DXU4 Universal Air Control w/Humidity
Self-Contained Interoperable Controller Model UCP-1

SUPERSEDES: May 10, 2010   EFFECTIVE: June 11, 2012

Job: _____   Engineer: _____

Contractor: _____   Rep: _____

Date: _____   Tag/Item #: _____

DXU4

The DXU4 Universal Air Control is a stand-alone microprocessor-based controller for single zone DX package units and air handler units with an economizer. The application includes packaged rooftop DX units and air handler units with up to two stages of heating, two stages of cooling, air handler units with analog heating and cooling valves, and a modulated economizer.

Overview

Digital inputs are provided for fan status, mixed air low limit status, smoke detector, and filter status. Analog inputs are provided for mixed air temperature, return air humidity and supply air temperature. Indoor Air Quality can be defined by the user as analog or digital. Zone temperature can be sensed by a two-wire serial interface to an iWorX TS300 series thermostat or a 10 K Ohm Precon Type II or Type III Thermistor. The controller incorporates digital outputs in the form of triacs for fan operation, two heating stages, two cooling stages and a humidifier and dehumidification reheat valve open and close. The heating or cooling stage triacs can also be configured to control floating point valves. In addition, analog outputs are provided to control an analog heating and cooling valve as well as a modulated economizer, if required.

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

Features

- Two stages of cooling, or a floating point cooling valve, or a modulated cooling valve
- Two stages of heating, or a floating point heating valve, or a modulated heating valve
- Humidification
- Dehumidification, Dehumidification with reheat
- Modulated economizer
- Economizer enabled based on enthalpy or dry bulb calculations
- Runtime accumulation for heating, cooling and fan
- Individual temperature setpoints for occupied/unoccupied heat and cool
- Time proportioned control of the staged outputs to reduce cycling
- Proportional + Integral control of the modulated economizer, modulated heating and cooling
- Thermostat with space temp, setpoint adjust, fan override, occupancy override
- Local backup schedule
- Minimum cycle timer
- Mixed air low limit protection
- Filter status, fan proof, and smoke detection input
- Fan control energized on call for heating or cooling
- IAQ compensation based on IAQ input
- Outside Air Temperature Cutoffs
- Supply Air Temperature cooling limit
- Automatic heat/cool changeover

• Automatic configuration with the LCI
• Alarm/Event reporting
• Real Time Clock
• LonWorks interface to building automation systems

SPECIFICATIONS
Electrical
Inputs
• Cabling: twisted shielded pair, 18 AWG recommended—500 feet max. (152 meters)
• Resolution: 10 bit
Supply/Return/Room Humidity
• 0-10 Volt
Mixed Air Temp and Supply Air Temp
• Precon Type II or Type III 10K thermistor
Fan Proof
• Dry Contact
• Normally Closed
Filter, Mixed Air Low Limit, and Smoke
• Dry Contact
• Normally Open
Indoor Air Quality
• Dry Contact, Normally Open
• Analog, 0 - 10 Volt
Thermostat Network
• 12 Volt nominal, internally limited to 0.04 A
Outputs
Analog Outputs: Modulated Economizer, Modulated Heating, Modulated Cooling
• 0-10 Volt
• 2K Ohm minimum load
• 8 bit resolution
Triac Outputs: Fan, H1, H2, C1, C2, Humidifier, Dehumidification Reheat Valve Open, Dehumidification Reheat Valve Close
• 24 VAC
• 1A @ 50C, 0.5A @ 60C, 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).

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

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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