

**TYPICAL INSTRUMENT IDENTIFICATION**

**NOTE:** IN ADDITION TO THE REQUIREMENTS DETAILLED BELOW, REFER TO SCADA POINT NAMING CONVENTIONS WHEN INSTRUMENT INTERFACES TO SCADA.

**FIELD IDENTIFICATION**

POSITION 1 2 3 4 5 6 7 8

IF REQUIRED

PROCESS IDENTIFIER

FUNCTIONAL IDENTIFICATION CODE

**SCHEMATIC IDENTIFICATION**

OUTPUT

FUNCTIONAL IDENTIFICATION CODE

OPERATING FUNCTION (OPTIONAL)

POT

F 1

BASIC INSTRUMENT

1234

L P2

PANEL LOCATION (OPTIONAL)

INPUT

PROCESS IDENTIFIER

a) FUNCTIONAL IDENTIFICATION CODE – (UP TO 4 CHARACTERS) \*

REFER TO DRAWING STD 1 FOR LISTING

\* NOTE THAT SCADA POINTS CAN ONLY HAVE 4 CHARACTERS

b) PROCESS IDENTIFIER – (3 NUMBERS IN DIFFERENT CATEGORIES)

REFER TO DRAWING STD 1 FOR PROCESS IDENTIFIER NUMBERING CONVENTION

\* SUFFICIENT SURPLUS IN NUMBERS TO DIFFERENTIATE SCADA POINTS WITHIN A LOOP PROVIDED THAT THEY ARE NOT MIXED INTO SCADA – REFER TO SCADA POINT NAMING CONVENTION

**SCADA POINT NAMING CONVENTION**

**NOTE:** ALL DEVICES INTERFACED WITH SCADA MUST FOLLOW THE SCADA POINT NAMING CONVENTION.

**I/O POINT NAMING CONVENTION**

POSITION 1 2 3 4 5 6 7 8 9 10

IF – WATER

RTU LOCATION

REMOTE SITE OR PLANT

MEDIUM (3 CHARACTERS)

3 CHARACTER PROCESS IDENTIFIER (AS DETAILED RIGHT)

3 CHARACTER FUNCTIONAL IDENTIFIER

**SCHEMATIC IDENTIFICATION**

SCADA

























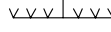




















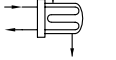
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

















































FUNCTIONAL IDENTIFICATION

PROCESS IDENTIFICATION

INSTRUMENT OPERATING FUNCTIONS		XXXX	INPUT, OUTPUT, OR FUNCTION.
ANALYTICAL FUNCTIONS			
RES C <sub>2</sub>	RESIDUAL CHLORINE	XXXX	SCADA
SO	SULFUR DIOXIDE	XXXX	SCADA
COMB	COMBUSTIBLE GAS	XXXX	INPUT, OUTPUT, OR FUNCTION.
H <sub>2</sub> S	HYDROGEN SULFIDE	XXXX	ACCESSIBLE
PH	PH	XXXX	SPECIAL PURPOSE DIGITAL DEVICE FOR PROCESSING MAINLY ANALOG INFORMATION.
DO	DISSOLVED OXYGEN	XXXX	EG. SLC (SINGLE LOOP DIGITAL CONTROLLER)
O <sub>2</sub>	OXYGEN	XXXX	
SWITCHING FUNCTIONS			
HA	HAND-AUTO SELECTION	XXXX	SPECIAL PURPOSE DIGITAL DEVICE FOR PROCESSING MAINLY ANALOG INFORMATION.
HOA	HAND-OFF-AUTO SELECTION	XXXX	ACCESSIBLE
ASO	ASO-OFF-AUTO SELECTION	XXXX	
S/S	START-STOP	XXXX	
L/L	LEAD-LAG SELECTION	XXXX	
F/S	FAST-SLOW SELECTION	XXXX	
OCA	OPEN-CLOSE-AUTO SELECTION	XXXX	
OSC	OPEN-STOP-CLOSE SELECTION	XXXX	SPECIAL PURPOSE DIGITAL DEVICE FOR PROCESSING MAINLY DIGITAL INFORMATION.
SEL	SELECTOR SWITCH	XXXX	ACCESSIBLE
O/O	ON-OFF SELECTION	XXXX	
M/A	MANUAL-AUTO SELECTION	XXXX	
L/R	LOCK-REMOTE SELECTION	XXXX	COMPUTER - INTERNAL SYSTEM FUNCTION (i.e. COMPUTATION/SIGNAL CONDITIONING)
EM	EMERGENCY SHUTDOWN	XXXX	
ACK	ACKNOWLEDGE (ALARM)	XXXX	
FOR	FORWARD-OFF-REVERSE	XXXX	
LOR	LOWER-OFF-REVERSE	XXXX	COMPUTER - INTERNAL SYSTEM FUNCTION NORMALLY ACCESSIBLE TO OPERATOR
OTHER FUNCTIONS			
D/P	DIFFERENTIAL PRESSURE	XXXX	
UP	CURRENT TO PRESSURE	XXXX	
IBD	INBOARD BEARING	XXXX	
OSD	OUTBOARD BEARING	XXXX	
VB	VELOCITY	XXXX	

PRIMARY ELEMENT SYMBOLS			
	ORIFICE PLATE		
	VENTURI OR FLOW TUBE		
	FLUME		
	WEIR		
	VARIABLE AREA FLOW INDICATOR (ROTAMETER)		
	FLOW ELEMENT INTEGRAL WITH TRANSMITTER (MASS FLOW, ETC.)		
	DIAPHRAGM SEAL		
	IN-LINE PRESSURE SENSOR		
	VORTEX FLOW SENSOR		
	IN-LINE CAPACITANCE FLOW ELEMENT		
	MAGNETIC FLOWMETER		
	SONIC FLOWMETER (DOPPLER OR TRANSIT TIME)		
	POSITIVE DISPLACEMENT METER		
	THERMAL MASS FLOW ELEMENT		
	AVERAGING PITOT TUBE		
	PITOT TUBE		
	PROPELLER OR TURBINE METER		
	CORIOLIS MASS FLOWMETER		
	FLOAT LEVEL ELEMENT		
	DISPLACEMENT LEVEL ELEMENT		
	BUBBLER LEVEL TUBE		
	ULTRASONIC/MICROWAVE LEVEL ELEMENT		
	RADIO FREQUENCY SHIELD ELEMENT		
	VIBRATING TUNING FORK LEVEL SWITCH		
	THERMAL SENSING RTD STRIP		
N INSTRUMENT SIGNAL SYMBOLS		MISCELLANEOUS SYMBOLS	
	INSTRUMENT SUPPLY, PROCESS TAPS		INTERLOCK — SEE CONTROL SYSTEM DESCRIPTION
	ELECTRIC SIGNAL		RESET FOR LATCH-TYPE OPERATOR
	CAPILLARY TUBE OR FILLED SYSTEM		ANNUNCIATOR HORN
	ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)		GROUND
	ELECTROMAGNETIC OR SONIC SIGNAL (UNGUIDED)		INSTRUMENT LOOP SHIELD GROUND
	SOFTWARE OR DATA LINK		BOND
	MECHANICAL LINK		
	HYDRAULIC		
LINE DESIGNATIONS		GENERAL NOTES	
E3	ELECTRIC POWER SUPPLY 120 VAC 60 HZ (UNLESS OTHERWISE NOTED)	1. REFER TO DRAWING EDC01-01 FOR EQUIPMENT AND PIPE COMMODITY DESIGNATIONS.	
SA	SERVICE AIR SUPPLY		
IA	INSTRUMENT QUALITY AIR SUPPLY		
C2	WATER SUPPLY CL, C2, C3, ETC.		

	ADJUSTABLE SPEED CONTROLLER (ASD)		LEVEL CONTROL GATE
	ADJUSTABLE SPEED DRIVE (ASD)		MIXER
	BAR SCREEN, MECHANICAL		MIXER, HORIZONTAL SURFACE
	INLINE SLUDGE SCREEN		MIXER, INLINE STATIC
	BLOWER OR CENTRIFUGAL FAN		MOTOR
	SLIDING VANE COMPRESSOR		PUMP, CENTRIFUGAL
	BOILER		PUMP, PROPELLER
	BURNER, WASTE GAS		PUMP, DIAPHRAGM OPERATOR
	CENTRIFUGE		PUMP, GEAR
	CHILLER		PUMP, METERING
	COMPRESSOR, ROTARY SCREW		PUMP, PROGRESSIVE CAVITY
	COMPRESSOR, PISTON		PUMP, ROTARY LOBE
	DIFFUSER HEADER		PUMP, SUBMERSIBLE
	ENGINE		PUMP, VERTICAL
	EJECTOR, PNEUMATIC		PUMP, LINE SHAFT
	FILTER OR FILTER-SILENCER, INLET AIR		STOP LOG
	FLOW METER		SLIDE GATE (NORMALLY CLOSED)
	RIGHT ANGLE GEAR		SLIDE GATE (NORMALLY OPEN)
	GENERATOR		TELESCOPIC GATE VALVE
	GRINDER		ULTRA VIOLET UNIT
	HEAT EXCHANGER, PLATE TYPE		WEIR
	HEAT EXCHANGER, SPIRAL TYPE		BASKET SCREEN
	HEAT EXCHANGER, STRAIGHT TUBE TYPE		
	HEAT EXCHANGER, U-TUBE TYPE		

   	FLAP GATE SCREEN, ROTARY OVERFLOW SLICER CONDENSATE TANK	  	RECEIVER OR PRESSURE VESSEL TANK, DOUBLE WALLED TANK
<b>PIPE LINE DEVICES</b>			
                      	INJECTOR FLAME ARRESTER FLAME ARRESTER WITH THERMAL SHUT-OFF VALVE FLAME CHECK TRAP SEDIMENT TRAP PRESSURE REDUCING ASSEMBLY GAS DRIP TRAP LIQUID SEPARATOR PIPELINE FILTER RUPTURE DISK (VACUUM RELIEF) RUPTURE DISK (PRESSURE RELIEF) AIR VENT STEAM VENT QUICK CONNECTOR CAP OR PLUG BLIND FLANGE REDUCER FLEXIBLE CONNECTION (SEE NOTE 3) AIR FILTER (HVAC) HEATING COIL COOLING COIL HARD PIPE UTILITY CONNECTION	               	AUTOMATIC AIR VENT MANUAL AIR VENT STRAINER FOOT VALVE AIR SEPARATOR DRAIN CALIBRATION CHAMBER PULSATION DAMPER SIGHT GLASS THERMOWELL SUCTION GUIDE STRAINER FLOW STRAIGHTENING VANES MOTORIZED CONTROL DAMPER BALANCING DAMPER FIRE DAMPER BACKDRAFT DAMPER
<b>MISCELLANEOUS DEVICES</b>			
71-05-001   	UTILITY STATION (NUMBER, IF ANY, RESONATES TYPE) FIRE HYDRANT & VALVE VACUUM BREAKER (BFP TYPE)	  	SAMPLER CONTROL UNIT PURGE OR FLUSHING CONNECTION

NOTES:

- THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HERE MAY NOT BE USED ON THE CONTRACT DRAWINGS.
- SEE NOTE C-1 FOR EQUIPMENT AND PIPE COMMUNITY DESIGNATION SYSTEMS.
- SEE DRAWING C-1 FOR INSTRUMENTATION SYMBOLS.

**PRIMARY PROCESS FLOW**  
**SECONDARY PROCESS FLOW**  
**FUTURE**  
**VENDOR PACKAGE BOUNDARY**  
**EXISTING PIPING AND EQUIPMENT**  
**EXISTING PIPING AND EQUIPMENT TO BE REMOVED**  
**ENCLOSURE BOUNDARY**

**PROCESS & SIGNAL CROSS REFERENCE SYSTEM**

**VALVES**

THREE WAY VALVE SOLenoid VALVE		NEEDLE VALVE		PRESSURE REGULATING VALVE (EXTERNAL SENSING)
GATE VALVE (NORMALLY OPEN)		DOUBLE LEAF CHECK VALVE		PRESSURE REGULATING VALVE (INTERNAL SENSING)
GATE VALVE (NORMALLY CLOSED)		CHECK VALVE		BACK PRESSURE REGULATING VALVE
PLUG VALVE (NORMALLY OPEN)		BALL CHECK VALVE		PRESSURE AND VACUUM RELIEF VALVE
PLUG VALVE (NORMALLY CLOSED)		DOUBLE CHECK VALVE BACKFLOW PREVENTER		VACUUM RELIEF VALVE
BALL VALVE (NORMALLY OPEN)		PUMP DISCHARGE VALVE (TRIPLE DUTY)		PRESSURE RELIEF VALVE
BALL VALVE (NORMALLY CLOSED)		GAUGE OR ROOT VALVE		IN-LINE, SPRING LOADED RELIEF VALVE
BUTTERFLY VALVE		KNIFE GATE VALVE		MUD VALVE
BUTTERFLY DAMPER VALVE		BALANCING COCK		
GLOBE VALVE		CIRCUIT BALANCING VALVE		
DIAPHRAGM VALVE		THERMOSTATICALLY CONTROLLED VALVE		
ANGLE VALVE		PRESSURE GAUGE ISOLATION VALVE & SEAL		
FLOAT VALVE				
PINCH VALVE				

**VALVE OPERATORS**

<b>XX MOTOR ACTUATOR</b>	<b>XX SOLENOID</b>	<b>XX DIAPHRAGM (SPRING OPPOSED)</b>
<b>XX PNEUMATIC CYLINDER</b>	<b>XX DIAPHRAGM (PRESSURE BALANCED)</b>	

**NOTE:**  
 ON LOSS OF POWER (PNEUMATIC OR ELECTRICAL)  
 XX: FO = FAIL  
 FC = FAIL CLOSED  
 FT = FAIL TO INTERMEDIATE POSITION  
 BLANK = FAIL TO LAST POSITION

4. SYMBOLS ARE ARRANGED ON DRAWINGS AND IN CATEGORIES FOR CONVENIENCE ONLY; SYMBOLS MAY BE USED ON ANY OF THE CONTRACT DRAWINGS.  
 5. REFER TO MECHANICAL DRAWINGS FOR SPECIFIC TYPE OF CONNECTOR.

100 - HEADWORKS
200 - SECONDARY TREATMENT
300 - TERTIARY TREATMENT
400 - THICKENING & Dewatering
500 - EFFLUENT WATER SYSTEM
600 - SERVICE AIR

COMMODITY ABBREVIATIONS
CA - COMPRESSED AIR
CL - SODIUM HYPOCHLORITE
DCW - DOMESTIC COLD WATER
DHW - DOMESTIC HOT WATER
DR - DRAIN
DWS - DEWATERED SLUDGE
EW - EFFLUENT WATER
FEW - FILTERED EFFLUENT WATER
FL - FILTRATE
FP - FLUSH POINT
HL - HYDRATED LIME
HL - MIXED LIQUOR
MLQ - MIXTURED MIXED LIQUOR
O/P - OVERFLOW
PA - PROCESS AIR
P/E - PRIMARY EFFLUENT
POLY - POLYMER
MLD - MIXED LIQUOR
RAS - RETURN ACTIVATED SLUDGE
ROL - RECYCLED COLD WATER
RS - RAW SEWAGE
SDS - SCREENINGS
SE - SECONDARY EFFLUENT
SL - SAMPLE LINE
SSS - SCREENED RAW SEWAGE
SB - SUBSTRANT
THAS - THICKENED MATS ACTIVATED SLUDGE
VAC - VACUUM
WT - WENT
WAS - WASTE ACTIVATED SLUDGE

EQUIPMENT ABBREVIATIONS
AC - AIR COLUMN
AD - AIR DRYER
B - BLOWER
BFP - BELT FILTER PRESS
BSQR - BASKET SCREEN
CBQ - COARSE BUBBLE DIFFUSERS
CL - CLAMPING MECHANISM
COMP - COMPRESSOR
DAF - DISSOLVED AIR FLOTATION UNIT
EXP - EXPANSION TANK
FBO - FINE BUBBLE DIFFUSERS
LFS - LINE FEED SYSTEM
MSOR - MANUAL SCREEN
MIR - MIER
P - PUMP
PFT - PRIMARY FILTER TREATMENT
SC - SECONDARY CLAMPING
SSOR - SCREEN SOR
STR - AUTOMATIC STRAINER
T - TANK
TRL - TRAILER

REVISIONS