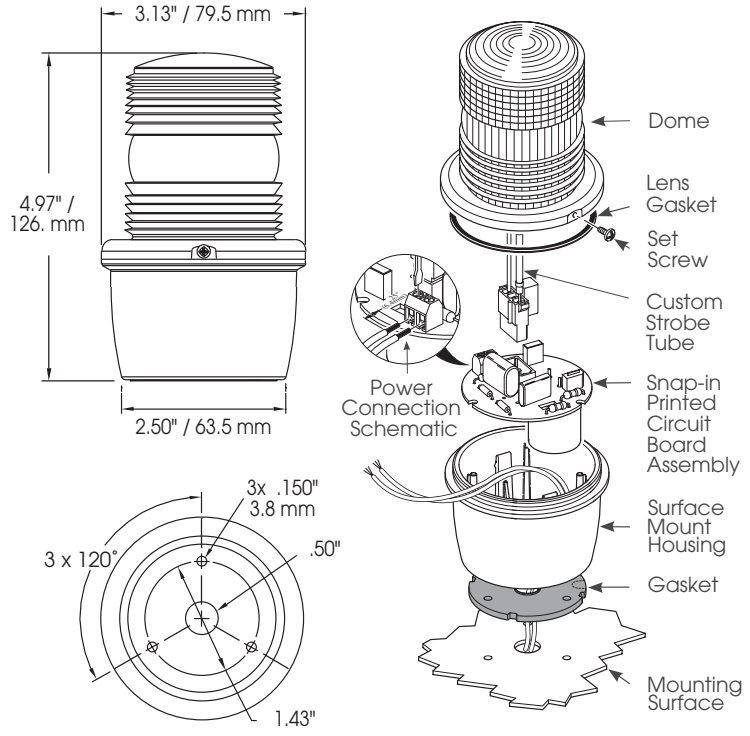
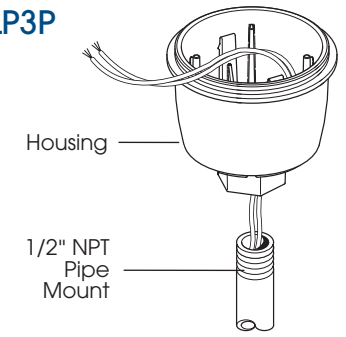
STREAMLINE® LOW PROFILE STROBE LIGHT (LP3S/LP3P/LP3T)

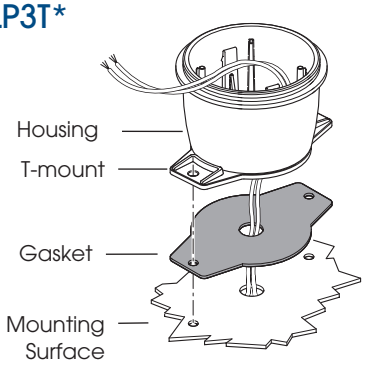
LP3S



LP3P



LP3T*



*LP3T-120 & 240VAC shown

SPECIFICATIONS

Lamp Life:	7,000 Hours	7,000 Hours
Light Source:	Strobe tube	Strobe tube
Operating Temperature:	-31°F to 150°F	-35°C to 66°C
Net Weight:	7.3 oz.	206.96 g
Shipping Weight:	8.5 oz.	240.98 g
Diameter:	3.125"	79.4 mm
Height (from bottom):		
LP3P	5.7"	144.8 mm
LP3S	4.97"	126.2 mm
LP3T	5.1"	129.5 mm

HOW TO ORDER

- Specify model, voltage and color
- Optional Accessories: Wire/Dome Guard (LP3G) for LP3S, LP3T

REPLACEMENT PARTS

Description	***Part Number***	***Description***	***Part Number***
Dome, Amber	K8589063A	Dome, Red	K8589063A-04
Dome, Blue	K8589063A-01	Strobe Tube	K149130A
Dome, Clear	K8589063A-02	Gasket Kit [1]	K858900353A
Dome, Green	K8589063A-03		

[1] Includes gasket for LP3P, LP3S, and LP3T

2645 Federal Signal Dr., University Park, IL 60484 Tel: 708.534.4756 Fax: 708.534.4852 www.federalsignal-indust.com

LINEAR AIR PUMP
HIBLOW Japan

HP series

HP-100 / HP-120 / HP-150 / HP-200

- Oxygen supply for fish breeding
- Septic tank
  (Biological contact aeration)
- Air injection for bubble bath
- Small capacity compressor

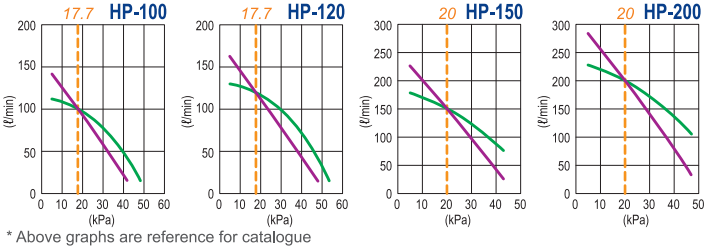
Specifications

		HP-100		HP-120		HP-150		HP-200	
Rated Voltage	V	AC220 - 240							
Power Supply Frequency	Hz	50	60	50	60	50	60	50	60
Rated Loading Pressure	kPa	17.7				20.0			
Airflow Volume	ℓ/min	100		120		150		200	
Power Consumption	W	95	100	115	125	125	155	210	250
Noise Level	dBA	38		40		45	47	46	48
Weight	kg	8.5				9.0			

* Above data is reference for catalogue

Performance Curves

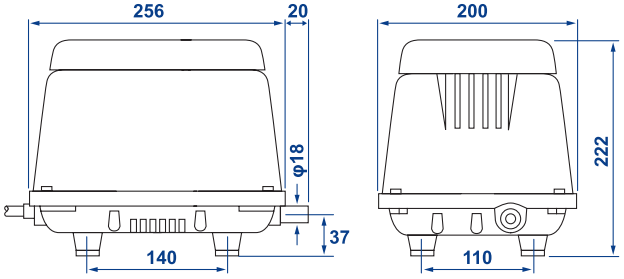
Rated Loading Pressure (kPa) — 50Hz — 60Hz



* Above graphs are reference for catalogue

Dimensions

(UNIT : mm)



* Materials may be modified without notice.
* "HIBLOW" is a registered mark of Techno Takatsuki co., ltd.

HP series

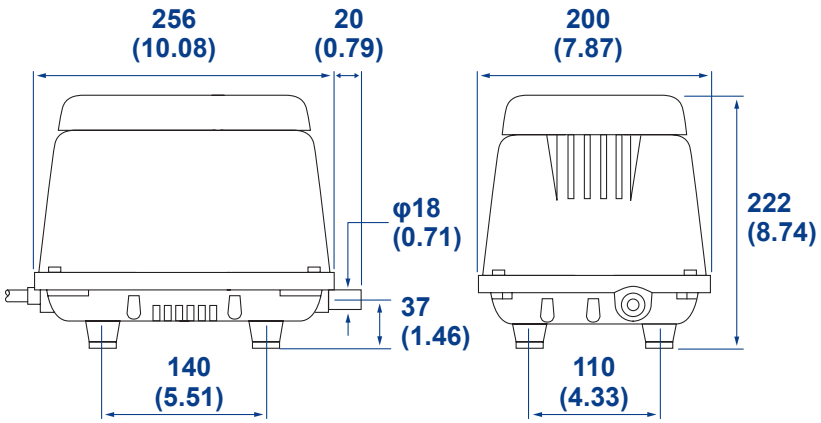
HIBLOW AIR PUMP

HP-150, 200

PRESSURE TYPE

Dimensions

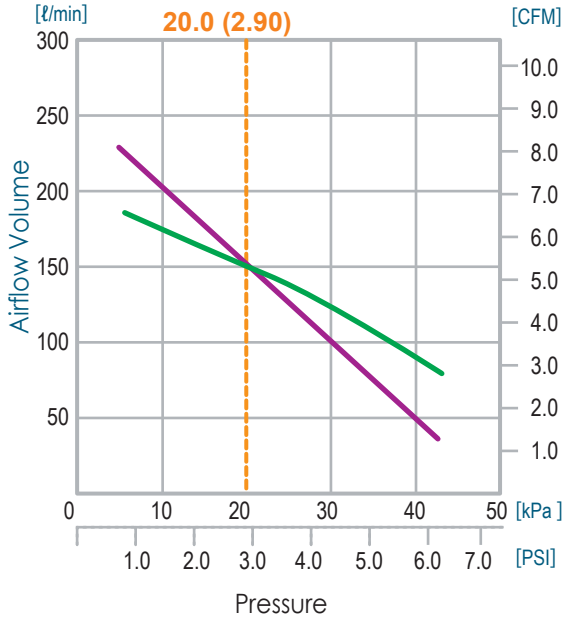
[Unit: mm(inch)]



Performance Curves

Rated Loading Pressure [kPa(PSI)]
50Hz 60Hz

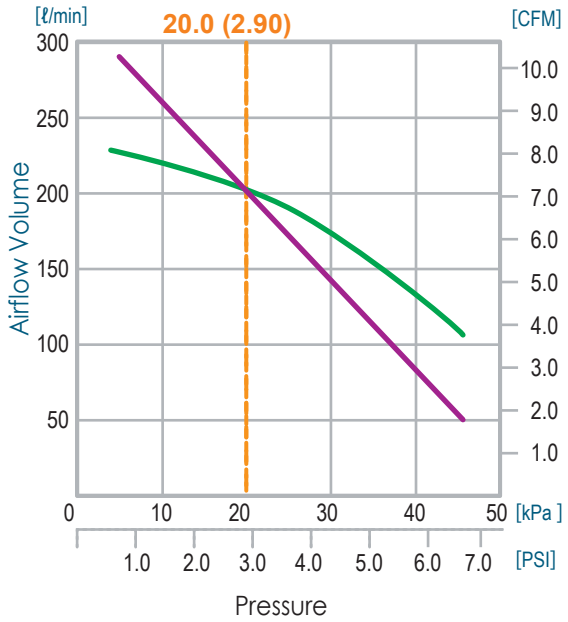
HP-150



Specifications

		HP-150		HP-200	
Rated Voltage	V	AC100 / 110-120 / 220-240			
Power Supply Frequency	Hz	50	60	50	60
Rated Loading Pressure	kPa	20.0			
Airflow Volume	ℓ/min	150		200	
Power Consumption	W	125	155	210	250
Noise Level	dBA	45	47	46	48
Weight	kg	9.0			

HP-200



HIBLOW USA
www.hiblow-usa.com
1300 Tefft Court, Suite 8 Saline, Michigan 48176
P: 734-429-5618 F: 734-944-5163

PL-525 Effluent Filter

Description

Polylok, Inc is pleased to add its new commercial filter to its existing line of quality effluent filters. The PL-525 is rated for over 10,000 GPD (Gallons Per Day) making it one of the largest commercial filters in its class. It has 525 linear feet of 1/16" filtration slots. Like the Polylok PL-122, the new Polylok PL-525 has an automatic shut off ball installed with every filter. When the filter is removed for cleaning, the ball will float up and temporarily shut off the system so the effluent won't leave the tank. No other filter on the market can make that claim!

Ordering Information Request a Quote Related Products

Features

- Rated for 10,000 GPD (Gallons Per Day)
- 525 linear feet of 1/16" filtration
- Accepts 4" and 6" SCHD. 40 pipe
- Built in Gas Deflector
- Automatic shut-off ball when filter is removed
- Alarm accessibility
- Accepts PVC extension handle

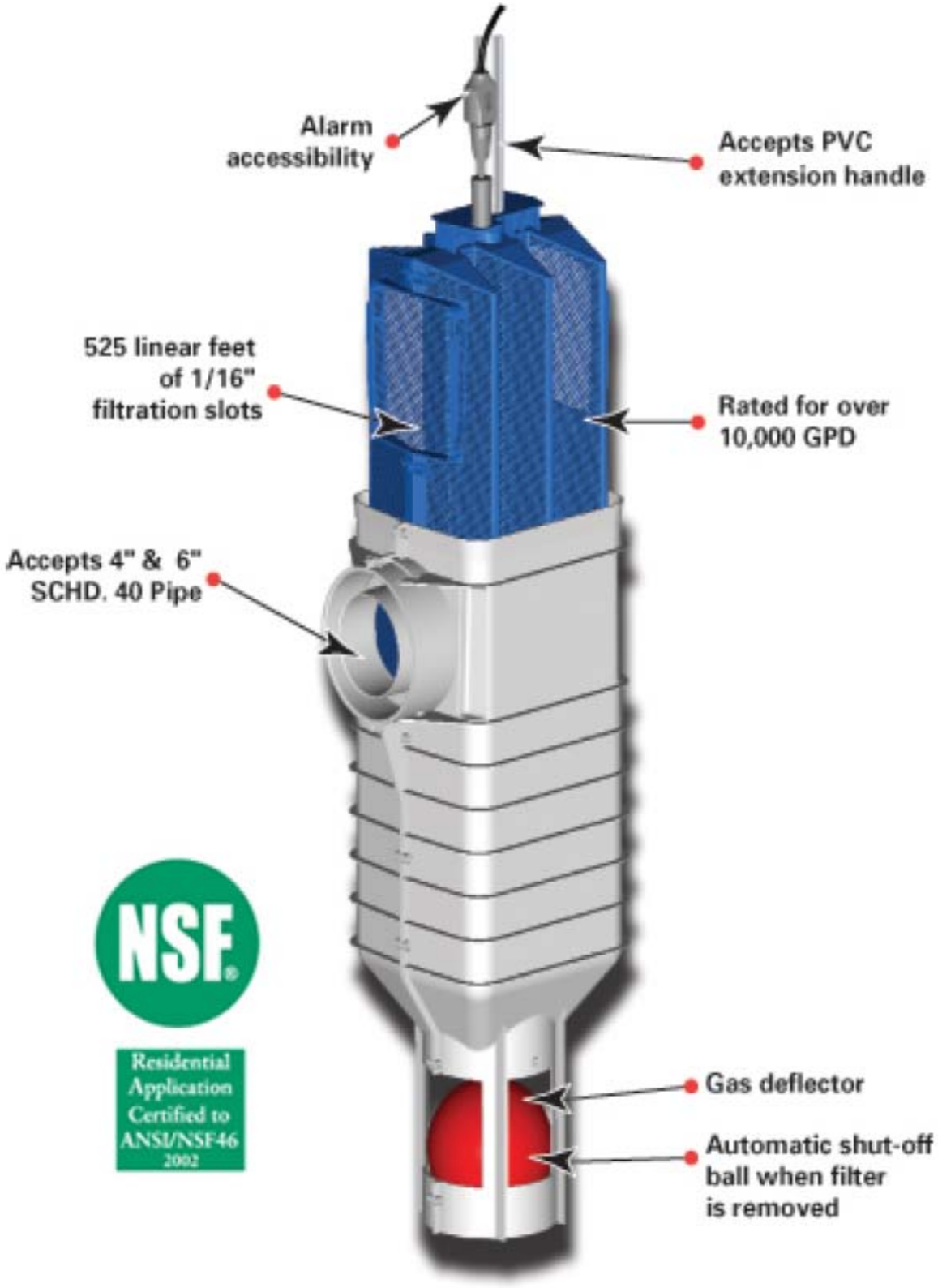
The PL-525 Effluent Filter should operate efficiently for several years under normal conditions before requiring cleaning. It is recommended that the filter be cleaned every time the tank is pumped or at least every three years. If the installed filter contains an optional alarm, the owner will be notified by an alarm when the filter needs servicing. Servicing should be done by a certified septic tank pumper or installer.

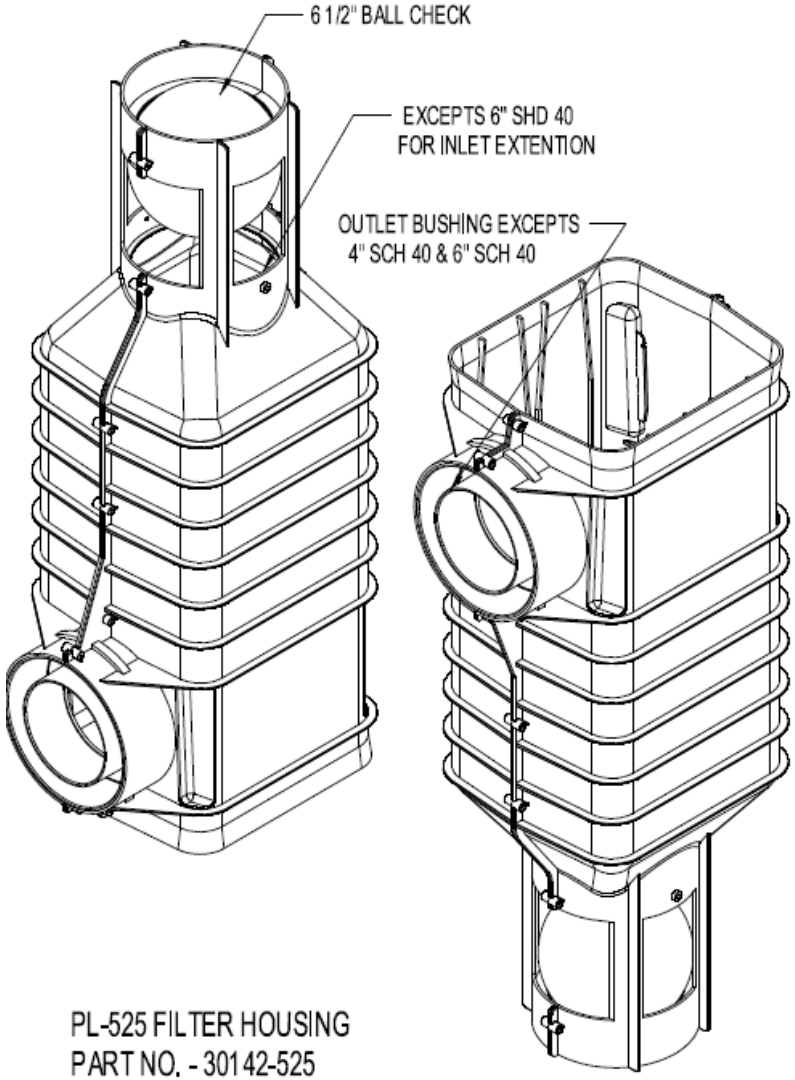
Maintenance Instructions:

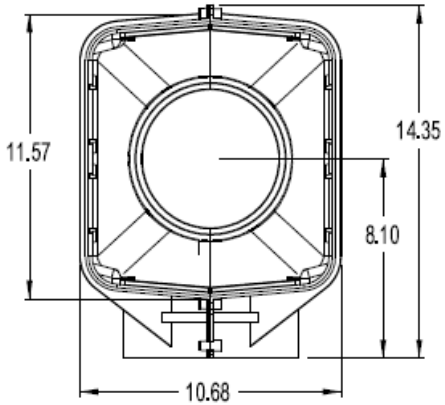
1. Locate the outlet of the septic tank.
2. Remove tank cover and pump tank if necessary.
3. Do not use plumbing when filter is removed.
4. Pull PL-525 out of the housing.
5. Hose off filter over the septic tank. Make sure all solids fall back into septic tank.
6. Insert the filter cartridge back into the housing making sure the filter is properly aligned and completely inserted.
7. Replace septic tank cover. PL-525 Installation: Ideal for residential and commercial waste flows up to 10,000 Gallons Per Day (GPD).

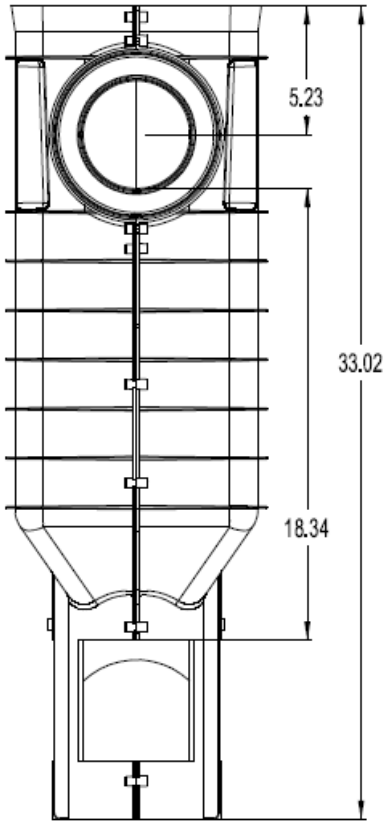
Installation Instructions:

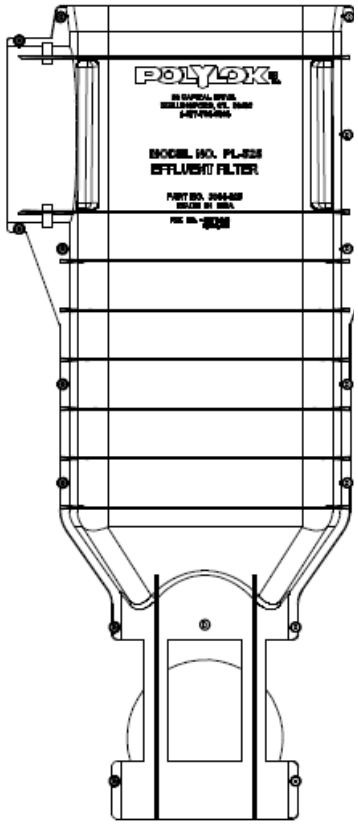
1. Locate the outlet of the septic tank.
2. Remove tank cover and pump tank if necessary.
3. Glue the filter housing to the 4" or 6" outlet pipe. If the filter is not centered under the access opening use a Polylok Extend & Lok™ or piece of pipe to center filter.
4. Insert the PL-525 filter into its housing.
5. Replace the septic tank cover.


Alarm accessibility
Accepts PVC extension handle
525 linear feet of 1/16" filtration slots
Rated for over 10,000 GPD
Accepts 4" & 6" SCHD. 40 Pipe
Gas deflector
Automatic shut-off ball when filter is removed
NSF
Residential Application Certified to ANSI/NSF46 2002









PL-525 FILTER HOUSING
PART NO. - 30142-525
MATERIAL:

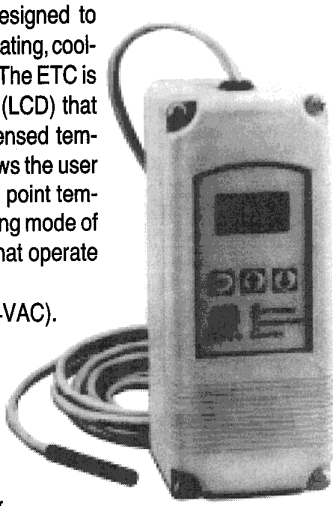
HOUSING - POLYPROPYLENE
OUTLET BUSHING - PVC
6.5 BALL - HDPE

Form No. 7515004-001 Rev. B

ETC TWO STAGE ELECTRONIC TEMPERATURE CONTROL

PRODUCT DESCRIPTION

The Ranco ETC is a microprocessor-based family of electronic temperature controls, designed to provide on/off control for commercial heating, cooling, air conditioning and refrigeration. The ETC is equipped with a liquid crystal display (LCD) that provides a constant readout of the sensed temperature, and a touch keypad that allows the user to easily and accurately select the set point temperature, differential and heating/cooling mode of the operation. Models are available that operate on either line voltage (120/208/240 VAC) or low voltage (24VAC).



APPLICATIONS

With its wide temperature setpoint range and selectable heating or cooling modes, the ETC can be used for a wide variety of applications including multiple compressor control, two stage heating, ventilation control, automatic changeover, condenser fan cycling, space and return air temperature control, water cooled condensers and control with alarm funtion.

FEATURES

- Wide setpoint temperature range (-30°F to 220°F) and differential adjustment (1°F to 30°F).
- Simple keypad programming of setpoint temperature, differential and cooling/heating modes.
- Two individually programmable stages for heating and/or cooling.
- LCD readout of sensor temperature, control settings, relay status and onboard diagnostics.
- Remote temperature sensing up to 400 feet.
- Two SPDT output relays.
- User-selectable Fahrenheit/Celsius scales.
- Lockout switch to prevent tampering by unauthorized personnel.
- Choice of line voltage and low voltage models available.
- Optional 0 to 10 volt analog output available for remote temperature indication.

SPECIFICATIONS

Input Voltage	120 or 208/240 VAC (24 VAC optional), 50/60 Hz
Temperature Range	-30°F to 220°F
Differential Range	1°F to 30°F
Switch Action	SPDT
Sensor	Thermistor, 1.94 in. long x 0.25 in. diameter with 8 ft. cable
Power Consumption	120/208/240 VAC : 100 milliamps 24 VAC : 2-6 VAC

Relay Electrical Ratings

	120V	208/240V
NO Contact		
Full-load amps	9.8 A	4.9 A
Locked rotor amps	58.8 A	29.4 A
Resistive amps	9.8 A	4.9 A
Horsepower	1/2 hp	1/2 hp
NC Contact		
Full-load amps	5.8 A	2.9 A
Locked rotor amps	34.8 A	17.4 A
Resistive amps	5.8 A	2.9 A
Horsepower	1/4 hp	1/4 hp

Pilot Duty: 125 VA at 120/208/240 VAC

Control Ambient Temperature	
Operating	-20°F to 140°F (-29°C to 60°C)
Storage	-40°F to 176°F (-40°C to 80°C)
Ambient Humidity	0 to 95%, RH, Non-condensing
0 to 10 V Output Impedance	1K
Enclosure	NEMA 1, Plastic
Agency Approvals	UL Listed, File E94419, Guide XAPX CSA Certified, File LR68340, Class 4813 02

ETC ORDERING INFORMATION

Code Number	Input Voltage	No. of Stages	0 - 10 V Output
ETC-211000-000	120/240	2	No
ETC-211100-000	120/240	2	Yes
ETC-212000-000	24	2	No
ETC-212100-000	24	2	Yes

OPERATION

Liquid Crystal Display (LCD)

The LCD display provides a constant readout of the sensor temperature and indicates if either of the two output relays is energized. When the **S1** annunciator is constantly illuminated during operation, the Stage 1 relay is energized. Likewise, when the **S2** annunciator is constantly illuminated during operation, the Stage 2 relay is energized. The display is also used in conjunction with the keypad to allow the user to adjust the setpoint temperatures, differentials and heating/cooling modes for each stage.

Control Setup

The temperature setpoint refers to the temperature at which the normally open (NO) contacts of the output relay will open. Determine the loads to be controlled and the operating modes required for each stage, cooling or heating.

- When the cooling mode is chosen, the differential is above the setpoint. The relay will de-energize as the temperature falls to the setpoint.
- When the heating mode is chosen, the differential is below the setpoint. The relay will de-energize as the temperature rises to the setpoint.

The ETC two stage control can be set up for two stages of heating, two stages of cooling or one stage cooling plus one stage heating. Refer to Figures 1, 2 and 3 for a visual representations of different control setups.

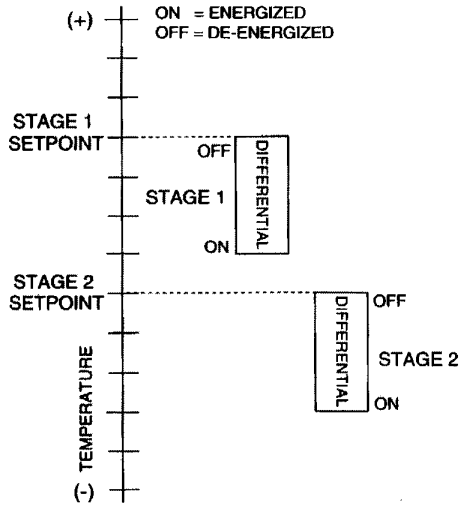


Figure 1: Two Stage Heating Example

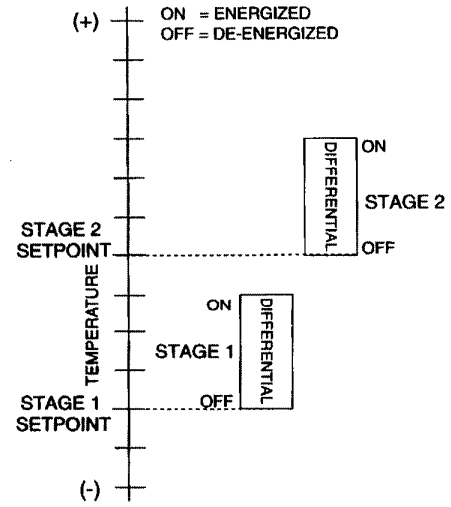


Figure 2: Two Stage Cooling Example

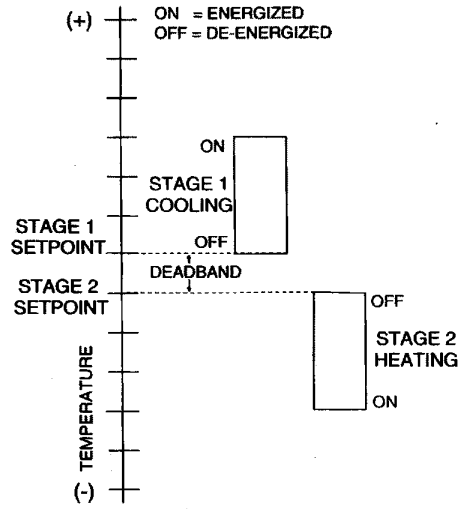


Figure 3: One Stage Cooling and One Stage Heating Example

Programming Steps and Display

The ETC two stage can be programmed in seven simple steps using the LCD display and the three keys on the face of the control.

Step 1- To start programming, press the **SET** key once to access the Fahrenheit/Celsius mode. The display will show the current status, either **F** for degrees Fahrenheit or **C** for degrees Celsius. Then press either the up ⬆ or down ⬇ arrow key to toggle between the **F** or **C** designation.

Stage 1

Step 2- Press the **SET** key again to access the stage 1 setpoint. The LCD will display the current setpoint and the **S1** annunciator will be blinking on and off to indicate that the control is in the setpoint mode. Then press either the up ⬆ key to increase or the down ⬇ key to decrease the setpoint to the desired temperature.

Step 3- Press the **SET** key again to access the stage 1 differential. The LCD will display the current differential and the **DIF 1** annunciator will be blinking on and off to indicate that the control is in the differential mode. Then press either the up ⬆ key to increase or the down ⬇ key to decrease the differential to the desired setting.

Step 4- Press the **SET** key again to access the stage 1 cooling or heating mode. The LCD will display the current mode, either **C1** for cooling or **H1** for heating. Then press either the up ⬆ or down ⬇ key to toggle between the **C1** or **H1** designation.

Stage 2

Step 5- Press the **SET** key again to access the stage 2 setpoint. The LCD will display the current setpoint and the **S2** annunciator will be blinking on and off to indicate that the control is in the setpoint mode. Then press either the up ⬆ key to increase or the down ⬇ key to decrease the setpoint to the desired temperature.

Step 6- Press the **SET** key again to access the stage 2 differential. The LCD will display the current differential and the **DIF 2** annunciator will be blinking on and off to indicate that the control is in the differential mode. Then press either the up ⬆ key to increase or the down ⬇ key to decrease the differential to the desired setting.

Step 7- Press the **SET** key again to access the stage 2 cooling or heating mode. The LCD will display the current mode, either **C2** for cooling or **H2** for heating. Then press either the up ⬆ or down ⬇ key to toggle between the **C2** or **H2** designation. Press the **SET** key once more and programming is complete.

Refer to Page 3 for an illustrated guide to programming the ETC.

NOTE: The ETC will automatically end programming if no keys are depressed for a period of thirty seconds. Any settings that have been input to the control will be accepted at that point.

All control settings are retained in non-volatile memory if power to ETC is interrupted for any reason. Re-programming is not necessary after power outages or disconnects unless different control settings are required.

Step	Annunciator	Description	Display
1	**F** or **C**	Fahrenheit or Celsius Scale	F
2	**S1** (blinking)	Stage 1 Setpoint Temperature	S1 70
3	**DIF 1** (blinking)	Stage 1 Differential Temperature	DIF 5
4	**C1/H1**	Stage 1 Cooling or Heating Mode	C1
5	**S2** (blinking)	Stage 2 Setpoint Temperature	S2 65
6	**DIF 2** (blinking)	Stage 2 Differential Temperature	DIF2 10
7	**C2/H2**	Stage 2 Cooling or Heating Mode	C2

TROUBLESHOOTING ERROR MESSAGES

Display Messages

E1- Appears when either the up ⬆ or down ⬇ key is pressed when not in the programming mode.
To correct: If the **E1** message appears even when no keys are being pressed, replace the control.

E2- Appears if the control settings are not properly stored in memory.
To correct: Check all settings and correct if necessary.

EP- Appears when the probe is open, shorted or sensing a temperature that is out of range.
To correct: Check to see if the sensed temperature is out of range. If not, check for probe damage by comparing it to a known ambient temperature between -30°F and 220°F. Replace the probe if necessary.

EE- Appears if the EEPROM data has been corrupted.
To correct: This condition cannot be field repaired. Replace the control.

CL- Appears if calibration mode has been entered.
To correct: Remove power to the control for at least five seconds. Reapply power. If the **CL** message still appears, replace the control.

Lockout Switch

The ETC is provided with a lockout switch to prevent tampering by unauthorized personnel. When placed in the **LOCK** position, the keypad is disabled and no changes to the settings can be made. When placed in the **UNLOCK** position, the keypad will function normally.

To access the lockout switch, disconnect the power supply and open the control. The switch is located on the inside cover about 2 inches above the bottom. (see Figure 4). To disable the keypad, slide the switch to the left **LOCK** position. To enable the keypad, slide the switch to the right **UNLOCK** position. All ETC controls are shipped with this switch in the **UNLOCK** position.

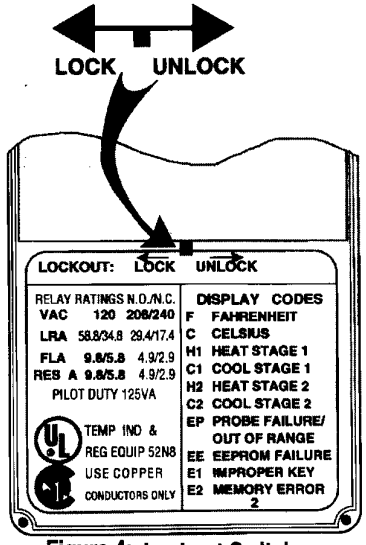


Figure 4: Lockout Switch

INSTALLATION INSTRUCTIONS

IMPORTANT

1. All ETC series controls are designed as operating controls only. If an operating control failure could result in personal injury or loss of property, a separate safety control and/or alarm should be installed.

2. The schematic drawings and other information included in these installation instructions are for the purpose of illustration and general reference only.

3. These instructions do not expand, reduce, modify or alter the Ranco Terms in any way; and no warranty or remedy in favor of the customer or any other person arises out of these instructions.

4. Ranco ETC controls have been approved by Underwriters' Laboratories as UL Listed; however, approval does not extend to their use for any other purpose. Ranco assumes no responsibility for any unconventional application of its control unless such application has been approved in writing by Ranco.

5. It is the responsibility of the installer and the user to assure that his or its application and use of all Ranco products are in compliance with all federal, state and local requirements, including, without any limitation, all requirements imposed under the National Electric Code and any applicable building codes.

CAUTION

To prevent possible electrical shock or equipment damage, disconnect electrical power to the unit before and during installation. **DO NOT** restore electrical power to unit until the control is properly installed and the cover is assembled. **DO NOT** locate the control in an explosive atmosphere as a safety hazard can result due to possible spark generation in the control. Controls are not to be located in areas of significant moisture, dirt or dust, or in a corrosive explosive atmosphere. Use of control in such environments may result in injury or damage to the persons or property (or both) and are likely to shorten the control life;
Ranco assumes no responsibility for any such use.

CONTROL MOUNTING

Mount the ETC to a wall or any flat surface using a combination of any two or more of the slotted holes located on the back of the control case. The control's components are not position sensitive, but should be mounted so that they can be easily wired and adjusted. Avoid excessive conditions of moisture, dirt, dust and corrosive atmosphere.

The ETC has provisions for 1/2 inch conduit connections. The conduit hub should be secured to the conduit before securing the hub to the plastic housing of the control. When using the conduit entry in the rear of the case, a standard plug should be inserted into the conduit hole in the bottom. Caution should be exercised not to damage the control circuit board or wiring when installing a conduit connector.

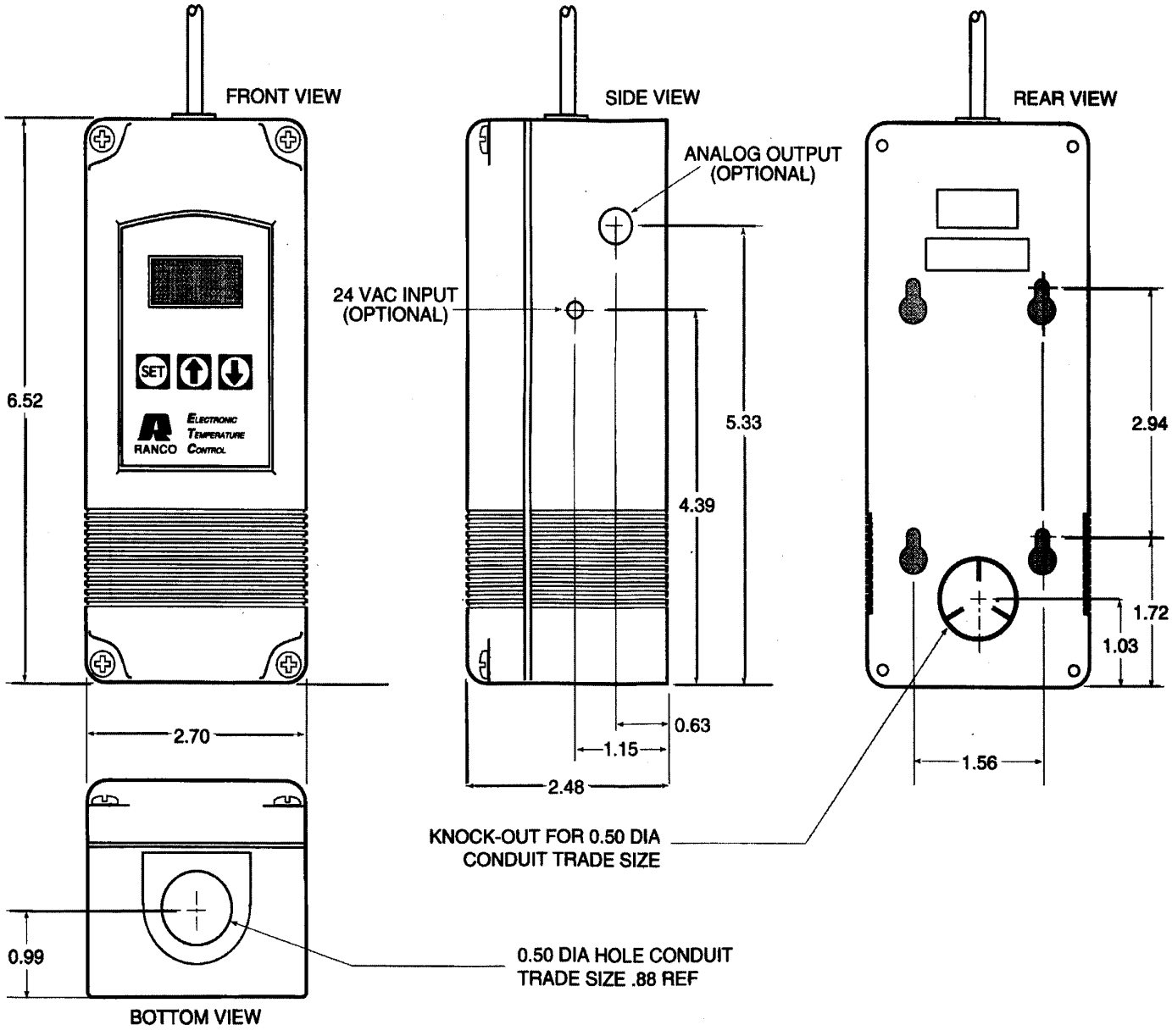


Figure 5: Dimensions (Inches)

CONTROL WIRING

General

- All wiring should conform to the National Electric Code and local regulations.
- The total electrical load must not exceed the maximum rating of the control (see Specifications).
- Use copper conductors only.
- Electrical leads should not be taut; allow slack for temperature change and vibration.

Input and Output Wiring

For typical wiring diagrams, refer to Figures 6 and 7.
All connections are made to the power (lower) circuit board. When using the 24 VAC powered models, the 24 VAC input lines must enter through the sidewall of the case. Refer to Figure 5 for location of the entry hole.

Analog Output

ETC models are available with an optional 0 to 10 volt analog output. This signal is a linear representation of the sensor temperature with 0 volts = -30°F and 10 volts = 220°F. See figure 8 for wiring information and Figure 5 for location of the entry hole. The reference for this output is designated by the "-" symbol on the wiring diagram. The output signal is designated by the "+" symbol.

Sensor Wiring

The temperature sensor leads are soldered to the circuit board so no additional connections are necessary. However, splicing is required when extending the sensor cable length beyond the standard 8 foot length supplied with the ETC. The sensor cable can be extended up to 400 feet.

A damaged sensor can be replaced by splicing a new Ranco sensor onto the sensor leads from the circuit board. The sensor is not polarity sensitive.

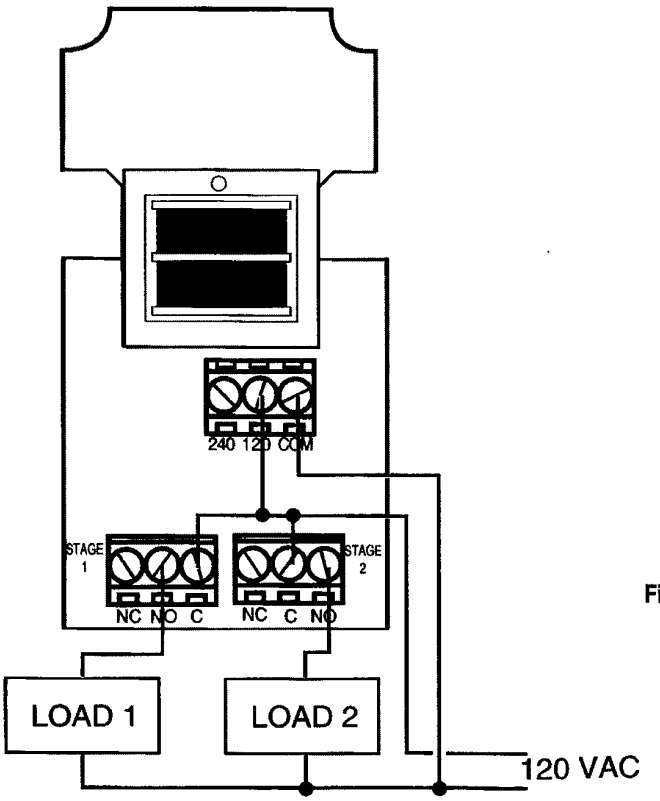


Figure 6: Typical Line Voltage Wiring Diagram.

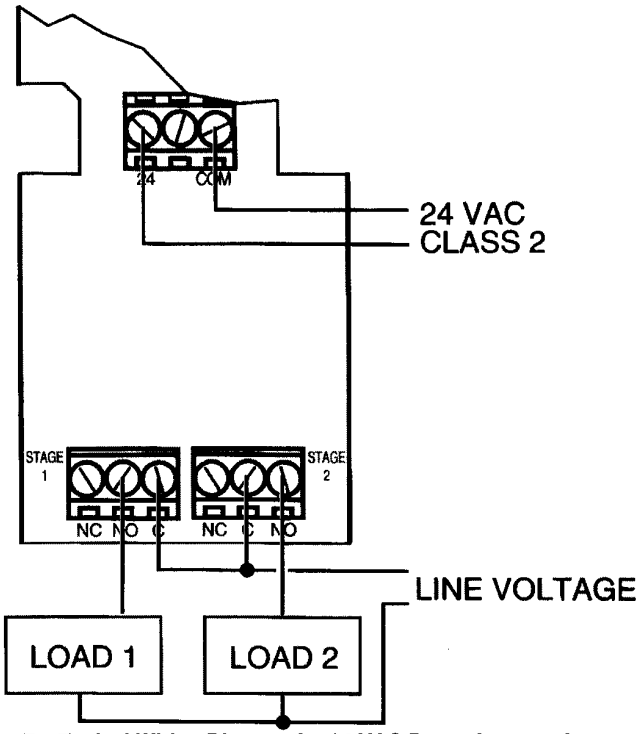


Figure 7: Typical Wiring Diagram for 24 VAC Power Input and Line Voltage Switching.

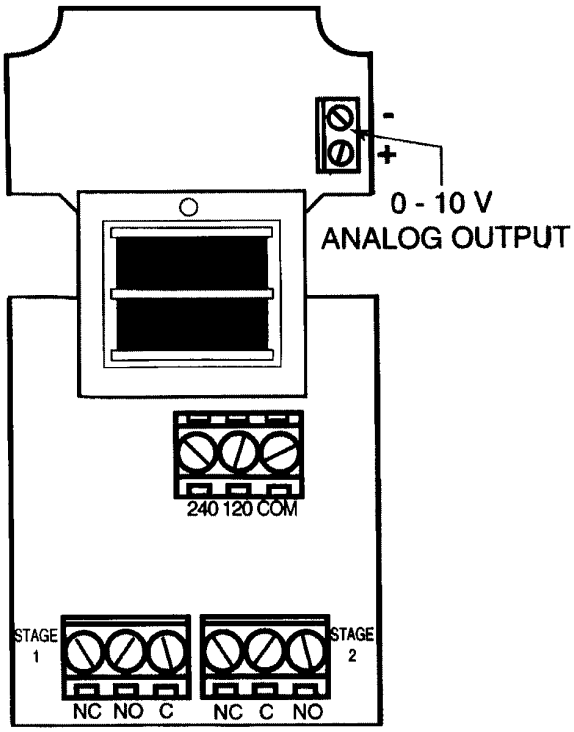


Figure 8: 0-10 V Analog Output Located on Power (Lower) Circuit Board.

FIELD REPAIRS

Field calibrating or repairs to the ETC control must not be attempted. Sensors and replacement controls are available through Ranco wholesalers

SENSOR MOUNTING

For space sensing, mount the sensor where it will be unaffected by heat/cool discharge or radiated heat sources. Spot sensing requires the sensor to be in good contact with the surface being sensed. The sensor can be inserted in a bulb well for immersion sensing.

EXTENDING SENSOR

CAUTION: Sensor wiring splices may be made external from the control. **DO NOT** attempt tyo unsolder the sensor at the control circuit board!

CAUTION: Disconnect power to control before wiring to avoid possible electrical shock or damage to the controller.

Additional cable can be spliced to the sensor cable to increase the length beyond the standard 8 feet. It can be extended up to 400 feet. The cable should be at least 22 AWG or larger to keep additional resistance to a minimum.

All splices and wire lengths added to the sensor cable should be made according to acceptable wiring practices and should conform to the National Electrical Code and local regulations. Use copper conductors only. Shielded cable is not required.

Checkout Procedure

1. Before applying power, make sure installation and wiring connections are correct.
2. Apply power to the control and observe one or more cycles of operation.
3. If performance indicates a problem, check sensor resistance to determine if sensor or control is at fault.
4. To check sensor resistance, disconnect sensor and measure the resistance across the leads while measuring temperature at the sensor.

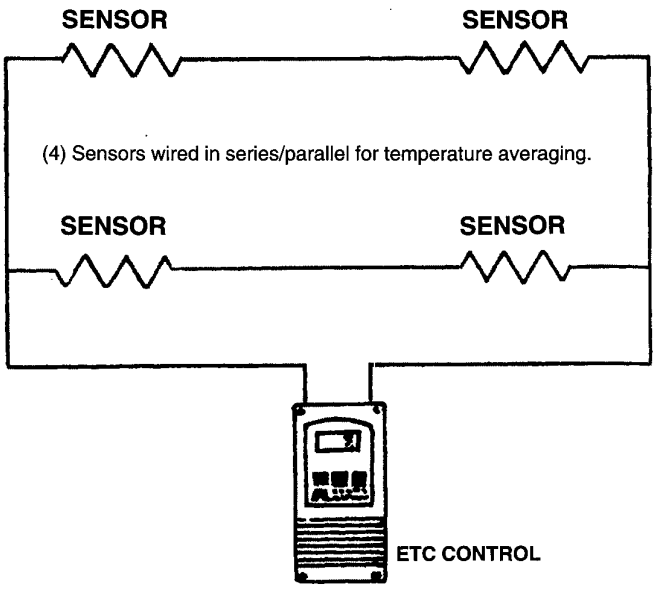


Figure 9

Replacement Sensor - Order Part No. 1309007-044

SPECIFICATIONS

The 1309007-044 sensor is a negative temperature coefficient (NTC) thermistor sensor. The sensor resistance decreases with temperature increase. It is .25 x 1.94 long with 8 feet #22 AWG cable. The termistor has a reference resistance of 30,000 ohms at 77°F (25°C).

IMPORTANT

The schematic drawings and other information included in these instructions are for the purpose of illustration and general reference only. Ranco assumes no responsiblity for any unconventional application of this control, unless such application has been approved in writing by Ranco.

Deg. C.	Deg. F.	RES. Nom.
-40	-40	1,010,000
-30	-22	531,000
-20	-4	291,200
-10	14	166,000
0	32	97,960
10	50	59,700
20	68	37,470
25	77	30,000
30	86	24,170
40	104	15,980
50	122	10,810
60	140	7,464
70	158	5,200
80	176	3,774
90	194	2,753
100	212	2,036
110	230	1,531

Figure 10:
Resistance vs Temperature of 1309007-044. Sensor including 8 foot cable.

RANCO
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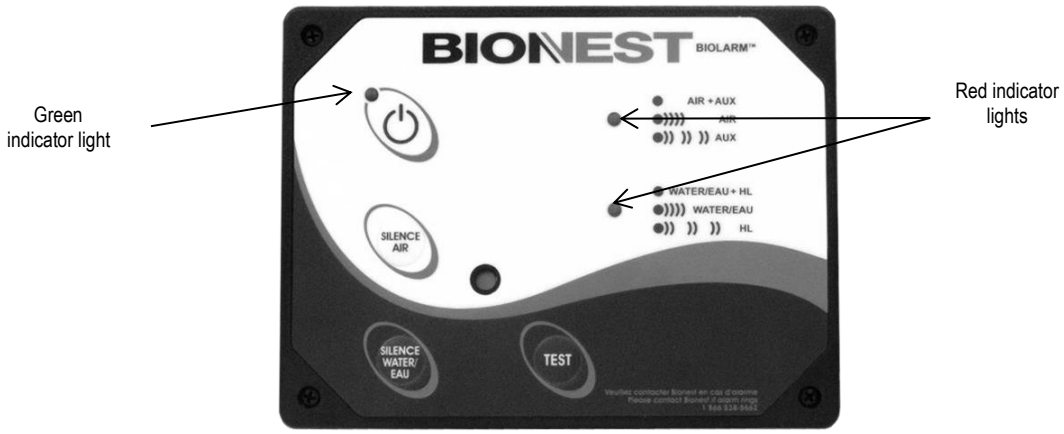
Invensys
An Invensys Company

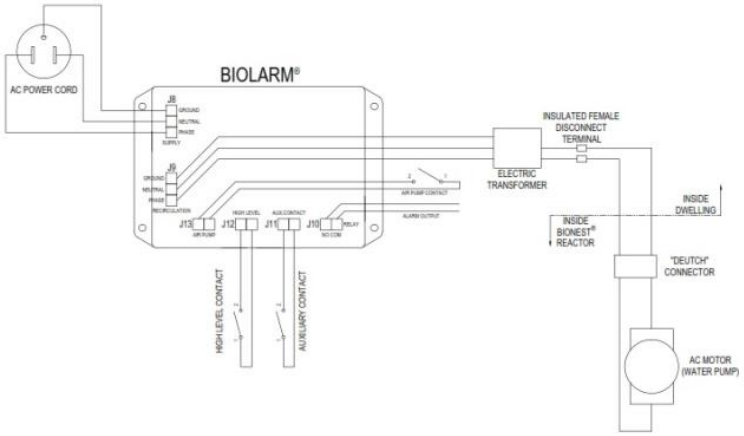
Biolarm®

The BIOLARM® control system detects any malfunction of the BIONEST® system's electrical components, such as the recirculation or air pump. It also signals any abnormality related to a high water level detected by the BIO-UV™, the BIO-PUMP™ or by an effluent filter high level float, where applicable.

This system connects into a 120 V outlet and beeps in case of a malfunction. A green indicator light signals the BIOLARM® is functioning while two (2) red lights indicate the reason for the alarm.

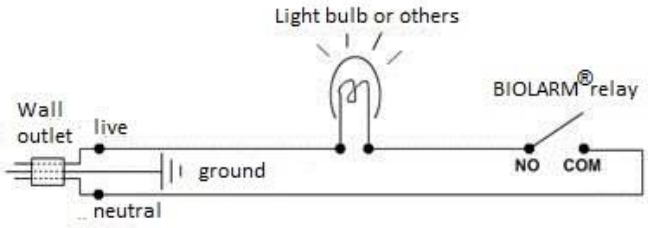


BIOLARM® electrical diagram



The BIOLARM® is equipped with a "relay" type terminal for connecting another alarm unit such as a residential alarm system, a light bulb, an emergency light, etc.

BIOLARM® relay terminal diagram



SK CEILING FAN HEATER

AIR CURTAIN

The SK ceiling fan heater is perfect for both residential and commercial buildings. Ideal for bathrooms, the SK not only efficiently heats the room but controls moisture build-up at the same time. Say goodbye to fogged up windows and mirrors! This heater's grill has rounded corners and no screws. It blends in harmoniously with the ceiling, freeing up wall space. Whether it is installed near your home's entrance, shower or bay window, it is a sensational backup heating unit when combined to a central system. By adding a wall timer, you can use it on demand. The SK is also a unit of choice in commercial spaces; it remains aesthetic as it is not exposed to vandalism. In addition, it cannot be damaged by wet mops or water splashes since it is out of reach.

- **ELIMINATES MOISTURE EFFICIENTLY WHILE HEATING THE ROOM**
  perfect for bathrooms and rooms without a lot of wall space
- **HEATING FROM THE CEILING**
  increases safety and security
- **WALL TIMER**
  heating on demand (optional)
- **AN EXCELLENT CHOICE FOR DAYCARES**
  not accessible to children

A heat wave *on demand*

Features

COLORS:
- standard: white, almond
- optional: black, light charcoal, silver, clear anodized, nickel, champagne, light bronze, dark brown (10% surcharge)

FINISH:
epoxy-polyester powdercoat

MANUFACTURING:
- 1/4 in. deep front grill
- easy access for maintenance purposes (no screws)

THERMAL PROTECTION:
thermal protection with automatic reset

WATTAGE & VOLTAGE:
see the selection table

ELEMENT:
nichrome element producing instant heat

CONTROL:
- built-in thermostat (optional)
- wall thermostat (not included)
- 60-minute timer (optional)

INSTALLATION:
- ceiling mounting (recommanded height of 8 ft, maximum of 9 ft)
- surface-mounted with surface adapter (optional)
- recessed or surface-mounted with adapter for suspended ceiling (optional)
- unit can be mounted parallel or perpendicular to ceiling beams
- approved to be recessed in mineral wool. Any other material that comes in contact with the unit can withstand heat

WARRANTY:
10 years for the element and 1 year for other components

Accessories

CODE	DESCRIPTION	PRICE
SKT1*	tamper-proof built-in thermostat (grill must be removed to access this type of thermostat)	50.25
SKTBA*	adapter for suspended ceiling (2 x 2 feet) (recessed or surface-mounted)	70.00
SKSA*	surface adapter (SK model)	58.00
SKSAII*	surface adapter (SKII model)	69.00
FD60MCW70	60-minute wall timer	44.00

Prices indicated in this catalogue are valid 90 days starting from July 1st, 2013. For all the updated prices, please refer to the Web site.
* add **W** for white or **A** for almond
* factory installed

TECHNICAL DRAWINGS: PAGE 126

Selection table

WITHOUT CONTROL	24 V CONTROL	POWER	VOLTAGE	PHASE	FLOW	WEIGHT		PRICE
code	code	watts	volts	nb.	cfm	kg	lb	
SK0501	---	500	120	1	60	5	11	198.00
SK0508	---	500	208	1	60	5	11	198.00
SK0502	---	500/375	240/208	1	60	5	11	198.00
SKII0507	---	500	277	1	60	5	11	323.00
SK0751	---	750	120	1	60	5	11	198.00
SK0758	---	750	208	1	60	5	11	198.00
SK0752	---	750/560	240/208	1	60	5	11	198.00
SKII0757	---	750	277	1	60	5	11	323.00
SK1001	---	1000	120	1	60	5	11	210.00
SK1008	---	1000	208	1	60	5	11	210.00
SK1002	---	1000/750	240/208	1	60	5	11	210.00
SKII1007	---	1000	277	1	60	5	11	335.00
---	**SKII1003C24**	1000	347	1	60	5	11	335.00
SK1251	---	1250	120	1	60	5	11	210.00
SK1258	---	1250	208	1	60	5	11	210.00
SK1252	---	1250/940	240/208	1	60	5	11	210.00
SKII1257	---	1250	277	1	60	5	11	335.00
---	**SKII1253C24**	1250	347	1	60	5	11	335.00
SK1501	---	1500	120	1	60	5	11	231.00
SK1508	---	1500	208	1	60	5	11	231.00
SK1502	---	1500/1125	240/208	1	60	5	11	231.00
SKII1507	---	1500	277	1	60	5	11	356.00
---	**SKII1503C24**	1500	347	1	60	5	11	356.00
---	---	2000	120	1	90	5	11	---
---	---	2000	208	1	90	5	11	---
SK2002	---	2000/1500	240/208	1	90	5	11	263.00
SKII2007	---	2000	277	1	90	5	11	388.00
---	**SKII2003C24**	2000	347	1	90	5	11	388.00

Prices indicated in this catalogue are valid 90 days starting from July 1st, 2013. For all the updated prices, please refer to the Web site.
add **W** for white or **A** for almond
--- not available

TROJANUVMAX™ Specification Sheet

TROJANUVMAX™ MODEL:	A	B	C	D	E	F
FLOW RATES*	<1-3 GPM	2-5 GPM	5-14 GPM	5-14 GPM	8-28 GPM	13-47 GPM
	<4-11 LPM	7-19 LPM	19-53 LPM	19-53 LPM	30-106 LPM	49-178 LPM
ELECTRICAL						
	120V/60Hz	90-140V	90-140V	90-265V	90-265V	90-265V
	230V/50Hz	190-265V	190-265V			
		50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
	25 W	27 W	43 W	43 W	67 W	102 W
DIMENSIONS						
Chamber Assembly	15.5" x 2.5"	13.5" x 3.5"	19.5" x 3.5"	19.5" x 3.5"	29" x 3.5"	43.5" x 3.5"
	39 x 6.5cm	34 x 9cm	49.5 x 9cm	49.5 x 9cm	73.5 x 9cm	110 x 9cm
Lamp/Sleeve Length	12"	9.75"	16"	16"	25.5"	39.75"
	30cm	25cm	40.5cm	40.5cm	65cm	100.5cm
Control Module	2.8" x 3.3" x 2.3"	6" x 4" x 2.5"	6" x 4" x 2.5"	9.75" x 6" x 2.5"	9.75" x 6" x 2.5"	9.75" x 6" x 2.5"
	7 x 8 x 6cm	15 x 10 x 6cm	15 x 10 x 6cm	25 x 15 x 6cm	25 x 15 x 6cm	25 x 15 x 6cm
Max. Operating Pressure	125psi	125psi	125psi	125psi	125psi	125psi
Audible/Visual Lamp Failure Alarm	✓	✓	✓	✓	✓	✓
Alarm Reset	-	-	-	✓	✓	✓
Elapsed Time Meter	-	-	-	✓	✓	✓
Dry Contact**	-	-	-	✓	✓	✓
Lamp Replacement Reminder	-	-	-	✓	✓	✓
UV Intensity Monitor	-	-	-	D Plus	E Plus	F Plus
Water Chamber Material	304 SS	304 SS	304 SS	304 SS	316 SS	316 SS
Electropolished Exterior	-	-	-	✓	✓	✓
Inlet/Outlet	3/8" FNPT	3/4" NPT	3/4" NPT	3/4" NPT	1" NPT	1" NPT

**** See sizing charts for details. Flow rates shown are at 85% UVT.***

***** Remote options cord needed for solenoid valve or remote alarm connection***

Trojan Technologies Inc.

juin 8, 2001

TROJANUVMAX™

Owner's Manual

DO NOT REMOVE FROM UNIT
See back cover for vital records

ELECTRICAL SAFETY

GROUNDING

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electrical shock. This system is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with this system – if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use any type of adapter with this system.

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, this system should only be connected to a properly grounded, grounding-type power supply receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI). Inspect operation of GFCI as per manufacturers suggested maintenance schedule.

EXTENSION CORDS

If an extension cord is necessary, use only 3-wire extension cords that have 3-prong grounding-type plugs and 3-pole cord connectors that accept the plug from this system. Use only extension cords that are intended for outdoor use. Use only extension cords having an electrical rating not less than the rating of the system. A cord rated for less amperes or watts than this system rating may overheat. Exercise caution when arranging the cord so that it will not be tripped over or pulled. Do not use damaged extension cords. Examine extension cord before using and replace if damaged. Do not abuse extension cord. Keep extension cord away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting this system from the extension cord. Never yank cord to pull plug from outlet. Always grasp the plug and pull to disconnect.

WARNING – To prevent risk of electrical shock, connect this system only to a properly grounded, grounding-type power supply receptacle that is protected by a Ground Fault Circuit Interrupter. Pull plug before servicing or replacing lamp. Keep all connections dry and off the ground. Do not touch plug with wet hands.

WARNING – Do not look directly at UV lamp when it is operating. The light emitted by the lamp will cause serious eye damage and burn unprotected skin.

WARNING – Read manual before installing or servicing this system. Only authorized personnel possessing a strong understanding of this system should attempt to replace lamp or service this system.

NOTE – Maximum pressure rating is 125 PSI (861.8 kPa)

WARNING –
To guard against injury, basic safety precautions should be observed, including the following:

1. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2. DANGER – To avoid possible electric shock, special care should be taken since water is employed in the use of this system. Do not attempt repairs yourself. No user serviceable parts. Return the system to an authorized service facility for service or discard the system.
3. Do not operate the system if it has a damaged cord or plug, or if it is malfunctioning or if it has been dropped or damaged in any manner.
4. Always unplug the system from an outlet before servicing or cleaning. Never yank cord to pull plug from outlet. Always grasp the plug and pull to disconnect.
5. Do not use the system for other than intended use. The use of attachments or accessories not recommended or sold by Trojan Technologies may cause an unsafe condition and/or reduce disinfection performance.
6. CAUTION – To prevent risk of electrical shock, connect this system only to a properly grounded, grounding-type power supply receptacle that is protected by a Ground Fault Circuit Interrupter (GFCI). Inspect performance of GFCI as per manufacturer's suggested maintenance schedule.
7. Visually inspect this system prior to installation. If the quartz sleeve or lamp is broken, cracked or damaged in any way, do not use. Contact Trojan Technologies Client Services for replacement parts.
8. WARNING – To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch plug with wet hands.
9. The light emitted by the lamp will cause serious eye damage and burn unprotected skin. Never look directly at the lamp when it is operating. Do not plug unit into an electrical outlet without properly securing the lamp/sleeve into the reaction chamber. Disconnect lamp harness before removing lamp from reactor.
10. If the UV system malfunctions or fails, water must be boiled prior to consumption until the UV system is operational and the water lines have been shocked. System failure is indicated by the system's audible alarm and absent (Models B & C) or red (all other models) indicator light.
11. Always shut off water flow and release water pressure before cleaning or maintaining unit.
12. Intended for indoor use only. Power supply must not be exposed to weather elements. In seasonal applications, reactor must be drained to prevent freezing.
13. Installation of this system must be in accordance with local plumbing and electrical codes as well as any and all applicable regulations and laws.
14. SAVE THESE INSTRUCTIONS.

Thank you.

By purchasing this system, you have taken the first step to providing safe drinking water for you and your family.

Designed using the most advanced UV technology available today, your UV system will operate with minimal maintenance and provide you with years of worry-free water disinfection. All you have to do is follow the information in this manual, conduct the recommended maintenance, and replace the lamp once a year.

Contents

COMPONENTS

Each TrojanUVMax system comes with the following components.

One owner's manual

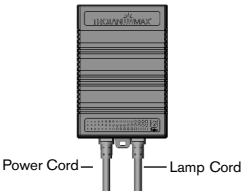
One warranty card

Reactor clamp(s)
One on Models A, B, C, D, two on larger models

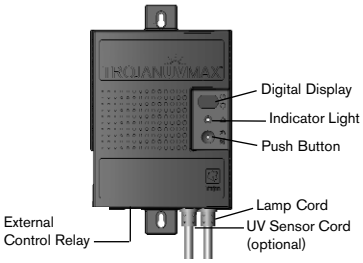
One power cord
Models D, E, F, Pro7 and Pro15 only

One power supply

Model A

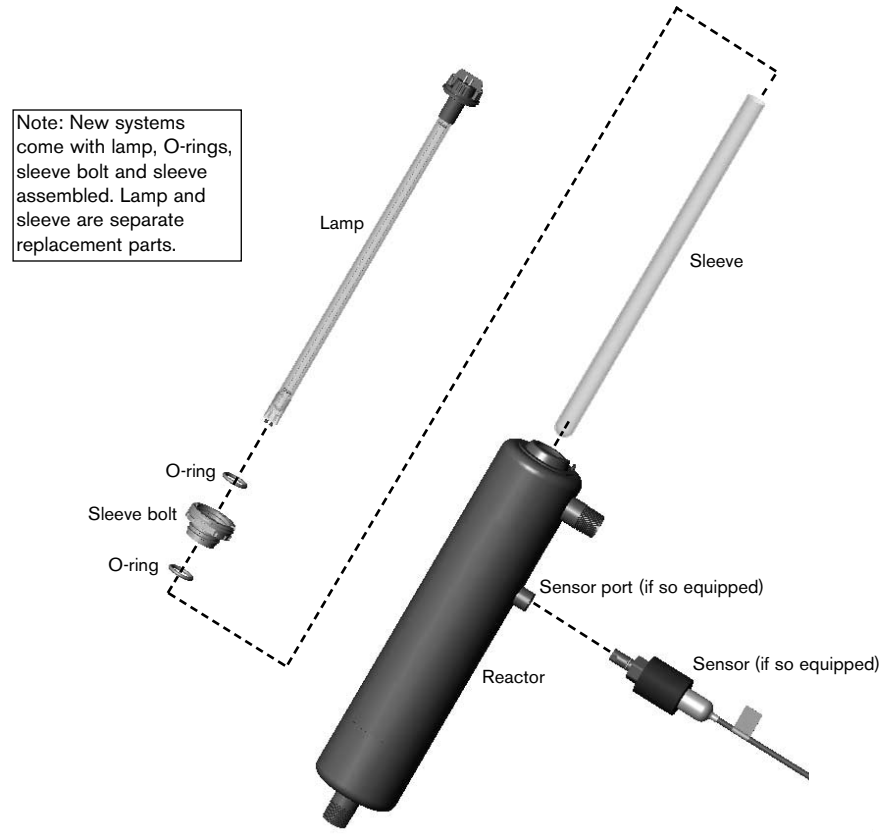


Models B and C



Models D, E, F, Pro7 & Pro15

One reactor; one lamp; one sleeve; one sleeve bolt; two O-rings; optional sensor.



PRODUCT SPECIFICATIONS

MODEL		A	B	C	D	E	F	Pro7	Pro15
Flow Rate GPM (LPM)	**16 dose***	**3 (11)**	**5 (19)**	**14 (53)**	**14 (53)**	**28 (106)**	**47 (178)**		
	30 dose*	**1 (3.8)**	**4 (15)**	**7 (26)**	**7 (26)**	**15 (56)**	**25 (94)**		
	40 dose**							**8.2 (31)**	**17.8 (67.4)**
Audible/Visual Lamp Failure Alarm		✓	✓	✓	✓	✓	✓	✓	✓
No-tools Maintenance		✓	✓	✓	✓	✓	✓	✓	✓
Safety Cap		✓	✓	✓	✓	✓	✓	✓	✓
Electronic Power Supply		✓	✓	✓	✓	✓	✓	✓	✓
Alarm Postpone		–	–	–	✓	✓	✓	✓	✓
Elapsed Time Meter		–	–	–	✓	✓	✓	✓	✓
Lamp-age Display & Alert		–	–	–	✓	✓	✓	✓	✓
Digital Diagnostic Display		–	–	–	✓	✓	✓	✓	✓
Electropolished Exterior		–	–	–	✓	✓	✓	✓	✓
External Control Relay		–	–	–	✓	✓	✓	✓	✓
UV Intensity Sensor		–	–	–	Optional	Optional	Optional	✓	✓
Solenoid (shut-off valve)***		–	–	–	Optional	Optional	Optional	Optional	Optional
Dynamic Flow Restrictor		–	–	–	Optional	Optional	Optional	✓	✓
Water Chamber Material		304 SST	304 SST	304 SST	304 SST	316 SST	316 SST	316 SST	316 SST
Inlet/Outlet		3/8" FNPT	3/4" NPT or BSP	3/4" NPT or BSP	3/4" NPT or BSP	1" NPT or BSP	1" NPT or BSP	1" NPT	1" NPT

* See sizing charts for details. Flow rates shown are at 85% UVT.
** NSF Standard 55 Class A certifies flow rates shown. The temperature of the flowing water being treated must be between 1°C and 35°C (33.8°F to 95°F).
*** Requires solenoid junction box.

PART NUMBERS

Model	Power Supply* 120V	230V	Lamp 254nm	185nm	O-Ring	Quartz Sleeve	Sleeve Bolt
A	650414	650415	602803	602826	002045	602730	602665
B	650411	650412	602804	602827	002045	602731	602665
C	650408	650409	602805	602828	002045	602732	602665

Model	Power Supply* 120V no sensor	120V w sensor	230V no sensor	230V w sensor	Lamp Cord**	Power Cord 120V	Power Cord 230V	Lamp 254nm	Lamp 185nm	O-Ring	Quartz Sleeve	Sleeve Bolt	UV Sensor
D	650405	650421	650406	650422	602799	602636	602637	602805	602828	002045	602732	602665	650505
E	650402	650418	650403	650419	602799	602636	602637	602806	602829	002045	602733	602665	650505
F	650398	650401	650399	650416	602799	602636	602637	602807	602830	002045	602734	602665	650505
Pro7	650510	N/A	650511	N/A	602799	602636	602637	602806	N/A	002045	602733	602665	650505
Pro15	650512	N/A	650513	N/A	602799	602636	602637	602807	N/A	002045	602734	602665	650505

* Includes power and lamp cords
** Without sensor: 602799-120; with sensor: 602799-120S

WATER QUALITY PARAMETERS

These are recommended levels, for use as a guideline for pre-treatment requirements.

Iron: < .3 PPM (.3 mg/L)
Hardness: < 120 PPM (7 Grains Per Gallon)
% UVT: > 75%

ADDITIONAL WATER TREATMENT EQUIPMENT

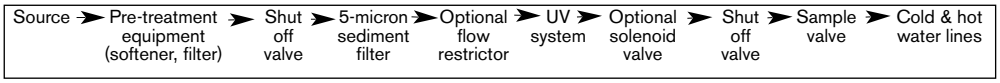
To meet the water quality parameters described above, you may need to pre-treat your water to ensure appropriate disinfection. Pre-treatment equipment must be installed BEFORE the UV reactor. Ask your water treatment dealer for further information about water quality and testing.

Pre-treatment systems can be comprised of one or more of the following elements:

- Carbon Filter
- Iron Removal System
- Water Softener
- Cyst reduction filter (ANSI/NSF Standard 53 listed)

Required: Pre-treatment MUST INCLUDE a sediment filter (5 micron nominal) installed upstream of (before) the UV system in order to ensure that particles capable of shielding pathogens are removed from the water prior to entering the UV system.

Recommended: Shut off valves should be installed before and after the UV unit, and a sample valve (outlet) should be installed after the unit to allow for pressure-release and water sampling.

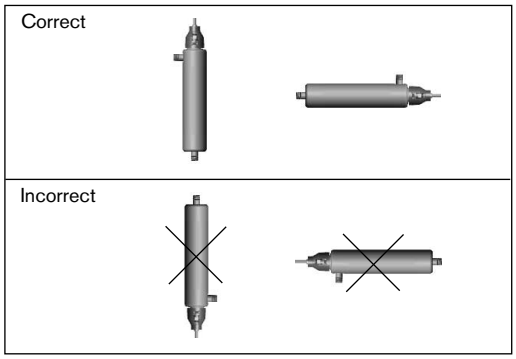


INSTALLATION

Follow the instructions below in order to avoid the risk of voiding your warranty.

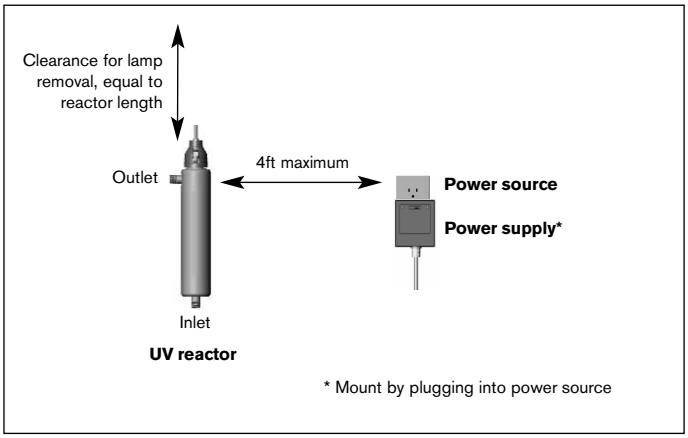
1. To protect your power supply, you must use a UL1449 certified transient voltage surge suppressor and a Ground Fault Circuit Interrupter (GFCI).
2. Determine location and orientation of reactor referring to diagrams on pages 10 and 11.
3. Attach reactor clamp(s) to the wall.
4. Insert reactor and tighten clamp(s).
5. Connect to plumbing.
6. Mount power supply to wall, referring to diagrams on pages 10 and 11. Power supply should be installed above all plumbing if possible
7. Insert power cord into male receptacle on left side of power supply (only on models D, E, F, Pro7 and Pro15).
8. Insert lamp/sleeve assembly (see Figure 9, page 16).
9. Attach the ground (green/yellow) and strain relief (red) wires from the lamp cord to the peg located on the reaction chamber, next to the lamp port (outlet end). Secure both wires with locknut provided.

REACTOR CHAMBER ORIENTATION

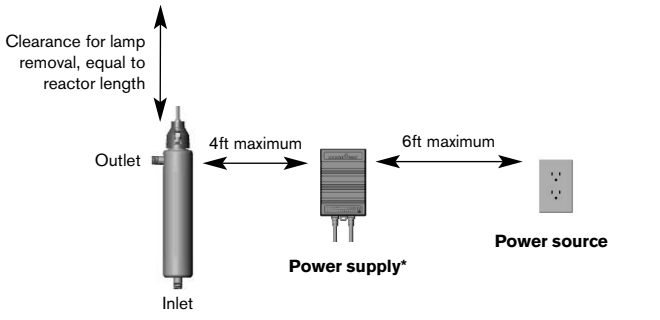


Note: Systems equipped with a sensor are not to be installed horizontally.

MODEL A

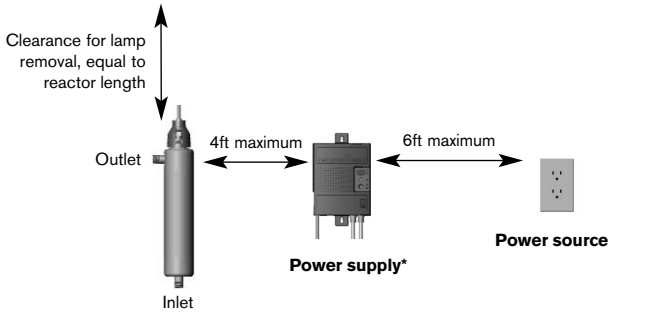


MODELS B & C



* Mount on wall through slot on back of power supply. Further secure using slot in bottom of power supply. **Caution: inspect for hidden electrical wiring or plumbing prior to drilling holes.**

MODELS D, E, F, Pro7 and Pro15



* Mount on wall through slots on top and bottom of power supply. **Caution: inspect for hidden electrical wiring or plumbing prior to drilling holes.**

10. Attach lamp cord to lamp (see Figures 10 and 11, page 17).
11. Plug system into the outlet. Note: When the UV system is first plugged in, the alarm may sound temporarily until the lamp is operational.
12. Clean the distribution lines: Once the UV system is installed, any contamination in the distribution lines between the UV system and your water outlets must be removed. Similarly, if the power goes out and your system is not equipped with an automatic shut-off feature, you must also disinfect the downstream distribution lines.
    - Make sure the UV system is on. Leave the system on during the entire cleaning process.
    - Remove a filter housing and fill the filter container with bleach (remove the filter for this process).
    - Replace the filter housing and allow water to flow to all faucets (hot and cold, inside and outside the house), your washing machine, toilets, and all other water outlets. Once you can smell bleach in the hot and the cold water, turn the water to that outlet off. When this has been done for all outlets, let the water sit in the water lines for two to four hours.
    - Completely flush all the lines a minimum of five minutes and then put the filter back in the filter housing.

OPERATION

Models A, B, and C

Power Supply

Model A is either 90-130V or 180-264V (50-60Hz). Models B & C are either 90-140V (60 Hz) or 190-265V (50Hz).

Indicator Light

When the lamp is operating properly, the indicator light on the power supply will be green. If the lamp is not operating properly, the indicator light will show red (Model A) or will not light (Model B or C) and an audible alarm will sound.

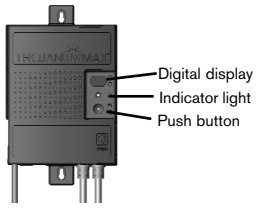
The audible and visual alarm indicators will persist until either the problem is corrected or the system is unplugged from the electrical outlet. Note: If the system is unplugged the water will not be disinfected and the distribution lines will have to be cleaned.

If you experience any kind of alarm (audible or visual), see the Troubleshooting Section of this manual.

Models D, E, F, Pro7, and Pro15

Power Supply

Auto ranging, constant current power supply. Accepts 90-265V at 50-60Hz.



Digital Display

Under normal operating conditions the Digital Display shows the number of months that the lamp has been operating. In the event of a failure of any kind, the display will indicate the nature of the problem. See the Troubleshooting Section for details.

Indicator Light

During normal operation the indicator light will be green.

Indicator light will turn amber:

- when lamp has operated for 11 months
- if UV sensor (if so equipped) detects a low UV output

Indicator light will turn red:

- when lamp has operated for 12 months
- if signal from UV sensor (if so equipped) is below set point
- if there is a failure of any kind, such as a lamp malfunction

An audible alarm will sound whenever the indicator light is red.

The audible and visual alarm indicators will persist until the problem is corrected or the system is unplugged from the electrical outlet. It is possible to disable the audible alarm; see 24-Hour Alarm Postpone Function. Note: If the system is unplugged the water will not be disinfected and the distribution lines will have to be cleaned.

If you experience any kind of alarm (audible or visual), see the Troubleshooting Section of this manual.

Elapsed Time Meter

The Elapsed Time Meter measures the number of months that the lamp has been operating. The lamp must be replaced after it has been operating for 12 months.

- After 11 months indicator light turns amber.
- After 12 months indicator light turns red and alarm sounds.

- After 14 months the alarm postpone function is disabled, indicating that the lamp must be replaced and that it is not providing proper disinfection.
- After lamp replacement, the time meter must be reset (see Elapsed Time Meter Re-Set Function).

Push Button

The push button has two functions.

24-Hour Alarm Postpone Function:
When the unit is in alarm, the indicator light is red and an alarm sounds. If you press the push button for less than two seconds, the indicator light will flash red and the audible alarm will stop. The unit is still in alarm, but the audio alarm stops for your convenience until you can contact a dealer.

This alarm will re-occur after 24 hours if its cause has not been corrected.

If the unit detects another problem during the 24-hour alarm postpone period, it will go into alarm again, the indicator light will turn solid red, and the alarm will sound.

After 14 months of lamp operation, the alarm postpone will not work until the lamp is replaced and the time meter is reset.

Elapsed Time Meter Re-Set Function:
After the lamp has been changed, the Elapsed Time Meter must be reset by following the procedure below:

a) Disconnect the power supply and leave it unplugged for 10 seconds.
b) Press and HOLD the push button.
c) Connect the power supply to the outlet while continuing to press the push button. The indicator light will flash green for about 3 seconds.
d) Continue to hold the push button until the indicator light flashes red, then release immediately.

External Control Relay

This feature provides switching for the operation of a solenoid (shut-off) valve and/or remote alarm. When the lamp is not operating properly or the UV sensor signals that the UV output is below set point, the contacts will open causing the solenoid to stop the water flow and/or a remote alarm to sound. The dry contact remains open if the lamp has been in operation for 12 months or more.

UV Sensor

The UV sensor measures the amount of UV light reaching it, allowing the system to monitor whether the intensity is above the minimum required for proper disinfection. The sensor is factory calibrated and is not field adjustable.

SERVICE AND MAINTENANCE

CAUTION:
UV-C rays are present when the unit is operating. Follow the instructions carefully to avoid injury to eyes and skin. Only qualified persons should install or replace UV lamps or sleeves.

There are two regular maintenance requirements common to all UV systems: cleaning and lamp replacement.

CLEANING

Minerals in the water will eventually coat the quartz sleeve (which protects the lamp), as well as the sensor (if system is so equipped). This coating must be cleaned off periodically because it reduces the amount of UV light reaching the water, thereby reducing disinfection performance.

Once a month, check the sleeve and clean it if you can see a mineral coating starting to form. If sleeve requires cleaning, refer to Lamp Replacement instructions but re-install the original lamp. If system is equipped with a sensor, be sure to clean the sensor each time the lamp is cleaned, as per Lamp Replacement instructions.

LAMP REPLACEMENT

The lamp's UV intensity decreases over time. You can safely use your lamp for 12 months, after which it must be replaced. For instance, if you use your system for 12 continuous months, you must replace your lamp at the end of this period. If you use the system only six months each year, you would need to change your lamp at the end of the second six-month period.

Follow the steps outlined below to replace your lamp.

Lamp Removal

1. Shut off water supply to (upstream of) the UV system.
2. Open a tap downstream of the UV unit to release pressure, then close this tap.
3. Unplug the power supply and let the lamp cool for 5 minutes.
4. Squeeze the sides of the safety cap in the area opposite the tabs (do not squeeze tabs), and remove the cap (Figure 1).
5. Pull the lamp plug off the lamp end (Figure 2). Do not pull on the cord when removing the plug. Note: During lamp replacement, the ground and strain relief wires of the lamp plug should remain connected to the peg on the reactor.
6. Holding the sleeve bolt, unscrew the lamp/sleeve assembly and carefully remove it from the reactor (Figure 3). Handle assembly by ends only. If required, a wrench can be placed on the two flat sides of the sleeve bolt. Do NOT apply the wrench to the lamp end, which sits within the sleeve bolt and protrudes 1/2".

7. To remove the lamp from its sleeve, use a glove or cloth to support and hold on to the sleeve. Holding the sleeve bolt tight, unscrew the lamp end, the top of which protrudes 1/2" above the sleeve bolt (Figure 4). Be careful not to drop the sleeve.

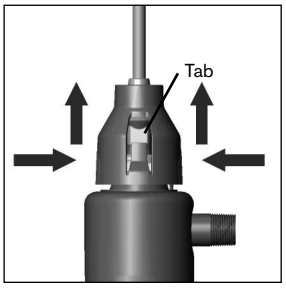


Figure 1

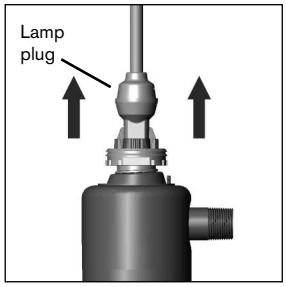


Figure 2

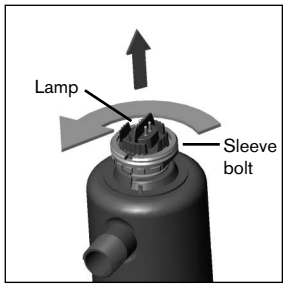


Figure 3

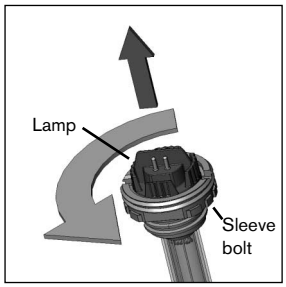


Figure 4

Cleaning

1. Remove first O-ring, sleeve bolt and second O-ring from lamp sleeve (Figure 5).
2. Clean lamp sleeve and sleeve bolt using a soft, lint-free cotton cloth (NOT paper towel or toilet paper) and a chemical scale-remover such as Lime-a-Way™ or CLR™ (follow manufacturer's directions). Remove all traces of cleaning solution by thoroughly rinsing.

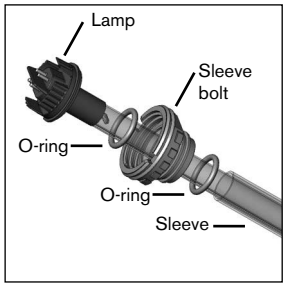


Figure 5

If unit is not equipped with a UV sensor, skip to "Lamp Installation".

3. Unscrew the sensor from the sensor port in the side of the reactor (Figure 6).
4. Inspect the two O-rings on the UV sensor for signs of damage or wear.
5. Ensure that the O-rings and any surfaces in contact with them are clean.
6. Clean the quartz-glass window of the UV sensor using a soft, lint-free cotton swab and a chemical scale-remover such as Lime-a-Way™ or CLR™ (follow manufacturer's

directions). Remove all traces of cleaning solution by thoroughly rinsing.

7. Insert the UV sensor completely into the sensor port, turning the sensor slowly while doing so. Water may be put on the sensor O-ring to facilitate this procedure.
8. Screw the brass nut on finger tight. **Caution: Over tightening may cause leakage.**

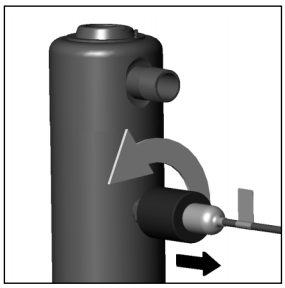


Figure 6

Lamp Installation

1. Each lamp and sleeve comes with two new O-rings. Place the new O-rings and the original sleeve bolt on the lamp sleeve as per Figure 7. **Caution: Do not lubricate any of the O-rings.**
2. Put the lamp completely into the sleeve. Maintain it in that position and screw the sleeve bolt into the lamp end until solidly hand-tight (Figure 8). **Caution: Over tightening will break the quartz lamp sleeve.**
3. Carefully place the lamp/ sleeve assembly into the reactor, making sure it is centered. Apply pressure to the assembly and screw it into the reactor until solidly hand-tight (Figure 9). **Caution: Over tightening will break the quartz lamp sleeve.**
4. Push the plug onto the end of the lamp while ensuring that the male tab on the lamp inserts into the female tab on the plug (Figure 10).
5. Push the safety cap on while ensuring that the grounding wires are under the cap and not in the way of the tabs (Figure 11).

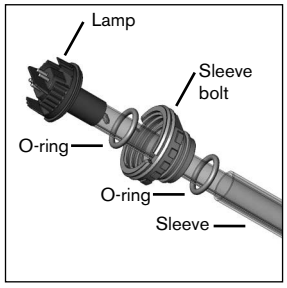


Figure 7

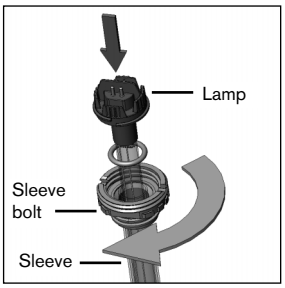


Figure 8

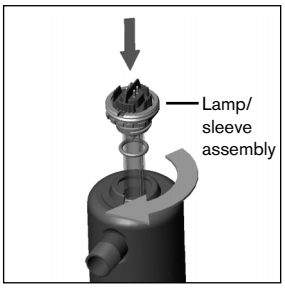


Figure 9

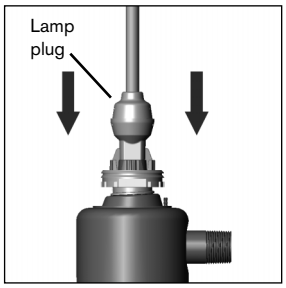


Figure 10

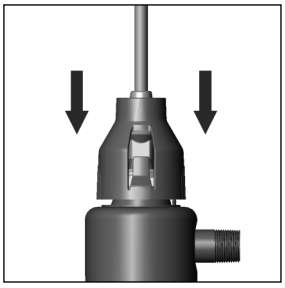


Figure 11

Restarting

For models A, B and C:

1. Connect the power supply to the outlet.

For all other models:

1. Press and hold the push button (Figure 12).
2. Connect the power supply to the outlet while continuing to press the push button. The indicator light will flash green for about 3 seconds.
3. Continue to hold the push button until the indicator light flashes red, then release immediately.
4. Open the water line and check for leaks.

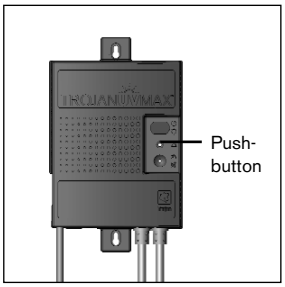


Figure 12

Disinfecting the Lines

It is recommended that the distribution lines be cleaned following any maintenance procedure in which the water in the lines may have been exposed to the air or to any undisinfected water.

1. Remove a filter housing, remove the filter, and fill the housing container with bleach. Replace the filter housing.
2. Allow water to flow to all faucets (hot and cold, inside and outside of the house), your washing machine, toilets, and all other outlets. Once you can smell bleach in the hot and the cold water, turn the water to that outlet off. When this has been done for all outlets, let the water sit in the water lines for two to four hours.
3. Completely flush all the lines a minimum of five minutes and then put the filter back in the filter housing.

WARRANTY

Our Commitment

To maximize the superior quality of Trojan UV disinfection, each product must be properly sized, installed, and maintained. If you experience difficulty with your Trojan product, our Technical Support Centre is available to help you.

During the applicable warranty period noted below, Trojan will provide warranty coverage, described below, for your product. After the product's warranty expires, repairs and replacement parts can be provided to you for a reasonable charge.

How to Get Help

To obtain help under this warranty, contact the Trojan Technical Support Center at 1-800-265-5774 or by email at residential@trojanuv.com. Please have available the model number, the date of purchase, the name of the dealer from whom you purchased your Trojan product ("the source dealer"), as well as a description of the problem you are experiencing. A Trojan technician will help you troubleshoot the problem and isolate the defective part.

For more information, please refer to the Troubleshooting section of your Owner's Manual. Owner's Manual information is also available at www.trojanuv.com

To establish proof of purchase to make a warranty claim, you will need to either retain your original invoice or complete and return a warranty card, which will register you as a product owner in Trojan's database.

Specific Warranty Coverage

Warranty coverage is specific to the following Trojan products:

- TrojanUVMax™
- Advantage Series
- UV 700 Series
- UV 600 Series

Ten-Year Limited Warranty for TrojanUVMax™ Reaction Chamber

Trojan warrants the reaction chamber on the TrojanUVMax™ product to be free from defects in material and workmanship for a period of ten (10) years from the date of purchase. During this time, Trojan will repair or replace, at its option, any defective TrojanUVMax™ reaction chamber.

Please return the defective part to a Trojan dealer, who will return it to Trojan. Trojan will either make the necessary repairs or, if Trojan determines that a replacement is required, will provide a replacement part. Trojan will then return the part to the dealer. This warranty does not include shipping and handling charges which will be collected from you by the dealer.

Parts repaired or replaced under this ten (10) year warranty will be covered under warranty to the end of the original ten (10) year warranty period.

This warranty is also subject to the conditions and limitations outlined under the heading "General Conditions and Limitations" below.

Five-Year Limited Warranty for Structural, Hardware and Electrical Components

Trojan warrants the structural, hardware, and electrical components to be free from defects in material and workmanship for a period of five (5) years from the date of purchase. During this time, Trojan will repair or replace, at its option, any defective parts covered by the warranty.

Please return the defective part to a Trojan dealer, who will return it to Trojan. Trojan will either make the necessary repairs or, if Trojan determines that a replacement is required, will provide a replacement part. Trojan will then return the part to the dealer. This warranty does not include shipping and handling charges which will be collected from you by the dealer.

Parts repaired or replaced under this five (5) year warranty will be covered under warranty to the end of the original five (5) year warranty period.

This warranty is also subject to the conditions and limitations outlined under the heading "General Conditions and Limitations" below.

One-Year Limited Warranty for Lamps, Sleeves and UV Sensors

Trojan warrants lamps, sleeves and UV sensors to be free from defects in material and workmanship for a period of one (1) year from the date of purchase. During this time, Trojan will repair or

replace, at its option, any defective parts covered by the warranty.

The warranty period for lamps and sleeves may be verified using date codes in addition to purchase receipts and Trojan's database of registered owners. Trojan will advise you whether the defective item needs to be returned to a Trojan dealer for failure analysis. Replacement lamps and sleeves provided under warranty will be sent to your Trojan dealer.

If the UV sensor experiences a problem which Trojan confirms is covered by warranty, please return the sensor to a Trojan dealer who will return it to Trojan. Trojan will either repair or replace the sensor and return the sensor to your dealer.

This warranty on lamps, sleeves and sensors does not include shipping and handling charges which will be collected from you by the dealer.

Parts replaced under this one (1) year warranty will be covered under warranty to the end of the original one (1) year warranty period.

This warranty is also subject to the conditions and limitations outlined under the heading "General Conditions and Limitations" below.

Warranty for Replacement Lamps and Parts

Trojan warrants replacement lamps, purchased for annual routine maintenance, and other parts purchased to repair product components that are no longer covered by the original warranty, to be free from defects in material and workmanship for a period of three (3) months from the date of purchase. During this time, Trojan will repair or replace, at its option, a defective replacement lamp or part free of charge except for shipping and handling charges.

The warranty period on replacement lamps and parts will be verified using date codes and/or purchase receipts. Trojan will advise you whether the defective item needs to be returned to a Trojan dealer for failure analysis. Replacement lamps and parts provided under warranty will be sent to your Trojan dealer.

General Conditions and Limitations

None of the above warranties cover damage caused by improper use or maintenance, accidents, acts of God or minor scratches or imperfections that do not materially impair the operation of the product. The warranties also do not cover products that are not installed as outlined in the applicable Owner's Manual.

The limited warranties described above are the only warranties applicable to the Trojan products listed in the "Specific Warranty Coverage" section. These limited warranties outline the exclusive remedy for all claims based on a failure of or defect in any of these products, whether the claim is based on contract, tort (including negligence), strict liability or otherwise. These warranties are in lieu of all other warranties whether written, oral, implied or statutory. Without limitation, no warranty of merchantability or of fitness for a particular purpose shall apply to any of these products.

Trojan does not assume any liability for personal injury or property damage caused by the use or misuse of any of the above products. Trojan shall not in any event be liable for special, incidental, indirect or consequential damages. Trojan's liability shall, in all instances, be limited to repair or replacement of the defective product or part and this liability will terminate upon expiration of the applicable warranty period.

Troubleshooting

Models A, B, C

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
Breaker repeatedly trips	Connection between lamp and lamp cord is wet	Clean and dry the cord and lamp, check unit for leaks
	Short circuit in the electrical assembly	Replace power supply
Leak at inlet or outlet	Threaded pipe fittings are leaking	Clean threads, reseal with Teflon tape, and re-tighten
Leak detected from area of reactor	Condensation of moist air on cold reactor (slow accumulation)	Control humidity, relocate unit, or insulate reactor
	O-ring on sleeve bolt damaged, deteriorated, or incorrectly installed	Inspect and replace if deteriorated
	Lamp/sleeve assembly not properly installed (too tight or not tight enough)	Tighten assembly solidly hand-tight
Audible alarm	Power failure, lamp failure	Unplug for 2 minutes then restart
		Replace lamp
		Replace power supply

Troubleshooting

Models D, E, F, Pro 7 and Pro 15

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
Digital display does not read anything	Unit is unplugged	Plug unit into AC power outlet
	No power at AC power outlet	Replace fuse or reset breaker
	Power cord is damaged	Replace power cord
	Power surge caused damage to electrical assembly	Replace power supply and use a surge protector
Breaker repeatedly trips	Connection between lamp and lamp cord is wet	Clean and dry the cord and lamp, check unit for leaks
	Short circuit in the electrical assembly	Replace power supply
Leak at inlet or outlet	Threaded pipe fittings are leaking	Clean threads, reseal with Teflon tape, and re-tighten
Leak detected from area of reactor	Condensation of moist air on cold reactor (slow accumulation)	Control humidity, relocate unit, or insulate reactor
	O-ring on sleeve bolt damaged, deteriorated, or incorrectly installed	Inspect and replace if deteriorated
	Lamp/sleeve assembly not properly installed (too tight or not tight enough)	Tighten assembly solidly hand-tight
Digital Display indicates a number between **0 and 10**	Not an alarm condition	
Digital Display indicates **11**	Not an alarm condition; lamp is in its 12th month of operation and will require replacement shortly	Ensure that you have a replacement lamp on hand
Digital Display indicates **12, 13 or 14**	Lamp has reached the end of its life	Replace lamp and reset elapsed time meter
Digital Display indicates **L0**, **L1**, **L2**, or **L3**	Lamp is not operating	Inspect lamp cord and reconnect; ensure safety cap snaps into place
		Replace lamp and reset elapsed time meter
Digital Display reads **F0** or **F1**	Power supply failure	Restart; if this fails, replace power supply
Digital Display reads **C0**	Indicator light is malfunctioning	Restart; if this fails, replace power supply

Note: If push-button is pressed during an alarm condition, the audible alarm is postponed 24 hours. The alarm condition persists.

Troubleshooting

Systems with Sensors

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
Digital Display reads **A3**	Not an alarm condition; system in high temperature mode	The system will do this every time the water is not flowing for more than 3-4 hours or is not in the correct temperature range. This warning will self-correct after water is allowed to flow through the system.
Digital Display reads **A0**	Quartz-glass sleeve has become coated	Follow cleaning procedures in manual
	UV sensor failing to detect the correct amount of UV energy	Ensure sensor is clean
		Ensure lamp/sleeve has been inserted properly; remove and re-insert
		Replace UV sensor if defective
	Lamp intensity is below safety level due to lamp age	Replace lamp
	Ultraviolet transmittance (UVT) of the water is below 75%.	Install prefiltration equipment to improve UVT of inlet water to recommended levels
Digital Display reads **EO**	Sensorboard failure	Replace sensor
Leak detected at sensor	UV sensor O-rings are damaged, deteriorated, or incorrectly installed	Inspect and replace O-rings if deteriorated

ISO 9001:1994

NSF information pertains to TrojanUVMax™ Pro7 and Pro15 models

This Class A system conforms to NSF Standard 55 for the disinfection of microbiologically contaminated water that meets all other public health standards. The system is not intended for treatment of water that has an obvious contamination source, such as raw sewage; nor is the system intended to convert wastewater to microbiologically safe drinking water. The system is intended to be installed on visually clear water (not coloured, cloudy, or turbid water). If this system is used for the treatment of surface waters a prefilter found to be in compliance for cyst reduction under ANSI/NSF Standard 53: Drinking Water Treatment Units - Health Effects shall be installed upstream of the system.

NSF Standard 55 defines waste water to include human and/or animal body waste, toilet paper, and any other material intended to be deposited in a receptacle designed to receive urine and/or feces (black waste); and other waste materials deposited in plumbing fixtures (gray waste).

System tested and certified by NSF International against ANSI/NSF Standard 55 for disinfection performance, Class A.

Installed by: _____

Date of installation: _____

Service numbers:

Installer - call _____

Trojan - call (519) 457-3400

Serial number: _____(see decal on back of power supply)

Model installed (check):

A	B	C D	E Pro7	F Pro15
☐	☐	☐ ☐	☐ ☐	☐ ☐

Corresponding lamp:	602803	602804	602805	602806	602807

Lamps **must** be replaced after 12 months of operation to ensure proper disinfection of your water.

Clean quartz sleeve and UV sensor (if equipped) frequently for optimum performance.

Lamp replacement dates:

1st:	_____	6th:	_____
2nd:	_____	7th:	_____
3rd:	_____	8th:	_____
4th:	_____	9th:	_____
5th:	_____	10th:	_____

602669 Rev D

TROJAN UV

WATER CONFIDENCE™

Head Office 3020 Gore Road, London, Ontario, Canada N5V 4T7
Tel: (519) 457-3400 Fax: (519) 457-3030

www.trojanuv.com

TROJANUVMAX™

Troubleshooting

All Models

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
System is operating but water tests reveal bacterial contamination	Lamp sleeve has become coated	Ensure lamp sleeve is clean
	Lamp is too old	Ensure lamp is less than 12 months old
	Equipment is acting as a breeding ground for pathogens	Ensure UV is the last piece of treatment equipment
	Pathogens are residing in the distribution lines post-UV	Ensure all distribution lines have been disinfected with chlorine
		Ensure there are no dead-ends of pipe
	UVT is too low for UV to be effective	Submit water sample for UVT testing

TROJANUVMAX™

Troubleshooting

Models D, E, F, Pro 7 and Pro 15

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
Digital display does not read anything	Unit is unplugged No power at AC power outlet Power cord is damaged Power surge caused damage to electrical assembly	Plug unit into AC power outlet Replace fuse or reset breaker Replace power cord Replace power supply and use a surge protector
Breaker repeatedly trips	Connection between lamp and lamp cord is wet Short circuit in the electrical assembly	Clean and dry the cord and lamp, check unit for leaks Replace power supply
Leak at inlet or outlet	Threaded pipe fittings are leaking	Clean threads, reseal with Teflon tape, and re-tighten
Leak detected from area of reactor	Condensation of moist air on cold reactor (slow accumulation) O-ring on sleeve bolt damaged, deteriorated, or incorrectly installed Lamp/sleeve assembly not properly installed (too tight or not tight enough)	Control humidity, relocate unit, or insulate reactor Inspect and replace if deteriorated Tighten assembly solidly hand-tight
Digital Display indicates a number between **0 and 10**	Not an alarm condition	
Digital Display indicates **11**	Not an alarm condition; lamp is in its 12th month of operation and will require replacement shortly	Ensure that you have a replacement lamp on hand
Digital Display indicates **12, 13 or 14**	Lamp has reached the end of its life	Replace lamp and reset elapsed time meter
Digital Display indicates **L0**, **L1**, **L2**, or **L3**	Lamp is not operating	Inspect lamp cord and reconnect; ensure safety cap snaps into place Replace lamp and reset elapsed time meter
Digital Display reads **F0** or **F1**	Power supply failure	Restart; if this fails, replace power supply
Digital Display reads **C0**	Indicator light is malfunctioning	Restart; if this fails, replace power supply

Note: If push-button is pressed during an alarm condition, the audible alarm is postponed 24 hours. The alarm condition persists.

TROJANUVMAX™

Troubleshooting

Models with Sensors

SITUATION	POSSIBLE CAUSE	POSSIBLE SOLUTION
Digital Display reads **A3**	Not an alarm condition; system in high temperature mode	The system will do this every time the water is not flowing for more than 3-4 hours or is not in the correct temperature range. This warning will self-correct after water is allowed to flow through the system.
Digital Display reads **A0**	Quartz-glass sleeve has become coated	Follow cleaning procedures in manual
	UV sensor failing to detect the correct amount of UV energy	Follow cleaning procedures in manual Ensure lamp/sleeve has been inserted properly; remove and re-insert
	Lamp intensity is below safety level due to lamp age	Replace lamp
	Corrosion on lamp pins	Replace lamp
	Ultraviolet transmittance (UVT) of the water is below 75%.	Verify UVT of water by performing a "dry test". Remove sensor as per manual, then drain the system to 1" below the sensor port. Reconnect sensor and plug the system in for 3 minutes. If the system alarms, call technical support group. If system does not alarm, turn water supply on - if alarm arises again, UVT is below 75% and pre-treatment may be required; call technical suppport group.
Digital Display reads **EO**	Sensorboard failure	Replace sensor
Leak detected at sensor	UV sensor O-rings are damaged, deteriorated, or incorrectly installed	Inspect and replace O-rings if deteriorated