, End Barriers, End Anchors and Retainers			
Mounting Rail 1 m Symmetrical DIN	Steel	199-DR1	10
	Aluminum	1492-DR5	10
	Hi-Rise (Aluminum)	1492-DR6	2
	Angled (Steel)	1492-DR7	2
End Barriers	Gray	1492-EBP4	50
	Blue	1492-EBP4-B	50
	Yellow	1492-EBP4-Y	50
End Retainer		1492-ERL35	20
End Anchor DIN Rail	Normal Duty	1492-EAJ35	100
	Heavy Duty	1492-EAHJ35	50
	Normal Duty	1492-EAP35	50

Accessories		Cat. No.	Pkg. Qty.
Center Jumpers(1)			
2-pole	Orange	1492-CJP4-2	60
3-pole		1492-CJP4-3	20
4-pole		1492-CJP4-4	
5-pole		1492-CJP4-5	
6-pole		1492-CJP4-6	
7-pole		1492-CJP4-7	
8-pole		1492-CJP4-8	
9-pole		1492-CJP4-9	
10-pole		1492-CJP4-10	
50-pole		1492-CJP4-50	5
Test Plugs			
Test Plugs	Start Test Plug	1492-PTPS	50
	Test Plug	1492-P4TPE	50
Marking Systems			
ClearMark Advanced and ClearPlot Basic Marker Cards		1492-MR6X8 (120/card)	5 cards
ClearMultiprint Markers		1492-MT6X8 (600/roll)	1 roll

(1) Available in orange as standard, to order other colors add the appropriate suffix to the catalog number listed: Blue =B, Red = RE. Example for a red 2-pole center jumper, the catalog number is 1492-CJP4-4-RE.

Wiring Diagram



IMPORTANT See page 94 for ferrule selection.

UL 489 DIN rail miniature circuit breakers



Optimum product quality, tested reliability and safety stand for the best protection of personnel, installations and plant. Eaton's FAZ-NA DIN rail mountable circuit breakers are designed for use in branch service applications.



Features

- Complete range of UL® 489 Listed DIN rail mounted miniature circuit breakers, up to 40A current rating
- Rated for 10 kAIC at 277/480 Vac
- Current limiting design provides fast short-circuit interruption, reducing the let-through energy that can damage the circuit
- Suitable for branch circuit device protection
- Thermal-magnetic overcurrent protection
  - Three levels of short-circuit protection, categorized by B, C and D curves
- Trip-free design—breaker can not be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- SWD (switching duty)—suitable for switching fluorescent lighting loads ($I_n \leq 20A$)
- Fulfill UL 489, CSA® C22.2 No. 5 and also IEC 60947-2 Standard
- For use in applications for which UL 1077 or CSA C22.2 No. 235 are also allowed
- Field-installable shunt trip and auxiliary switch subsequent mounting
- Separate version for ring tongue connection (Type FAZ-RT); terminal screws can be removed (on both sides)
- Module width of only 17.7 mm (per pole)
- Contact position indicator (red/green)
- Easy installation on DIN rail
- Possibility for sealing the toggle in ON or OFF position
- Complements UL 1077 offering

Powering Business Worldwide

FAZ-NA UL 489 miniature circuit breakers catalog numbering system

FAZ - C-15/1 - NA-SP

FAZ - C 6 / 1 - NA - SP

Breaker Family
- **FAZ** = FAZ UL circuit breaker

Trip Characteristic
- **B** = 3–5X I_n ❶
- **C** = 5–10X I_n ❶
- **D** = 10–20X I_n ❶

Ampere Rating

0.5 = 0.5A	**10** = 10A
1 = 1A	**13** = 13A
1.5 = 1.5A	**15** = 15A
2 = 2A	**16** = 16A
3 = 3A	**20** = 20A
4 = 4A	**25** = 25A
5 = 5A	**30** = 30A
6 = 6A	**32** = 32A
7 = 7A	**35** = 35A
8 = 8A	**40** = 40A

Number of Poles
- **1** = Single-pole
- **2** = Two-pole
- **3** = Three-pole

Terminal
- **NA** = UL 489 branch circuit with screw terminals
- **RT** = UL 489 branch circuit with ring tongue terminals
- **DC** = UL 489 branch circuit at 125 Vdc per pole

Single Packaging
- **SP** = Single packaging for C and D curve, single-pole only
- **Blank** = Standard packaging

❶ I_n = Rated current for instantaneous trip characteristics.

FAZ-NA UL 489 circuit breakers—10 kAIC

Amperes	Single-Pole ❶ Catalog Number	Two-Pole ❶ Catalog Number	Three-Pole ❶ Catalog Number
B Curve (3–5X I_n Current Rating)			
1	FAZ-B1/1-NA	FAZ-B1/2-NA	FAZ-B1/3-NA
1.5	FAZ-B1.5/1-NA	FAZ-B1.5/2-NA	FAZ-B1.5/3-NA
2	FAZ-B2/1-NA	FAZ-B2/2-NA	FAZ-B2/3-NA
3	FAZ-B3/1-NA	FAZ-B3/2-NA	FAZ-B3/3-NA
4	FAZ-B4/1-NA	FAZ-B4/2-NA	FAZ-B4/3-NA
5	FAZ-B5/1-NA	FAZ-B5/2-NA	FAZ-B5/3-NA
6	FAZ-B6/1-NA	FAZ-B6/2-NA	FAZ-B6/3-NA
7	FAZ-B7/1-NA	FAZ-B7/2-NA	FAZ-B7/3-NA
8	FAZ-B8/1-NA	FAZ-B8/2-NA	FAZ-B8/3-NA
10	FAZ-B10/1-NA	FAZ-B10/2-NA	FAZ-B10/3-NA
13	FAZ-B13/1-NA	FAZ-B13/2-NA	FAZ-B13/3-NA
15	FAZ-B15/1-NA	FAZ-B15/2-NA	FAZ-B15/3-NA
16	FAZ-B16/1-NA	FAZ-B16/2-NA	FAZ-B16/3-NA
20	FAZ-B20/1-NA	FAZ-B20/2-NA	FAZ-B20/3-NA
25	FAZ-B25/1-NA	FAZ-B25/2-NA	FAZ-B25/3-NA
30	FAZ-B30/1-NA	FAZ-B30/2-NA	FAZ-B30/3-NA
32	FAZ-B32/1-NA	FAZ-B32/2-NA	FAZ-B32/3-NA
35 ❸	FAZ-B35/1-NA	FAZ-B35/2-NA	FAZ-B35/3-NA
40 ❸	FAZ-B40/1-NA	FAZ-B40/2-NA	FAZ-B40/3-NA

Amperes	Single-Pole ❶❷ Catalog Number	Two-Pole ❶ Catalog Number	Three-Pole ❶ Catalog Number
C Curve (5–10X I_n Current Rating)			
0.5	FAZ-C0.5/1-NA-SP	FAZ-C0.5/2-NA	FAZ-C0.5/3-NA
1	FAZ-C1/1-NA-SP	FAZ-C1/2-NA	FAZ-C1/3-NA
1.5	FAZ-C1.5/1-NA-SP	FAZ-C1.5/2-NA	FAZ-C1.5/3-NA
2	FAZ-C2/1-NA-SP	FAZ-C2/2-NA	FAZ-C2/3-NA
3	FAZ-C3/1-NA-SP	FAZ-C3/2-NA	FAZ-C3/3-NA
4	FAZ-C4/1-NA-SP	FAZ-C4/2-NA	FAZ-C4/3-NA
5	FAZ-C5/1-NA-SP	FAZ-C5/2-NA	FAZ-C5/3-NA
6	FAZ-C6/1-NA-SP	FAZ-C6/2-NA	FAZ-C6/3-NA
7	FAZ-C7/1-NA-SP	FAZ-C7/2-NA	FAZ-C7/3-NA
8	FAZ-C8/1-NA-SP	FAZ-C8/2-NA	FAZ-C8/3-NA
10	FAZ-C10/1-NA-SP	FAZ-C10/2-NA	FAZ-C10/3-NA
13	FAZ-C13/1-NA-SP	FAZ-C13/2-NA	FAZ-C13/3-NA
15	FAZ-C15/1-NA-SP	FAZ-C15/2-NA	FAZ-C15/3-NA
16	FAZ-C16/1-NA-SP	FAZ-C16/2-NA	FAZ-C16/3-NA
20	FAZ-C20/1-NA-SP	FAZ-C20/2-NA	FAZ-C20/3-NA
25	FAZ-C25/1-NA-SP	FAZ-C25/2-NA	FAZ-C25/3-NA
30	FAZ-C30/1-NA-SP	FAZ-C30/2-NA	FAZ-C30/3-NA
32	FAZ-C32/1-NA-SP	FAZ-C32/2-NA	FAZ-C32/3-NA
35 ❸	FAZ-C35/1-NA-SP	FAZ-C35/2-NA	FAZ-C35/3-NA
40 ❸	FAZ-C40/1-NA-SP	FAZ-C40/2-NA	FAZ-C40/3-NA

Amperes	Single-Pole ❶❷ Catalog Number	Two-Pole ❶ Catalog Number	Three-Pole ❶ Catalog Number
D Curve (10–20X I_n Current Rating)			
0.5	FAZ-D0.5/1-NA-SP	FAZ-D0.5/2-NA	FAZ-D0.5/3-NA
1	FAZ-D1/1-NA-SP	FAZ-D1/2-NA	FAZ-D1/3-NA
1.5	FAZ-D1.5/1-NA-SP	FAZ-D1.5/2-NA	FAZ-D1.5/3-NA
2	FAZ-D2/1-NA-SP	FAZ-D2/2-NA	FAZ-D2/3-NA
3	FAZ-D3/1-NA-SP	FAZ-D3/2-NA	FAZ-D3/3-NA
4	FAZ-D4/1-NA-SP	FAZ-D4/2-NA	FAZ-D4/3-NA
5	FAZ-D5/1-NA-SP	FAZ-D5/2-NA	FAZ-D5/3-NA
6	FAZ-D6/1-NA-SP	FAZ-D6/2-NA	FAZ-D6/3-NA
7	FAZ-D7/1-NA-SP	FAZ-D7/2-NA	FAZ-D7/3-NA
8	FAZ-D8/1-NA-SP	FAZ-D8/2-NA	FAZ-D8/3-NA
10	FAZ-D10/1-NA-SP	FAZ-D10/2-NA	FAZ-D10/3-NA
13	FAZ-D13/1-NA-SP	FAZ-D13/2-NA	FAZ-D13/3-NA
15	FAZ-D15/1-NA-SP	FAZ-D15/2-NA	FAZ-D15/3-NA
16	FAZ-D16/1-NA-SP	FAZ-D16/2-NA	FAZ-D16/3-NA
20	FAZ-D20/1-NA-SP	FAZ-D20/2-NA	FAZ-D20/3-NA
25	FAZ-D25/1-NA-SP	FAZ-D25/2-NA	FAZ-D25/3-NA
30	FAZ-D30/1-NA-SP	FAZ-D30/2-NA	FAZ-D30/3-NA
32	FAZ-D32/1-NA-SP	FAZ-D32/2-NA	FAZ-D32/3-NA
35 ❸	FAZ-D35/1-NA-SP	FAZ-D35/2-NA	FAZ-D35/3-NA
40 ❸	FAZ-D40/1-NA-SP	FAZ-D40/2-NA	FAZ-D40/3-NA

❶ For ring tongue terminals, remove suffix NA and add suffix RT.

❷ For single packaging on single-pole C and D curves only, add suffix SP when ordering.

❸ 240 Vac only.

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Electrical Sector
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Eaton.com

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Powering Business Worldwide

800F Pilot Lights – Monolithic



Lens Color	Lamp Voltage	Cat. No.
Green	24V AC/DC	800FD-P3N3
	120V AC	800FD-P3N5
Red	24V AC/DC	800FD-P4N3
	120V AC	800FD-P4N5
Yellow	24V AC/DC	800FD-P5N3
	120V AC	800FD-P5N5
Blue	24V AC/DC	800FD-P6N3
	120V AC	800FD-P6N5
Clear	24V AC/DC	800FD-P7N3
	120V AC	800FD-P7N5

800F Potentiometer Operators



Resistive Element (Ω)	Cat. No. (1)
150	800FP-POT1
500	800FP-POT2
1000	800FP-POT3
2500	800FP-POT4
5000	800FP-POT5
10,000	800FP-POT6

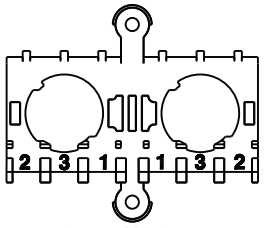
(1) Only available in Position 1 for a 3-hole enclosure, Positions 1 and/or 5 for a 5-hole enclosure, Positions 1 and/or 7 for a 7-hole enclosure, and positions 1 and/or 9 for a 9-hole enclosure. No latches are required.

800F Hole Plug

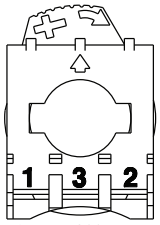


Color	Cat. No.
Black plastic	800F-N2

1-, 2-, and 3-speed Contact Block Assemblies



Cat. No. 800FC-ALP



Cat. No. 800F-ALP

Operator Type	Interlock Type	Composite Cat. No.	Separate Catalog Numbers			
			Latch Cat. No.	Contact Block Location 1 Cat. No.	Contact Block Location 2 Cat. No.	Contact Block Location 3 Cat. No.
1-speed	No interlock	800F-PX10E	800F-ALP	–	–	800F-X10E
	Electrical interlock	800F-PX11C	800F-ALP	800F-X01B		
	Mechanical interlock (1)	800F-LX20C	800FC-ALP	–		
	Electrical and mechanical interlock (1)	800F-LX22C	800FC-ALP	800F-X01B		
2-speed	No interlock	800F-PX20C	800F-ALP	–	800F-X10N (Speed 2)	800F-X10E (Speed 1)
	Electrical interlock	800F-PX21C	800F-ALP	800F-X01B		
	Mechanical interlock (1)	800F-LX40C	800FC-ALP	–		
	Electrical and mechanical interlock (1)	800F-LX42C	800FC-ALP	800F-X01B		
3-speed	No interlock	800F-PX30C (2)	800F-ALP	800F-X10N	800F-X10E (Speed 2)	800F-X10M (Speed 1) (3)
	Mechanical interlock (1)	800F-LX60C	800FC-ALP	800F-X10N (Speed 3)		

(1) When ordering separate components, two pieces of each contact block must be ordered, one for each operator.
(2) Contact blocks come preassembled onto latch.
(3) For proper operation, Cat. No. 800F-X10M must be mounted in position 3 of either the mechanical or standard latch.

Beacons
Steady-On Halogen
50 Series

Edwards 50SIN Series steady-on Halogen beacons are signaling devices, designed for indoor or outdoor applications where a continuous (steady-on) light source is required. The base is cast aluminum and can function as a junction box. The double fresnel lens is made of shatter-resistant polycarbonate and optically engineered to maximize light distribution and viewing distance.

Features and Specifications

- Halogen light source
- Shatter-resistant double fresnel polycarbonate lens
- Cast aluminum base can function as a junction box
- Suitable for use in indoor and outdoor applications
- Designed for 4" octagonal box
- Option for panel or conduit mounting
- Operating temperature range: -31°F to 150°F (-35°C to 66°C)



Ordering Information

Description	Cat. No.	Operating Voltage[1]	Current	Lamp Ratings	Lens Colors	Replacement Lens	Replacement Lamp
Steady-on Beacon Halogen	**50SINR-N5-40WH**	120V AC	0.29 A	40 watts, 265 lumens[2] 3328 candela 20,000 hours[3]	Red	92-LR	50LMP-40WH
	50SINA-N5-40WH	120V AC	0.29 A		Amber	92-LA	50LMP-40WH
	50SINB-N5-40WH	120V AC	0.29 A		Blue	92-LB	50LMP-40WH
	50SING-N5-40WH	120V AC	0.29 A		Green	92-LG	50LMP-40WH
	50SINM-N5-40WH	120V AC	0.29 A		Magenta	92-LM	50LMP-40WH
	50SINC-N5-40WH	120V AC	0.29 A		Clear	92-LC	50LMP-40WH

[1]AC voltage frequency is 50/60 Hz
[2]Bulb manufacturer's lumen rating
[3]Projected lamp life based on manufacturer's calculated lamp life at 65 fpm and 50% duty cycle.

Accessories

Description	Cat. No.
Corner Mount Bracket	**CBR**
Wall Mount Bracket	**WBR**
Lens Guard	**92-GRD**



CBR
Corner Mount Bracket



WBR
Wall Mount Bracket



92-GRD
Lens Guard

Signal Input Load Characteristics

These devices may be operated by PLCs with output characteristics that match the input load requirements of the signal.

Cat. No.	Operating Voltage[1]	Max. Off State Leakage Current (A)	Continuous On Current (A)	Surge (Inrush/Duration)
50SIN*-N5-40WH	120V AC	0.025	0.290	0.47 A / 8 mSecond

*Letter in this position designates lens color: A - amber, B - blue, C - clear, G - green, M - magenta or R - red

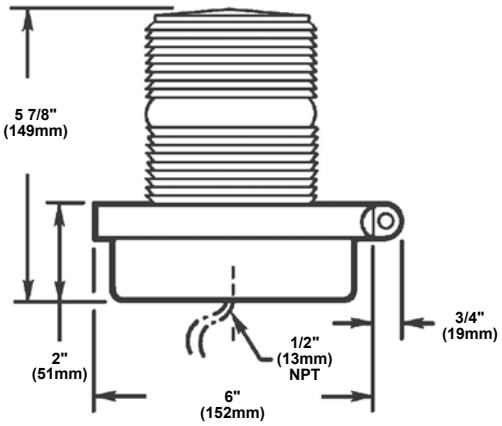


Beacons
Steady-On Halogen
50 Series

Weights and Dimensions

Cat. No.	Approx. Net Weight (lb.)	Approx. Shipping Weight (lb.)
50SIN*-N5-40WH	1.32	1.66
92-GRD	0.31	0.47
CBR	4.00	4.20
WBR	2.30	2.50

*Letter in this position designates lens color: A - amber, B - blue, C - clear, G - green, M - magenta or R - red



REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
ᐱᓕᑦᑕᒃ ᐃᖃᓗᐃᑦᑐᓴᖅᑕᐅᓯᒪᔪᑦ ᓕᒥᑎᑦ
NAME: Sandra Rousseau
DATE: 25/01/2024

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 034 **Referencing**
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : HILTI

Descriptions / comments fire stop

Comments of Professionnal :

stamp approval :

SHOP DRAWING REVIEW

THIS DRAWING HAS BEEN REVIEWED FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT ONLY. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITY FOR ERRORS OR OMISSIONS OR OF MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS.

X	NO COMMENT	Submission No.:	01
	SEE COMMENTS	Project No.:	19-9543
	AMEND & RESUBMIT	By:	WD
	REJECTED	Date:	01-30-2024

DILLON CONSULTING LIMITED

FIRESTOP BLOCK CFS-BL



Product description

- Ready-to-use, intumescent flexible block designed to seal medium to large size openings

Applications for use

- Temporary or permanent sealing of cables, cable trays and pipes in wall and floor openings
- Sealing single or multiple penetrations in small to large openings
- Temporary or permanent sealing of insulated and non-insulated metallic pipes and combustible pipe penetrations



Advantages

- Integrated “Grid-Tech” increases Annular Space up to 12” with no wire mesh
- Suitable for re-penetration or new penetrations
- Economical to use with short installation times
- Easy installation — no special tools required
- Ideal for use in floors — no forming required
- One sided wall systems available
- Halogen, asbestos and solvent free
- Operational immediately after installation
- Smoke resistant
- Completely dust and fiber free for “clean room” installation

Installation instructions

- See Hilti literature or third-party listings for complete application and installation details

Technical Data

Chemical basis	Polyurethane Foam
Color	Red
Recommended application temperature	40° F to 104° F (5° C to 40° C)
Storage and transportation temperature range	23° F to 104°F (-5° C to 40° C)
Temperature resistance range	5° F to 140°F (-15° C to 60° C)
Density	0.27 g/cm³
Mold and mildew performance	Class 0 (ASTM G21-96)
Tested in accordance with	UL 1479, CAN/ULC-S115, ASTM E814
Surface burning characteristics (ASTM E84)	Flame Spread 10 Smoke Development 15
Intumescent activation	392° F (200° C)
LEED VOC	5.4 g/L
Can be painted	Yes
Acoustics performance	52 (relates to specific construction) ASTM E90
Shelf life	Unlimited
Expansion ratio	1:3

Order designation	Sales pack quantity	Item number
CFS-BL Firestop Block	1	2030020
CFS-BL MC	20	3484119
CFS-BL Pallet	480	3541548

Dimensions	Size (LxWxH)
CFS-BL Firestop Block	8” x 5” x 2” (20x13x5cm)





FM APPROVED

cULus CLASSIFIED

HIGH-PERFORMANCE INTUMESCENT FIRESTOP SEALANT FS-ONE MAX



Product description

- Intumescent (expands when exposed to fire) firestop sealant that helps protect combustible and non-combustible penetrations for up to 4 hours fire rating

Applications for use

- For effectively sealing most common through penetrations in a variety of base materials
- For use on concrete, masonry and drywall
- Mixed and multiple penetrations
- Metal pipe penetrations: copper, steel and EMT
- Insulated metal pipe penetrations: steel and copper
- Plastic pipe penetrations: closed or vented

Advantages

- One product for a variety of common through penetrations
- Cost-effective, easy-to-use solution
- Water-based and paintable
- Industry-leading VOC results
- Ethylene glycol-free

Installation instructions

- See Hilti literature or third-party listings for complete application and installation details

Technical Data*

Chemical basis	Water-based acrylic dispersion
Approx. Density	84.3 lb/ft^3
Color	Red
Approx. cure time[1)]	2mm / 3 days
Application temperature range[2)]	35°F to 104° (1.5C to 40°C)
Temperature resistance range	-4°F to 212°F (-20°C to 100°C)
Storage Temperature	35°F to 77F (1.5°C to 25°C)
Tack free time	20mins (@ 73°F / 50% rel. humidity)
Shelf life	18 months
Temperature resistance range	-4°F to 212°F
Mold and mildew performance	Class 0 (ASTM G21-13)
Mold and mildew resistant	Yes
Expansion ratio (unrestricted, up to)	1:5
Paintable	Yes
Chemical resistance	Yes
Electrical resistance	Yes
FBC compatible (Lubrizol)	Yes
Intumescent	Yes
W-rating	Yes
M-rated	Yes
LEED VOC (input)	9 g/L
LEED V4 Compliant	Yes (CDPH v1.2-2017)
STC rating (ASTM E90)	62 (relates to specific construction)
Movement	±7.5%
Surface burning characteristics (ASTM E 84-14)	Flame Spread: 0 Smoke Development: 10
California State Fire Marshal approval	CSFM Listing 4485-1200:0108 for FS-ONE MAX Intumescent Firestop Sealant
Tested in accordance with	ASTM G21, ASTM E 90, CAN/ULC-S115, UL 1479, ASTM E 814 , ASTM E84

Order Information

Designation	Qty per package	Item number
FS-ONE MAX 10oz tube (1 case)	12x Firestop sealant FS-ONE MAX 10 oz cartridge	3530249
FS-ONE MAX 20oz foil (1 case)	25x Firestop sealant FS-ONE MAX 20 oz foil	3530250
FS-ONE MAX 10 oz cartridge	1x Firestop sealant FS-ONE MAX 10 oz cartridge	2101531
FS-ONE MAX 5 gallon pail	1x Firestop sealant FS-ONE MAX 5 gallon pail	2101533

CLASSIFIED C UL US
FILL, VOID OR CAVITY MATERIAL
FOR USE IN THROUGH-PENETRATION
FIRESTOP SYSTEMS
SEE UL FIRE RESISTANCE DIRECTORY
66Y7

Intertek

FM APPROVED

FBC SYSTEM COMPATIBLE
Visit fbcsystemcompatible.com.
FBC™ is a trademark of the Lubrizol Corporation.

Chemical resistant

Mold and mildew resistant

W rated SYSTEMS AVAILABLE

Volume per unit:
- Caulk tube = 10.5 fl. oz (18.9in^3)
- Foil = 600ml (36.4in^3)
- Pail = 5gal (1,155in^3)

1) At 75°F (24°C) and 50% relative humidity

2) For ambient and surface temperatures between 10°F (-12°C) and 35°F (1.5°C), the following conditions must apply:
- Substrate surfaces are clean and dry (e.g. free of dust, rust, grease, oil, dew, frost, ice, moisture, etc);
- Product maintained above 50°F (10°C) for a minimum of 24 hours prior to application;
- Product will not cure at ambient temperatures below 32°F / 0°C

Hilti Firestop
Saving lives through innovation and education

REVIEWED BY CONTRACTOR
PILITAK ENTERPRISES LTD
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NAME: Sandra Rousseau
DATE: 25/01/2024

Shop drawing list

PROJECT : Iqaluit Solid Waste Transfer Station		**Shop Drawing no :** ELE- 035 **Referencing**
Projet No: PP8058	Yvon Roy Entr. Élect. (1986) inc 300, St-Jean Baptiste Nord Princeville (Québec), G6L 5E2 tel : 819-364-5330	**Project manager :** Cathy Brisson

Manufacturer : CONTROLES INCO

Descriptions / comments

LAMECOID LIST FOR EQUIPMENT IDENTIFICATION

Comments of Professionnal :

1 inor typo highlighted in yellow below.
PNL-A-E is name used in drawings.

stamp approval

SHOP DRAWING REVIEW

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	REVIEWED
X	REVIEWED AS NOTED
	REVISE & RESUBMIT

DC SD NO. ELE-035

PROJECT NO. 19-9543(WTS)

BY K.Speidel

DATE 2024-01-26

DILLON CONSULTING

IQALUIT - SOLID WASTE TRANSFER STATION

PP8058

Lamecoide list for equipment

Size 1 : 10mm x 50mm, 1 line,4 mm high letters
white face, black core

copy		copy		copy	
1	PARKING RECEPT. B-1/3	1	PARKING RECEPT. B-5/7	1	PARKING RECEPT. B-9/11
1	PARKING RECEPT. B-13/15	1	SP-1 CONTROLLER - B-19	1	SP-1 - B-19
2	E-STOP B1	2	E-STOP B2	2	E-STOP B3
1	UNIT HEATER UH-1 - B-21	1	UNIT HEATER UH-2 - B-23	1	UNIT HEATER UH-3 - B-31
1	UNIT HEATER UH-4 - B-33	1	UNIT HEATER UH-5 - B-51	1	UNIT HEATER UH-6 - B-53
1	UNIT HEATER UH-7 - B-55	1	UNIT HEATER UH-8 - B-57	1	UNIT HEATER UH-9 -B-59
1	UNIT HEATER UH-10 - B-61	1	UNIT HEATER UH-11 - B-2	1	UNIT HEATER UH-12 - B-4
1	UNIT HEATER UH-13 - B-4	1	UNIT HEATER UH-14 - B-4	1	UNIT HEATER UH-15 - B-4
1	UNIT HEATER UH-16 - B-4	1	UNIT HEATER UH-17 - B-4	1	HEAT TRACE - B-37
1	HRV.1 - B-17	1	DT.1 - B-28	1	PUMP P1 - B-32
1	SH-1 CONTROL - B-35	1	HRU.1 CONTROL - B-40	1	B.1 CONTROL - B-42
1	GARAGE DOOR - B-47	1	GARAGE DOOR - B-49	1	GARAGE DOOR - B-45
1	GARAGE DOOR - B-43	1	GARAGE DOOR - B-44	1	GARAGE DOOR - B-46

IQALUIT - SOLID WASTE TRANSFER STATION

PP8058

Lamecoide list for equipment

Size 1 : 10mm x 50mm, 1 line,4 mm high letters
white face, black core

copy		copy		copy	
1	GARAGE DOOR - B-48	1	EXHAUST FAN EF-1 - B-39	1	EXHAUST FAN EF-2 - B-41

size 5 : 20mm x 90mm, 2 lines, 5mm high letters
white face, black core

copy		copy		copy	
1	ACTN.1 FEED FROM PNL-1	1	ACTN.2 FEED FROM PNL-1	1	HC1.1 FEED FROM PNL-1
1	P. B1 FEED FROM PNL-2-E	1	P. B2 FEED FROM PNL-2-E	1	P. B3 FEED FROM PNL-2-E
1	B1 FEED FROM PNL-3	1	B2 FEED FROM PNL-2-E	1	B3 FEED FROM PNL-2-E
1	FP-1 FEED FROM SPL-1 AND GEN	1	FP-2 FEED FROM SPL-1 AND GEN	1	JP-1 FEED FROM PNL-2-E
1	JP-2 FEED FROM PNL-2-E	1	P.GL1 FEED FROM PNL-2-E	1	P.GL2 FEED FROM PNL-2-E
1	STEEL BELT CONVEYOR FEED FROM PNL-3	1	BALE WRAPPER FEED FROM PNL-3	1	BALING UNIT FEED FROM PNL-3

IQALUIT - SOLID WASTE TRANSFER STATION

PP8058

Lamecoide list for equipment

size 5 : 20mm x 90mm, 2 lines, 5mm high letters
white face, black core

copy		copy		copy	
1	INFEED CONVEYOR FEED FROM SHREDDER PANEL	1	SHREDDER FEED FROM SHREDDER PANEL	1	SCREW AUGER CHAIN FEED FROM SHREDDER PANEL
1	ROTARY DRUM FEED FROM SHREDDER PANEL	1	DRAG CHAIN FEED FROM SHREDDER PANEL	1	PUSH ROD BIN FEED FROM SHREDDER PANEL
1	INCLINE SCREW FEED FROM SHREDDER PANEL	1	HORIZONTAL SCREW FEED FROM SHREDDER PANEL	1	DUST CONTROL FEED FROM SHREDDER PANEL

size B : 30mm x 90mm, 3 lines, 5mm high letters
white face, black core

copy		copy		copy	
1	PANEL CBD-1 1200A 347/600V MAIN DISTRIBUTION	1	TRANSFER SWITCH ATS -1 400A 347/600V	1	PANEL PNL-1 1200A 347/600V FEED FROM CBD-1
1	PANEL SPL-1 400A 347/600V FEED FROM CBD-1	1	PANEL PNL-2-E 400A 347/600V FEED FROM ATS-1	1	PANEL PNL-3 800A 277/480V FEED FROM T5
1	SHREDDER CONTROL PANEL 300A 277/480V FED FROM PNL-3	1	PANEL PNL-A-E 225A 120/208V FEED FROM T2	1	PANEL PNL-B 400A 120/208V FEED FROM T1

IQALUIT - SOLID WASTE TRANSFER STATION

PP8058

Lamecoide list for equipment

size B : 30mm x 90mm, 3 lines, 5mm high letters
white face, black core

copy		copy		copy	
1	PANEL PNL-C 225A 120/208V FEED FROM T3	1	PANEL PNL-D 100A 120/208V FEED FROM PNL-C	1	PANEL PNL-E 100A 120/208V FEED FROM T4
1	TRANSFO T1 75KVA 600-120/208V FEED FROM PNL-2-E	1	TRANSFO T2 45KVA 600-120/208V FEED FROM PNL-2-E	1	TRANSFO T3 45KVA 600-120/208V FEED FROM PNL-2-E
1	TRANSFO T4 15KVA 600-120/208V FEED FROM PNL-2-E	1	TRANSFO T5 500KVA 600-277/480V FEED FROM PNL-1	1	HRU.1 200A 600V F:110A FEED FROM PNL-1