

# EC-FCU-L

## easyCONTROLS™ LONMARK® v3.3 Certified Fan Coil Unit Controller

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



### Applications

- Designed to meet the requirements of any fan coil unit application
- Controls fan coil applications such as:
  - Mechanical stages
  - Modulating valves
  - Floating outputs
- Controls up to 3 stages of cooling or heating
- 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

- Fire retardant plastic enclosure
- Separable base plate allows base with connectors to be shipped to site for installation while engineering is done at the office
- Light weight enclosure saves on shipping cost
- 6 universal inputs (software configurable)
- 5 triac outputs (PWM or digital)
- 2 universal outputs (0-10V, PWM or digital 0-12V)
- Operate controller as a stand-alone unit or as part of a networked system
- Status indicator on each output
- Universal outputs and power supply are fuse-protected
- Transmit, receive and power LED indicators
- Audio jack for quick access to LON® network
- DIN rail mounting integrated into the enclosure

#### Software

- LNS® plug-in or Niagara Framework™ EC-Net or Niagara AX Framework™ EC-Net AX wizards 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
- Additional built-in features:
  - Load shedding
  - Frost protection
  - Slave operation mode
  - 3 fan speed 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



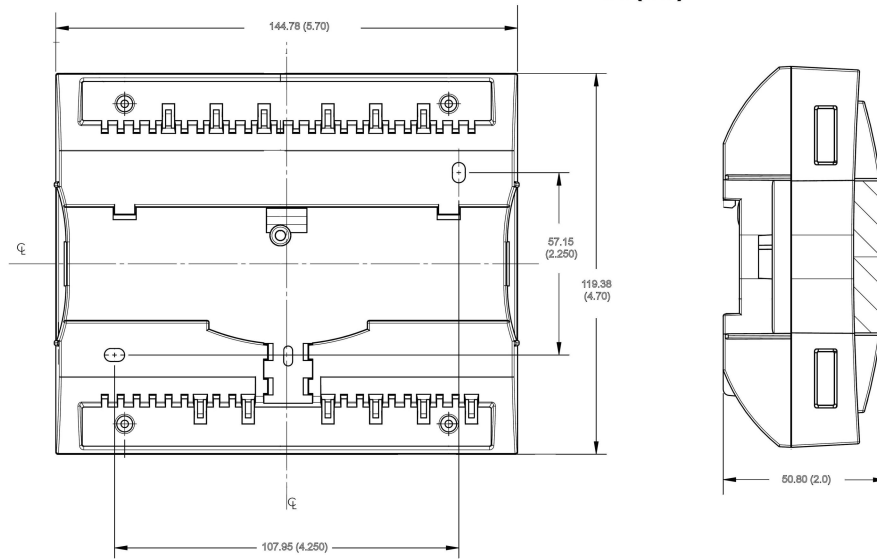
The **easyCONTROLS** EC-FCU-L is a microprocessor-based fan coil unit controller designed to control any fan coil unit application. The EC-FCU-L controller uses the LonTalk® communication protocol and is LONMARK certified, using the fan coil functional profile #8020.

The EC-FCU-L can be configured by using the EC-Configure plug-in through 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 and EC-Net<sup>AX</sup> software powered by the Niagara Framework and Niagara<sup>AX</sup> Framework respectively. These configuration interfaces are designed to simplify configuring 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 LONWORKS-based and/or any other open and interoperable system – such as EC-Net<sup>AX</sup>. This provides both the contractor and the end user with the flexibility of using “best of breed” products in system design.

# Product Specifications

mm (Inch)



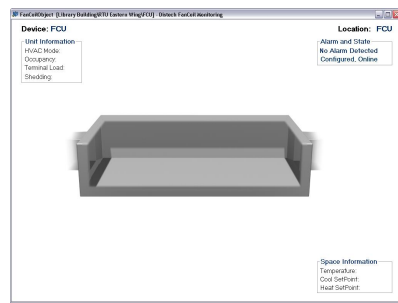
<b>Power</b>		<b>Inputs</b>	
Voltage	24VAC; $\pm 15\%$ , 50/60HZ, Class 2	Quantity	6
Protection	1.35A auto-reset fuse	Input Types:	Universal (software configurable)
Typical Consumption	6VA	-Voltage	0-10VDC, Accuracy $\pm 0.5\%$
Maximum Consumption	15VA	-Current	4-20mA with 249 $\Omega$ external resistor (wired in parallel), Accuracy $\pm 0.5\%$
<b>Environmental</b>		-Digital	Dry contact
Operating Temperature	0°C to 70°C; 32°F to 158°F	-Resistor:	
Storage Temperature	-20°C to 70°C; -4°F to 158°F	<i>Thermistor</i>	Type 2, 3 10K $\Omega$
Relative Humidity	0 to 90% Non-condensing		Accuracy: $\pm 0.5^\circ\text{C}$ ; $\pm 0.9^\circ\text{F}$
<b>General</b>			Range: -40°C to 125°C; -40°F to 257°F
Standard	LONMARK Functional Profile: Fan Coil Controller #8020		Resolution: 0.1°C; 0.18°F
Processor	Neuron <sup>®</sup> 3150 <sup>®</sup> ; 8 bits; 10MHZ	<i>Potentiometer</i>	Translation table configurable on several points, Accuracy $\pm 0.5\%$
Memory	Non-volatile Flash 64K (APB application & configuration properties)	Input Resolution	12-bit analog / digital converter
Communication	LonTalk Protocol	<b>Outputs</b>	
Transceiver	FT-X1	Quantity	7
Channel	TP/FT-10; 78Kbps	5 Digital	- Triac 1.0A @ 24VAC
Status Indicator	Green LED: power status & LON TX Orange LED: service & LON RX	2 Universal	- External power supply
Communication Jack	LON audio jack mono 1/8" (3.5mm)		- 0-10VDC (linear), digital 0-12VDC (on/off) or PWM
<b>Enclosure</b>			- PWM output: adjustable period from 2 seconds to 15 minutes
Material	ABS PA-765A		- 60mA max. @ 12VDC (60°C; 140°F)
Color	Blue casing & grey connectors		- Maximum load 200 $\Omega$
Dimension w/ Screws	5.7x4.7x2.0" (144.8x119.4x50.8mm)	Output Resolution	8-bit digital / analog converter
Shipping Weight	0.77lbs (0.35kg)	<b>Agency Approvals</b>	
Installation	Direct din-rail mounting or wall mounting through mounting holes (see figure above for hole positions)	UL Listed (CDN & US)	UL916 Energy management equipment
<b>Electromagnetic Compatibility</b>		Material <sup>1</sup>	UL94-5VA
CE -Emission	(CDN & US)		
-Immunity	Material <sup>1</sup>		
	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		
FCC	This device complies with FCC rules part 15, subpart B, class B		

- All materials and manufacturing processes comply with the directive on Waste Electrical and Electronic Equipment (WEEE).

# Distech Controls Software Plug-ins and Wizards

## Software Preview

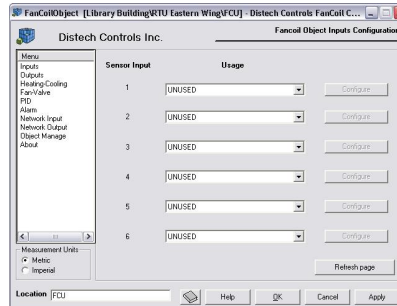
### LNS Monitoring Plug-in\*



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.

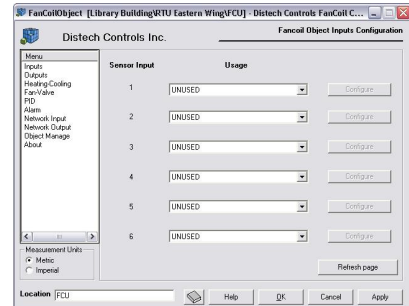
\* LNS Plug-ins can be used with any LNS based network management and GUI tool, such as Distech Controls' Lonwatcher or Lonsdisplay.

### LNS Configuration Plug-in\*



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.

### EC-Net<sup>AX</sup> and EC-Net Wizards



Designed for use with the Niagara<sup>AX</sup> Framework, the EC-Net<sup>AX</sup> Wizards offer all the same features accessible within the LNS plug-in. Simply add the device to your LON network and immediately launch the configuration wizard with a couple clicks of your mouse!

Can also be used with the Niagara Framework. Through EC-Net add pre-defined shadow objects into your database and then launch the wizard.

## Recommended Peripherals

### Recommended Optional Accessories

#### Temperature Sensors



- |                  |  |
|------------------|--|
| EC-SENSOR        | Room sensor  |
| EC-SENSOR-LO     | Room sensor with LED and override push button                                  |
| EC-SENSOR-SLO-CW | Room sensor with LED, override push button and setpoint adjustment (cool/warm) |
| EC-SENSOR-SLO-C  | Room sensor with LED, override push button and setpoint adjustment (°C)        |
| EC-SENSOR-SLO-F  | Room sensor with LED, override push button and setpoint adjustment (°F)        |
| EC-SENSOR-AVG    | Averaging room sensor, no setpoint (Up to 3 in parallel)                       |
| EC-SENSOR-AVG-LO | Averaging room sensor with LED and override push button                        |

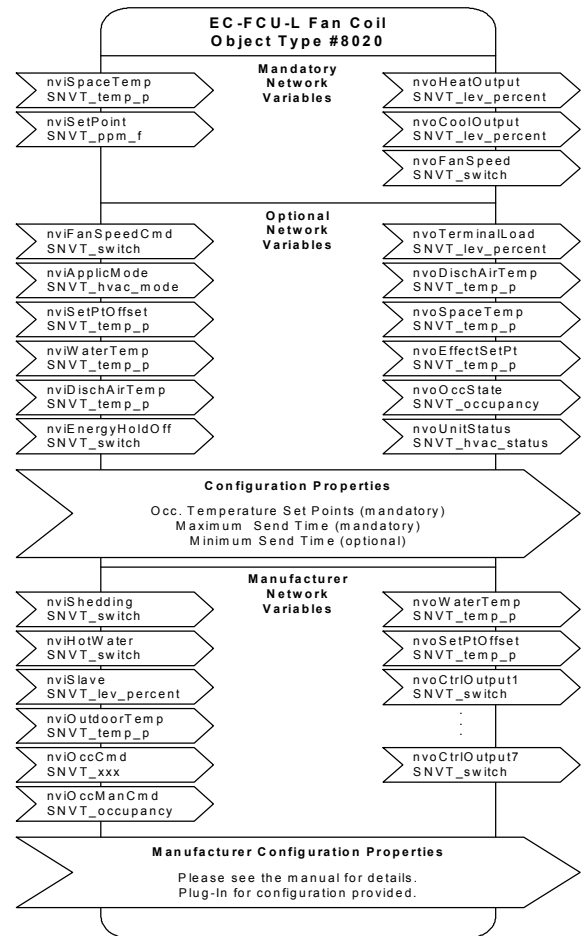
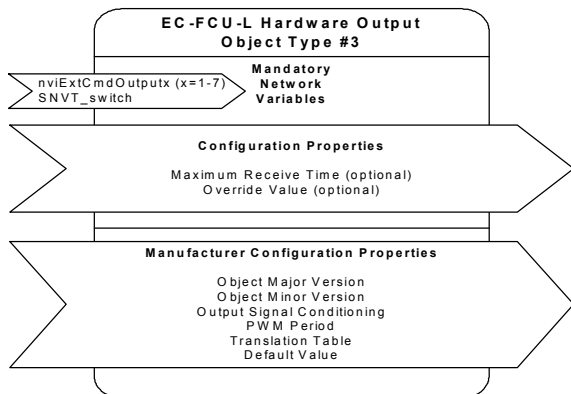
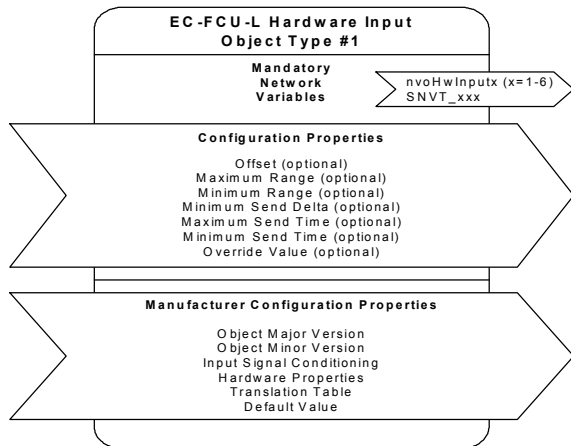
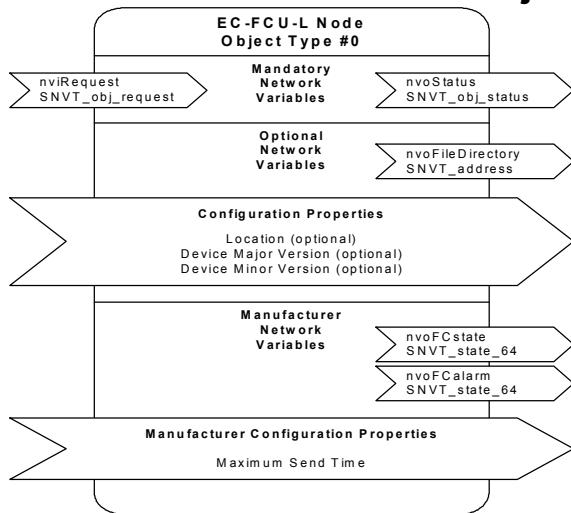
#### Other Peripherals

Please contact [sales@distech-controls.com](mailto:sales@distech-controls.com) for a complete list of available products and peripherals.

# Product Warranty and Total Quality Commitment

The easyCONTROLS product line is built to meet rigorous quality standards and carries a two-year warranty. Distech Controls is an ISO 9001 registered company. Distech Controls' products provide both the contractor and the end user with the flexibility of using "best-of-breed" products in system design.

## LONMARK® Objects & Network Variables



Specifications subject to change without notice. easyCONTROLS, Distech Controls logos are trademarks of Distech Controls Inc.; LONWORKS, LONMARK, LONTALK, LNS and LON are registered trademarks of Echelon Corporation. Niagara Framework and Niagara<sup>AX</sup> Framework are trademarks of Tridium, Inc.



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