

EC-FCU-L

**DISTECH
CONTROLS™**

Building Open Control Products

EasyControls™ LONMARK® “3.3” Certified Fan Coil Unit Controller

- 6 Universal Inputs
- 5 Triac Outputs (PWM or Digital)
- 2 Tri-mode Analog Outputs (0-10V, PWM or digital 0-12V)



Applications

- Control fan coil applications with up to 3 stages of cooling or heating
- Designed to meet the requirements of
 - Two-pipe coil shared cooling & heating
 - Four-pipe coil cooling & heating
- Fan-coil applications include:
 - Cooling only
 - Heating only
 - Cooling & Heating
- Valve applications can be digital, floating or modulating
- Compatible with a wide range of sensors and actuators

Features

Interoperability

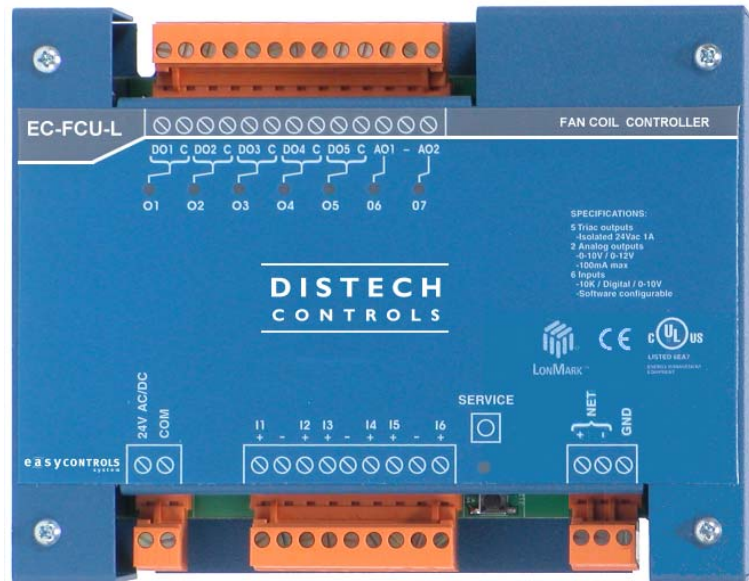
- Based on LONWORKS® technology for peer-to-peer communication between controllers
- LONMARK® certified according to the Interoperability Guidelines Version 3.3
- LONMARK Functional Profile: Fan Coil Controller #8020

Hardware

- 6 universal inputs (software configurable)
- 5 triac outputs (digital or PWM)
- 2 analog tri-mode outputs (0-10 Volts, PWM or digital 0-12 Volts)
- Operate controller as a stand-alone unit or as part of a networked system
- On-board service pin for easy commissioning
- Status indicator on each output
- Analog outputs and power supply are fuse protected

Software

- LNS® plug-in or Niagara Framework™ EC-Net wizard available for configuration and monitoring.
- With an intuitive interface, these provide easy customization of hardware I/O, control sequences and communication schemes
- Easily configure all features, including:
 - Input and output types and properties
 - Heating and cooling stages
 - Control variable speed fans and floating valves
 - PID control loops
 - Economizer settings
 - Co2 limit
- Additional built-in features:
 - Optimum start
 - Load shedding
 - Frost protection
 - Slave operation mode
 - 3 Fan speeds controls
 - Changeable network variable types
- Allows the use of spare I/O points to be linked to other controllers on the network
- Application settings and control sequences stored in a 64K non-volatile Flash memory



The EasyControls™ EC-FCU-L controller is a microprocessor-based fan coil unit controller designed to control any fan coil unit application. The EC-FCU-L controller uses the LonTalk® communication protocol and is LONMARK® certified, using the fan coil functional profile #8020.

The EC-FCU-L can be configured by using either any LNS® based software, such as Distech Controls' LonWatcher, or by using a multi-protocol platform software supporting LONWORKS devices, such as the EC-Net Pro software powered by the Niagara Framework.

Furthermore, an easy-to-use Distech Controls Inc LNS plug-in, or a Niagara Framework EC-Net wizard, are available to configure the features of the EC-FCU-L. These configuration interfaces are designed to simplify complex programming and sequencing methods by prompting the user for the necessary configuration data. The controller then automatically selects the operation sequence according to the input and output configurations, and dynamically adapts itself to the network variables that are bound to the controller.

The EasyControls product line is built to meet rigorous quality standards and carries a two-year warranty. The complete line of EasyControls controllers is designed for use with any LNS based and/or any other open and interoperable system – such as EC-Net. This provides both the contractor and the end user with the flexibility of using “best of breed” products in system design.

Product Specifications

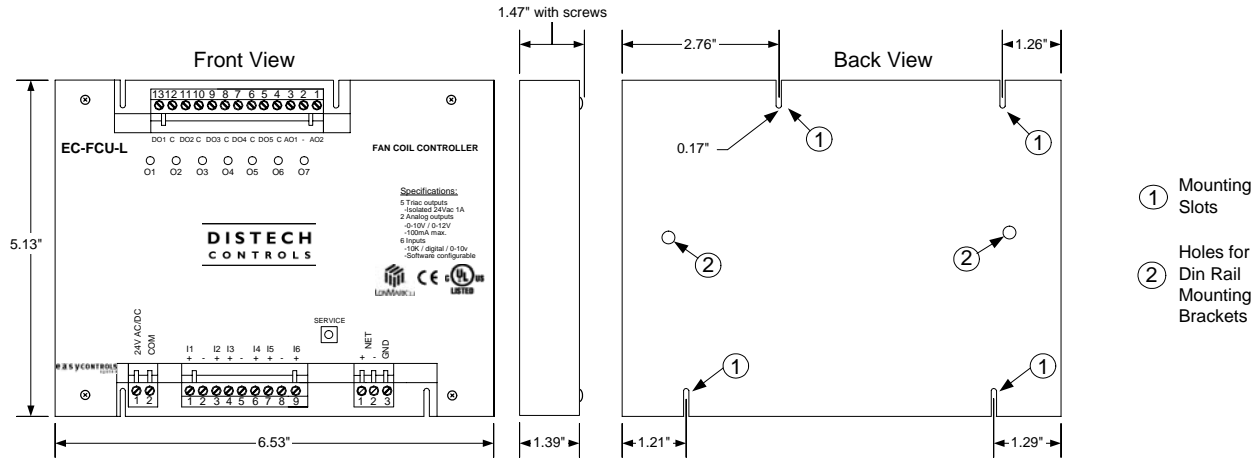


Figure 1: Controller dimensions and mounting options

| Power | | Inputs | |
|-----------------------|---|----------------------|---|
| Voltage | 24VAC*; $\pm 15\%$, 50/60HZ, Class 2 | Quantity | 6 universal software configurable |
| Protection | 1.35 Amp auto-reset fuse | Input Types: | |
| Typical Consumption | 6 VA | -Voltage | 0-10 VDC, Accuracy $\pm 0.5\%$ |
| Maximum Consumption | 15 VA | -Current | 4-20 mA with 500 Ω external resistor (wired in parallel), Accuracy $\pm 0.5\%$ |
| Environmental | | -Digital | Dry contact |
| Operating Temperature | 0°C to 70°C, 32°F to 158°F | | 200 ms minimum ON pulse |
| Storage Temperature | -20°C to 70°C, -4°F to 158°F | | 350ms min OFF (without log) |
| Relative Humidity | 0 to 90% Non-condensing | | 350ms min ON/OFF (with log) |
| General | | -Resistor: | |
| Standard | LONMARK Functional Profile: Fan Coil Controller #8020 | <i>Thermistor</i> | Type 2 and 3; 10K Ω |
| Processor | Neuron [®] 3150 [®] ; 8 bits; 10MHZ | | Accuracy: $\pm 0.5^\circ\text{C}$; $\pm 0.9^\circ\text{F}$ |
| Memory | Non-volatile Flash 64K (APB application & configuration properties) | <i>Potentiometer</i> | Resolution: 0.1°C; 0.18°F |
| Communication | LonTalk [®] Protocol | | Translation table configurable on several points |
| Transceiver | FT-1X | Input Resolution | Min/Max linear configuration |
| Channel | TP/FT-10; 78 Kbps | | 12 bits analog / digital converter |
| Status Indicator | Green LEDs on outputs | Outputs | |
| Enclosure | | Quantity | 7 |
| Material | Metal 18 AWG | 5 Digital | Triac 1.0 Amp @ 24 VAC |
| Color | Blue casing & orange connectors | | External power supply |
| Dimension w/ Screws | 6.53"x5.13"x1.47"(166 x 130x 37.3 mm) | 2 Tri-mode Analog | 0-10 VDC (linear), PWM or digital |
| Shipping Weight | 1.70 lbs (0.77 kg) | | 0-12 VDC |
| | | | 60 mA maximum @ 12 VDC (60°C; 140°F) |
| | | | Maximum load 200 Ω |
| | | | Auto reset fuse: |
| | | | 60mA @ 60°C; 140°F |
| | | | 100mA @ 20°C; 68°F |
| | | Output Resolution | 8 bits digital / analog converter |

Product Specifications

| Agency Approvals | |
|------------------|---|
| CE -Emission | EN55022:1998 class B (conducted & radiated) This device complies with FCC rules part 15 class B |
| -Immunity | EN61000-4-2: 1995, level 3 in air EN61000-4-2: 1995, level 2 by contact EN61000-4-3: 1996, level 2 EN61000-4-4: 1995, level 2 EN61000-4-6: 1996, level 2 ENV 50204 : 1995, level 2 |
| UL Listed | UL916 Energy management equipment |

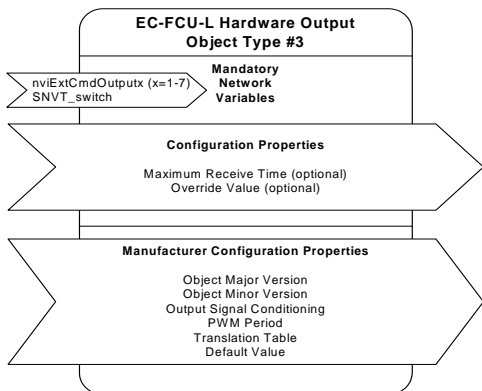
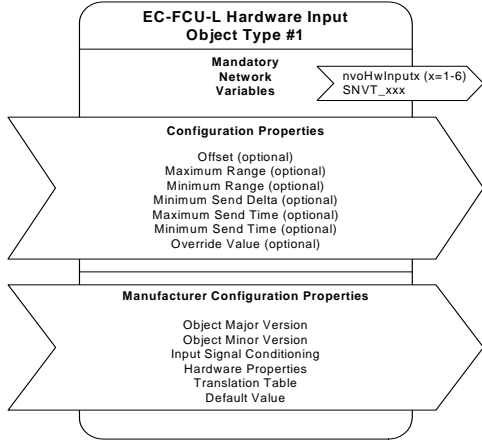
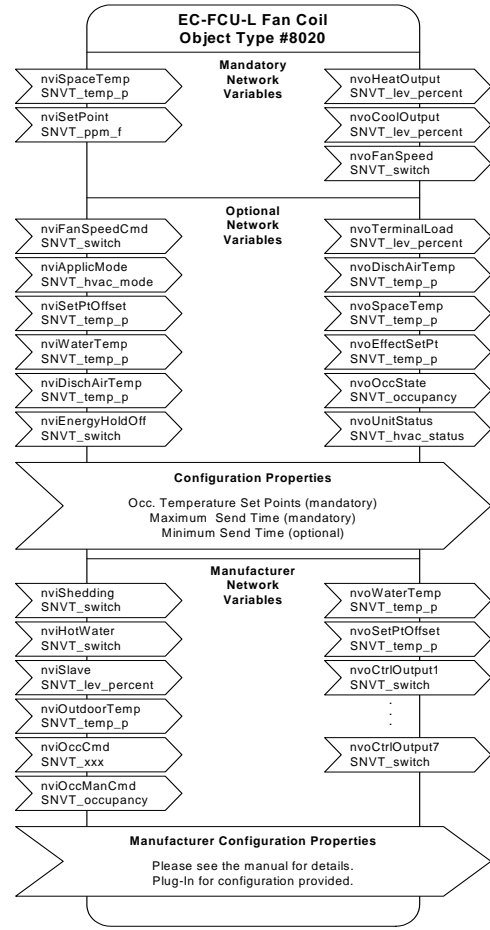
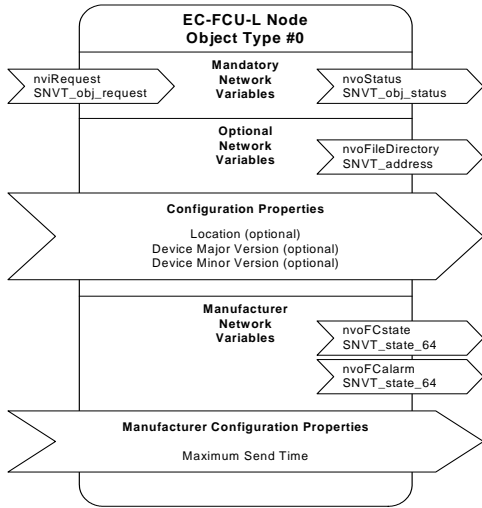
| Mounting Options | |
|-------------------|--|
| Mounting Slots | See <i>figure 1</i> for position of mounting slots |
| Mounting Brackets | Optional din rail mounting brackets installed by Distech Controls when ordered |



| Software Preview | | |
|--|---|--|
| <p>LNS Monitoring Plug-in*s</p> <p>The monitoring plug-in is a graphical user interface that monitors all device parameters including inputs, outputs, alarms and device status. There is no more need to create any graphics pages, and as it can be launched from any GUI that supports plug-in applications. Graphics dynamically adapt themselves to the configuration of the device as well as the real time values being monitored.</p> | <p>LNS Configuration Plug-in*</p> <p>Easily configure all of the devices' parameters including inputs, outputs, fan and valve settings, heating and cooling setpoints, amongst others. You can also enable and configure additional built-in features such as optimum start, load shedding, frost protection and slave operation mode.</p> | <p>EC-Net Wizard for Niagara Framework</p> <p>Designed for use with the Niagara Framework, the EC-Net wizard offers all the same features accessible within the LNS plug-in. Simply add pre-defined shadow objects into your database and immediately launch the wizard with a couple clicks of your mouse!</p> |
| <p>* LNS Plug-ins can be used with any LNS based network management and GUI tools, such as Distech Controls' LonWatcher or LonDisplay.</p> | | |

| Recommended Optional Accessories | |
|---|---|
| Temperature Sensors | |
| <ul style="list-style-type: none"> EC-SENSOR EC-SENSOR-LO EC-SENSOR-SLO-CW EC-SENSOR-SLO-C EC-SENSOR-SLO-F EC-SENSOR-AVG EC-SENSOR-AVG-LO | <ul style="list-style-type: none"> Room sensor Room sensor with LED and Override push button Room sensor with LED, Override push button and setpoint adjustment (cool/warm) Room sensor with LED, Override push button and setpoint adjustment (Degrees C) Room sensor with LED, Override push button and setpoint adjustment (Degrees F) Averaging room sensor, no setpoint (Up to 3 in parallel) Averaging room sensor with LED and Override push button |
| Other Peripherals | |
| <p>In addition to the Distech Controls EasyControls product line, we invite you to take advantage of our array of peripheral product offering. We are confident our peripheral product offering can:</p> <ul style="list-style-type: none"> - Facilitate your ordering process; - Simplify your search for equal or better prices on all items; - Help standardize your purchasing process by providing quality and performance-proven products. <p>Please contact sales@distech-controls.com for a complete list of available products and peripherals.</p> | |

LONMARK® Objects & Network Variables



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