

## DXU-4

The DXU-4 package unit controller 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, and an economizer, air handler units with analog heating and cooling and a modulated economizer.

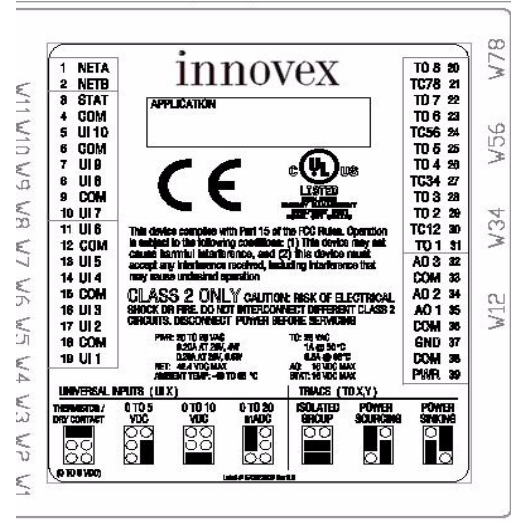
## Overview

Digital inputs are provided for fan status, mixed air low limit indication, 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 a 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 start/stop, two heating stages, and two cooling stages. Instead of two heating stages and two stages of cooling, the controller can be configured for a floating point heating and cooling valve. In addition, analog outputs are provided to control an analog heating and cooling valve as well as a modulated economizer if required. Indoor Air Humidity can be achieved by providing a contact closure for a humidifier.

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
- 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
- Configurable cutoff temperatures for heat, cool and economizer
- Fan control energized on call for heating or cooling or call for cooling or 2nd stage of heat and call for cooling
- Local backup schedule
- Minimum cycle timer
- Mixed air low limit protection
- Filter status and smoke detection input
- IAQ compensation based on IAQ input
- IAQ configurable for digital or analog input
- Humidification for adjustable Low and High Limits
- Automatic heat/cool changeover
- Automatic configuration with the LCI
- LONWORKS interface to building automation systems
- Alarm/Event reporting



Innovex Technologies  
511 Braddock Avenue  
Turtle Creek, PA 15145  
www.innovextechnologies.com

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# Specifications

## Electrical

### Inputs

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

### Return Humidity

- 0-10 Volt

### Mixed Air and Supply Air

- Precon Type III 10K thermistor

### Fan Proof

- Dry Contact
- Normally Closed

### Filter, Mixed Air Low Limit, and Smoke

- Dry Contact
- Normally Open

### Thermostat Network

- 12 Volt nominal, internally limited to 0.04 A

### Outputs

#### C1, C2, Fan, H1, H2 Economizer DO<sup>1</sup>, Floating Point Cool, Floating Point Heat, Floating Point Reheat

- 24 Volts AC
- 1 A rms

#### Economizer AO, Modulated Heat, Modulated Cool

- 0-10 Volt
- 2K Ohm minimum load
- 8 bit resolution

### FTT-10A Network

- Speed: 78KBPS
- Cabling: Maximum node-to-node distance: 1312 feet (400 meters)
- Maximum total distance: 1640 feet (500 meters)

**Table 1: Network Wire Specifications**

Cable Type	Pairs	Details	Connect Air Catalog No.
Level 4 22AWG (0.65mm)	1	Unshielded, Plenum, U.L. Type CMP	W221P-2001
Level 4 22AWG (0.65mm)	1	Unshielded, Non-Plenum, U.L. Type CM	W221P-1002

For detailed specifications, refer to the FTT-10A Free-Topology Transceiver User's Guide published by Echelon Corporation. For information on ordering Connect Air items, contact Connect Air International; 4240 B Street; Auburn, WA 98001 <[www.connect-air.com](http://www.connect-air.com)>.

## Power

### Power Requirements

- 24VAC power (requires an external supply)

### Power Consumption

- With no external loads: 15 VA

## Mechanical

### Housing

- Dimensions: PCA: 5.35" W (135.9 mm) X 4.05" H (102.9 mm) X 1.25" D (31.8 mm), Enclosed: 4.9" (124.5 mm) X 5.4" (137.2 mm) X 1.4" (35.6 mm)
- ABS Polycarbonate

### 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: -40 °F to 185 °F (-40 °C to 85 °C)
- Humidity: 0 to 95 percent, non-condensing

### Agency Listings

- UL916

### Agency Compliances

- FCC Part 15 Class A
- CE