iWorx by Taco Electronic Solutions

Submittal Data Information

501-029

MPU3 Air Control – Pressure Dependent Multi-Zone

Self-Contained Interoperable Controller Model UCP-1

SUPERSEDES: June 14, 2011 EFFECTIVE: June 11, 2012

Job: _____ Engineer: _____

Contractor: _____ Rep: _____

Date: _____ Tag/Item #: _____

MPU3

The MPU3 is a self-contained microprocessor-based controller for multiplexed zone package units. Applications include packaged rooftop DX units with up to two stages of cooling, or a floating point control valve, or a modulated output (valve or variable speed circulator) two stages of heating, or a floating point control valve, or a modulated output (valve or variable speed circulator) economizer, and bypass damper.

Overview

Digital inputs are provided for fan status, mixed air low limit indication, smoke detector, filter status and indoor air quality (IAQ). Analog inputs are provided for mixed air temperature, return air humidity, supply air temperature, and supply duct static pressure. The MPU3 incorporates digital outputs in the form of triacs for fan start/stop, two cooling stages, two heating stages, floating point reheat valve, and a two-position economizer. In addition, four analog outputs are provided to control cooling and heating outputs, a modulated economizer, and bypass damper.

The MPU3 is based on the LONWORKS® networking technology. The controller can be networked to a higher-level control system for monitoring and control applications.

Features

- Two stages of cooling, or a floating point control valve, or a modulated output (valve or variable speed circulator)
- Two stages of heating, or a floating point control valve, or a modulated output (valve or variable speed circulator)
- Modulated bypass damper
- Digital or modulated economizer
- Economizer enabled based on enthalpy calculations or dry bulb
- Minimum cycle timers for stages
- Runtime accumulation for heating, cooling, and fan
- Dehumidification, dehumidification with reheat, or dehumidification with heat
- Multiplexed control of 32 zones based on zone demand
- Supply air temperature safety limits
- Supply air temperature setpoint reset based on greatest zone demand
- Time proportioned control of the staged outputs to reduce cycling
- Proportional+Integral control of the modulated economizer, modulated heating modulated cooling and static pressure
- Local backup schedule
- Filter status, fan proof, mixed air low limit, and smoke detection inputs
- Fan control energized on a call for heating, cooling or ventilation
- Automatic Heat/Cool changeover
- IAQ compensation based on the IAQ input or zone controller alarm
- Outside Air Temperature cutoffs
- Real Time Clock
- LONWORKS® interface to building automation systems
- Automatic configuration with the LCI

- Alarm/Event reporting

Specifications

Electrical

Inputs

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

Mixed Air Low Limit, Filter Status, Smoke Detect, Local IAQ Alarm

- Dry Contact
- Normally Open
- 5 Volts DC Max

Fan Proof

- Dry Contact
- Normally Closed

Return Air Humidity, Static Pressure

- 0 - 10 Volts DC

Mixed Air Temperature, Supply Air Temperature, Return Air Temperature

- Precon Type III 10K thermistor

Outputs

Fan Start/Stop, Heating Stage 1, Heating Stage 2, Cooling Stage 1, Cooling Stage 2, Reheat Valve Open, Reheat Valve Close, Digital Economizer

- 24 Volts AC
- 1A @ 50C, 0.5A @ 60C, limited by the Class 2 supply rating

Modulated Economizer, Bypass Damper

- 0-10 Volts DC
- 2K Ohm minimum load
- 8 bit resolution

Power

Power Requirements

- 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
- 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).

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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

CONTROLS MADE EASY®

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