## PSU1-2 Pump Sequencing Unit

### *Self-Contained Interoperable Controller Model UCP-1 for Software Version 2*

SUPERSEDES: July 24, 2012      EFFECTIVE: April 29, 2013

Job: _____

Contractor: _____

Date: _____

Engineer: _____

Rep: _____

Tag/Item #: _____

# PSU1-2

The PSU1-2 pump sequencing unit is a stand-alone microprocessor-based controller for pump control applications.

## Overview

The PSU1-2 is a compact, microcontroller-based controller for support of applications with pump sequencing needs. It controls the pump sequences, rotates and stages the pumps according to the programmed mode, maintains desired differential temperature (Delta T) or desired pressure differential (Delta P), and generates flow alarms if no flow is detected.

The controller is based on LONWORKS® networking technology. The controller can be networked to a higher-level control system for monitoring and control applications.

## Features

- Control of two primary pumps with three control modes
- Standby pump operation with manually selectable lead pump
- Equal runtime operation with adjustable run time
- Two-stage digital control based on Delta-T or one stage modulated control based on either Delta-T or Delta-P
- Automatic configuration with a Local Control Interface (LCI) touchscreen
- Alarm/Event reporting
- LONWORKS® interface to building automation systems

# Specifications

## Electrical Inputs

**Cabling:** twisted shielded pair, 18 AWG recommended—500 feet max. (152 meters), 10-bit resolution

**Demand:** Dry Contact, Normally Open

**Flow:** Dry Contact, Normally Open, Normally Closed

**Supply Water Temperature, Return Water Temperature:** Precon Type II or III 10K Thermistor

**Differential Pressure:** ACC-DPT-L-250 (no resistor), DPS629-23 (no resistor), or DPS3100D-05 (with resistor)

## Electrical Outputs

**Pump Enable:** 24 Volts AC, 1 Amp at 50 °C, 0.5 Amps at 60 °C, limited by Class 2 supply

**Pump Modulation:** 0 - 10 Volts DC, 2K Ohm minimum load

## Power

**Requires:** 24VAC (20VAC to 28VAC), requires an external Class 2 supply

**Power Consumption:** 7.2W with no external loads, maximum limited by the Class 2 supply rating

### Recommended Sensor Wire

| Cable Type | Pairs | Details | Taco Catalog No. |
|---|---|---|---|
| 18AWG | 1 | Stranded Twisted Shielded Pair, Plenum | WIR-018 |

### FTT-10A Network

• Speed: 78KBPS

• 42.4 Volts DC max

• Cabling: Maximum node-to-node distance: 1312 feet (400 meters)

• Maximum total distance: 1640 feet (500 meters)

| Cable Type | Pairs | Details | Taco Catalog No. |
|---|---|---|---|
| Level 4 22AWG (0.65mm) | 1 | Unshielded, Plenum, U.L. Type CMP | WIR-022 |

For detailed specifications, refer to the *FTT-10A Free-Topology Transceiver User's Guide* published by Echelon Corporation (www.echelon.com/support/documentation/manuals/transceivers).

## Mechanical

### Housing

• Dimensions: 5.55" (141mm) high, 6.54" (166 mm) wide, 1.75" deep (44 mm)

• ABS

### Weight

• Controller Weight: 0.70 pounds (0.32 kilograms)

• Shipping Weight: 1.0 pounds (0.46 kilograms)

### Electronics

• Processor: 3150 Neuron 10 MHz

• Flash: 48 Kilobytes

• SRAM: 8 Kilobytes

• Termination: 0.197" (5.0 mm) Pluggable Terminal Blocks, 14-22 AWG

### Environmental

• Temperature: 32 °F to 140 °F (0 °C to 60 °C)

• Humidity: 0 to 90%, non-condensing

### Agency Listings

• UL Listed for US and Canada, Energy Management Equipment PAZX and PAZX7.

### Agency Compliances

• FCC Part 15 Class A

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# CONTROLS MADE EASY®

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