

EC-HPU-L

**DISTECH
CONTROLS™**

Building Open Control Products

EasyControls™ LONMARK® “3.3” Certified Heat Pump Unit Controller

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



Applications

- Designed to meet the requirements of any heat pump unit application
- Control heat pump applications such as:
 - Dual mode heat pumps
 - Modulating valves
 - Water to refrigerant heat pumps
- Control up to 4 stages of cooling or heating
- Compatible with a wide range of sensors and actuators

Features

Interoperability

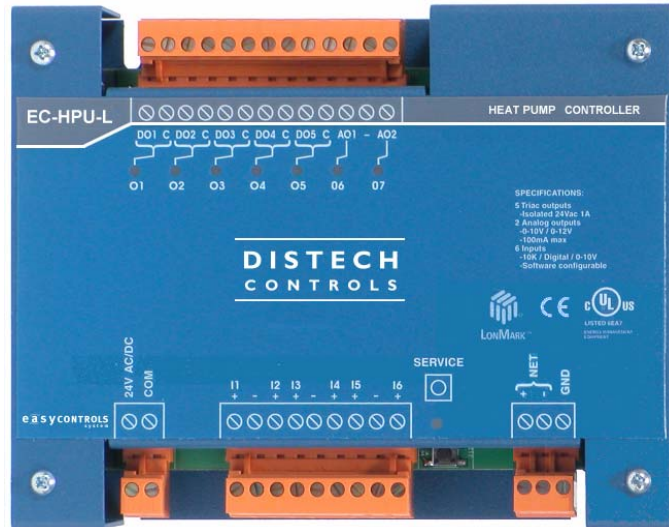
- Based on LONWORKS® technology for peer-to-peer communication between controllers
- LONMARK® certified according to the Interoperability Guidelines Version 3.3
- LONMARK Functional Profile: Heat Pump with Temperature Control #8051

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
 - Dehumidification cycle
 - 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-HPU-L controller is a microprocessor-based heat pump unit controller designed to control almost any heat pump unit application. The EC-HPU-L controller uses the LonTalk® communication protocol and is LONMARK certified using the heat pump unit profile #8051. The EC-HPU-L is designed to work with all types of heat pumps, including dual mode and water-to-refrigerant heat pumps.

The EC-HPU-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 LNS plug-in, or a Niagara Framework EC-Net wizard, are available to configure the features of the EC-HPU-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

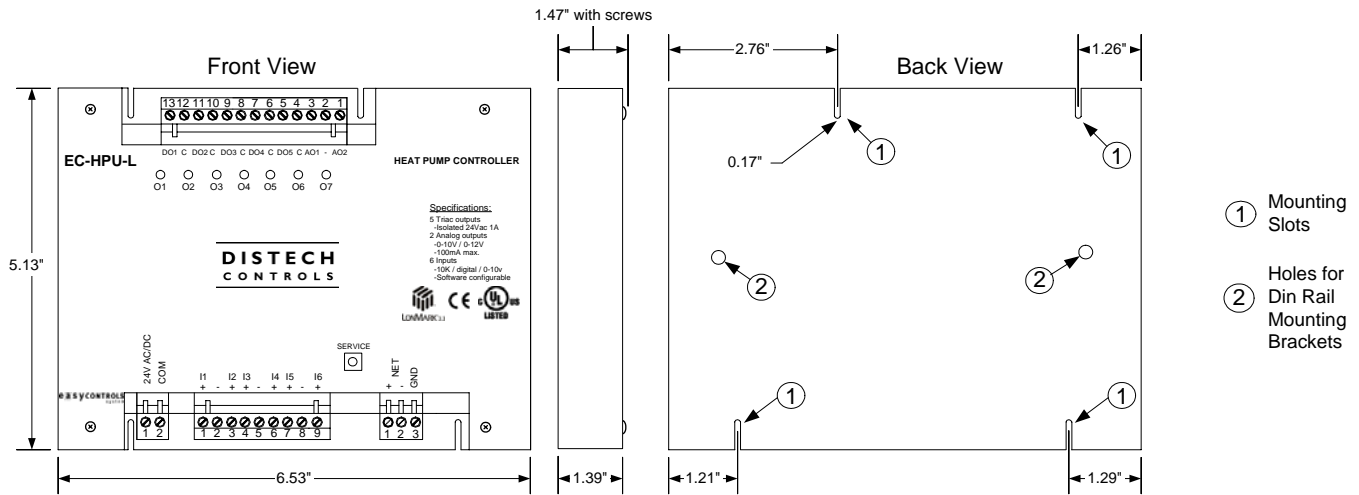


Figure 1: Controller dimensions and mounting options

Power		Inputs	
Voltage	24VAC/DC; $\pm 15\%$, 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: Heat Pump with Temperature Control #8051	<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 Transceiver	LonTalk [®] Protocol		Translation table configurable on several points
Channel	TP/FT-10; 78 Kbps	Input Resolution	Min/Max linear configuration
Status Indicator	Green LEDs on outputs		12 bits analog / digital converter
Enclosure		Outputs	
Material	Metal 18 AWG	Quantity	7
Color	Blue casing & orange connectors	5 Digital	Triac 1.0 Amp @ 24 VAC
Dimension w/ Screws	6.53"x5.13"x1.47"(166 x 130x 37.3 mm)		External power supply
Shipping Weight	1.70 lbs (0.77 kg)	2 Tri-mode Analog	0-10 VDC (linear), PWM or digital
			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

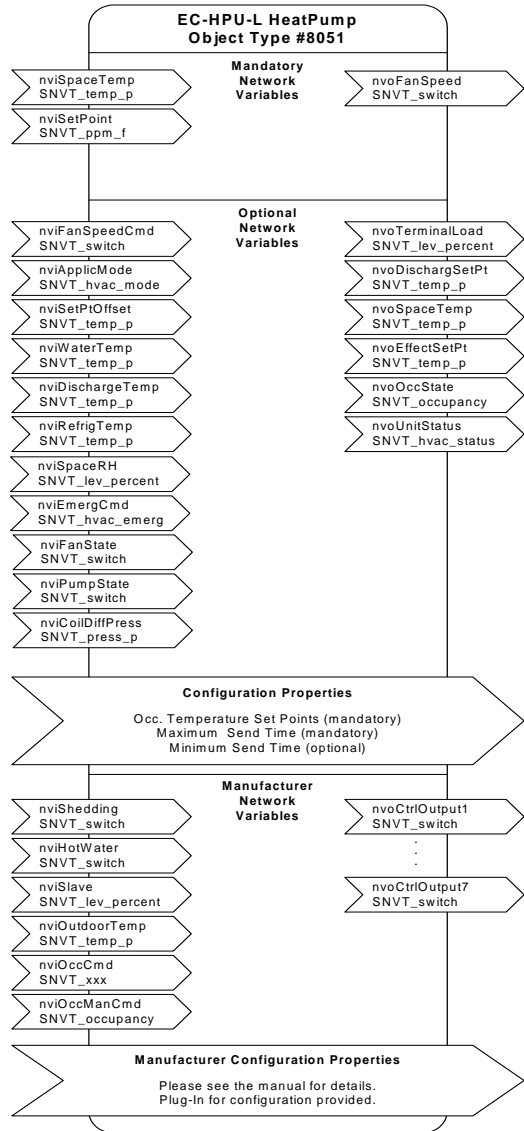
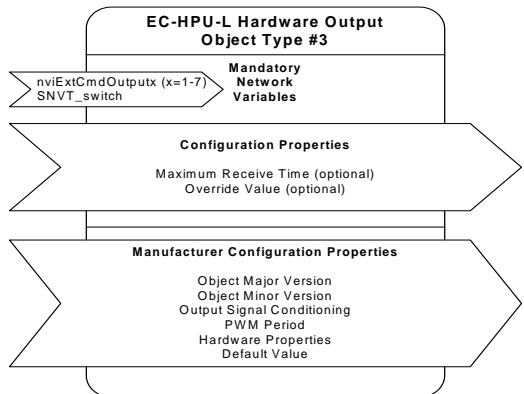
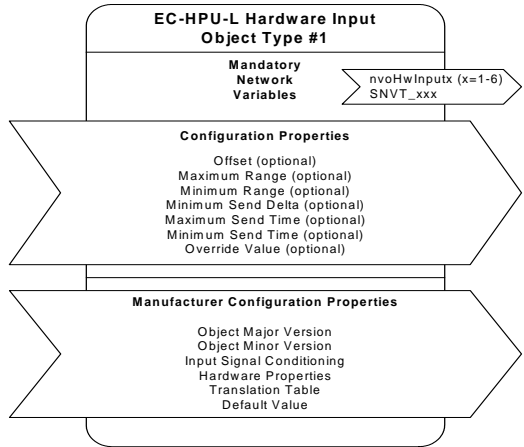
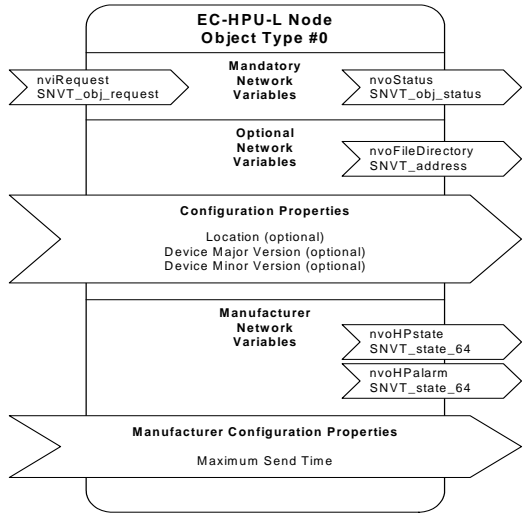
Mounting Options	
Mounting Slots	See <i>figure 1</i> for position of mounting slots
Mounting Brackets	Optional din rail mounting brackets installed by Distech Controls when ordered



Software Preview		
<p>LNS Monitoring Plug-in*</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	
	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 (Degrees C)
	EC-SENSOR-SLO-F Room sensor with LED, Override push button and setpoint adjustment (Degrees 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	
<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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