



TCU800 Pump Controller

Combining Automated Pump Controls & Advanced SCADA Communications into a Powerful & Competitive Solution

Advanced Features

- State-of-the-art pump controller designed to automate operation of simplex, duplex & triplex sewer pumping stations
- New & improved version of field-proven TCU001 pump controller currently operating tens of thousands of pumping stations in the US
- 5" touchscreen operator interface, faster processing power & additional on-board inputs for increased monitoring & motor protection
- Intuitive off-the-shelf control of typical fixed-speed pumping station
- Future release will incorporate an expansion module for Variable Frequency Drive (VFD) applications

System-Wide Operations

- When utilized in TAC II SCADA System & Symphony software, CUs coordinate system-wide operation of pump stations to reduce force main pressures & equalize flow into treatment plant, reducing energy costs & solving daily peak-flow problems

Self-Contained

- All necessary hardware & software to control pumps based on level input from floats/pressure transducers
- Integrated True RMS AC phase monitor for accurate three-phase voltage readings & under/over-voltage motor protection
- Additional on-board monitoring of CTs for motor current monitoring & digital inputs for motor seal fail & thermal overload monitoring for all 3 pumps
- Integrated HOA switches are fail-safe & remain functional if TCU800 not powered
- Touchscreen operator interface presents operation menu, set-point adjustment, fault resets & status indication with the touch of a finger
- Ultra-bright LEDs for at a glance indication of pump, power & alarm status & active communications

SCADA Ready

- SCADA-ready with open Modbus RTU & ASCII protocols
- Optional factory integrated TAC II radio, network interface adapter or Verizon cellular modem

☎ 855.291.1980

✉ sales@smartcoversystems.com

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SMARTCOVER®

A Badger Meter® Brand

FEATURES

- Easy to understand, install and use
- No PLC knowledge required
- Multiple operation profiles
- Redundant level sensing
- Configurable pump alternation
- Digital elapsed time meters
- True RMS 3-phase monitoring
- Alarm light and horn control
- Integrated charger for Backup Battery
- Free TCU800 configuration software
- Upload/download settings with Laptop
- Configurable via on-board 5" touchscreen
- Free factory support for life of product
- Three-year parts and labor warranty
- Three-year lightning damage warranty
- Expandable I/O Interface
- RS-485 Modbus Serial Radio Interface
- Customizable for VFD applications (future release)
- UL Listed for process control equipment
- Optional FIPS 140-2 Validated AES-128 Encryption

Technical Specifications

- **Box Dimensions:** 5.75" X 8.75" X 5.45"
- **Supply Voltage:** 120VAC +/-10%, 60 Hz
- **Supply Current:** 0.5-1.5A
- **Processor Core:** AM335x SoC with an ARM Cortex A8 (1GHz) + dual PRU (200MHz); 512MB DDR3 and 4GB onboard flash
- **5" TFT LCD** w/ capacitive touchscreen and overlay push-button
- **H-O-A Switches:** 3 x 3-position switches for Hand-Off-Auto operation
- **Internal Phase Monitor:** 240 VAC @ 60Hz single- or three-phase; 480 VAC @ 60Hz three-phase using external resistors
- **Analog Inputs:** (3) 4-20mA @ 250Ω / 0-5VDC or 0-10VDC @ 120KΩ, 15-bit precision
- **Digital Inputs:** (17) 10-30V @ 6KΩ / 30-300V with external resistors, 10-30VDC / pulse input <1000 PPS
- **Digital Outputs:** (4) Solid State Relays, 120-240VAC @ 60Hz, 1A, Pilot Duty
- **Alarm Relays:** (2) Electromechanical Relays, 120VAC @ 60Hz, 0.5A / 0-24VDC, 1.0A; NO (Alarm Horn), NC (Alarm Light)
- **Isolated 24VDC Bias:** 300 mA current limited and regulated
- **Input Protection:** MOV (Metal Oxide Varistor), TVS (Transient Voltage Suppressor), and on-chip transformer isolation
- **Integrated Radio:** 2W @ 200 MHz or 5W @ synthesized 400 MHz (Optional)
- **Ethernet Interface:** 10/100base-T (Optional)
- **Cellular Interface:** Verizon Wireless (Optional)
- **RS-232 Interface:** 9600-115200 baud serial interface for Modbus ASCII devices (Pending Release)
- **RS-485 Interface:** 9600-115200 baud serial interface for Modbus ASCII/RTU devices
- **USB 2.0** (Full Speed): 2 ports external, 1 port internal
- **Recommended Battery Backup:** 12-volt, sealed, lead-acid battery (sold separately)

Environmental Conditions

- **Ambient Operating Temperature Range:** -10°C to 60°C (14°F to 140°F). The upper temperature limit is 50°C (122°F) when using the recommended backup battery
- **Relative Humidity:** 0-100%
- **Atmospheric Pressure:** 75-106 KPa
- **Overvoltage Category II**
- **Pollution Degree 2**
- **Safety Approval:** UL listed for Process Control Equipment (UL1092)

WARRANTY

This product includes a 1-year return-to-factory warranty against defects in material & workmanship.

When installed with factory recommended surge protection, the return-to-factory warranty is extended to 3 years. The extended warranty also covers damage due to lightning and surge for the entire three-year period when installed per factory-approved requirements.

We will repair or replace at its option, F.O.B. Melbourne, Florida, any part or parts of this product during the warranty period. A Return Authorization (RA) must be obtained by contacting the Factory Repair Center at 321-259-5009 or by email at rma@dataflowsys.com.

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