

# Remote-I/O

## easyCONTROLS™ LONMARK® v3.4 Certified Remote I/O modules

- Universal Inputs
- Triac Outputs (PWM or digital)



### Applications

- Value readings
- Point monitoring
- Extending the capability of an open control system

### Features

#### Interoperability

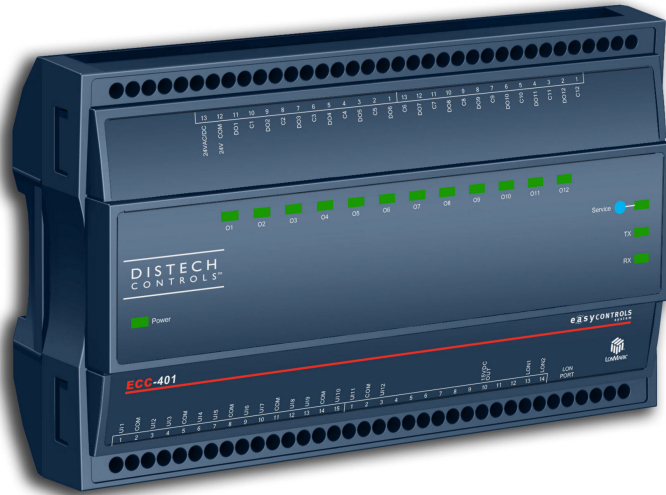
- Based on LONWORKS® technology for peer-to-peer communication between controllers
- LONMARK® certified according to the Interoperability Guidelines Version 3.4

#### 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 costs
- Universal inputs (software configurable)
- Triac outputs (PWM or digital)
- Status indicator on each output
- Power supply is 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 EC-Net<sup>AX</sup> wizards available for configuration and monitoring
- With an intuitive interface, these provide easy customization of hardware inputs and outputs
- Easily configure all features, including:
  - Input and output properties
  - Hardware input SNVT type



\* ECC-401 illustrated

The easyCONTROLS Remote-I/O is designed to extend the capability of an easyCONTROLS system, as well as to monitor and control various HVAC applications. The Remote-I/O uses the LonTalk® communication protocol and are LONMARK certified using the Sensor profile (#1) for its input objects and the Actuator profile (#3) for its output objects.

The Remote-I/O 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<sup>AX</sup> software powered by the Niagara<sup>AX</sup> Framework. These configuration interfaces are designed to simplify the configuration of input and output properties such as input types, input min/max values, output types, network variable types, etc.

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

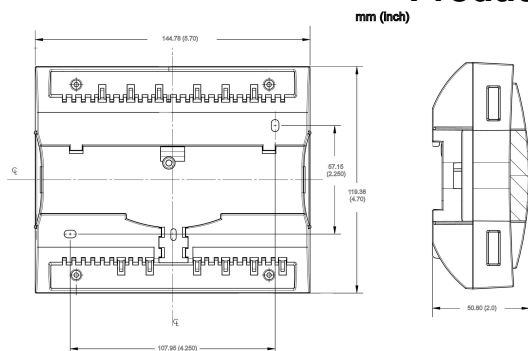


Figure 1: Remote-I/O – ECC-301 dimensions

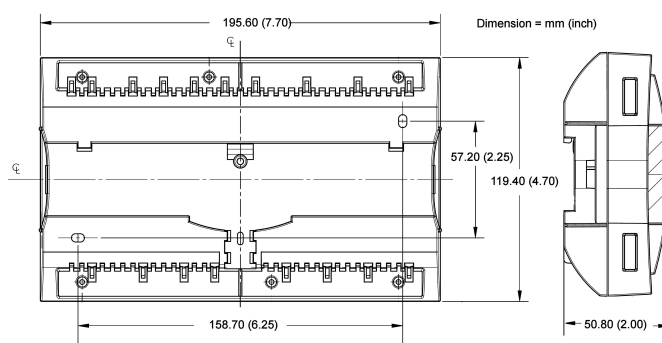


Figure 2: Remote-I/O – ECC-401 & 520 Series dimensions

Power		Inputs	
Voltage	24VAC; $\pm 15\%$ , 50/60HZ, Class 2	Input Types:	Universal (software configurable)
Protection	1.35A auto-reset fuse	-Voltage	0-10VDC, Accuracy $\pm 0.5\%$
Typical Consumption	6VA	-Current	4-20mA with 249 $\Omega$ external resistor (wired in parallel), Accuracy $\pm 0.5\%$
Maximum Consumption	15VA	-Digital	Dry contact
Environmental		-Resistor:	
Operating Temperature	0°C to 70°C; 32°F to 158°F	<i>Thermistor</i>	Type 2,3 10K $\Omega$ Range: -40°C to 150°C; -40°F to 302°F Accuracy: $\pm 0.5^\circ\text{C}$ ; $\pm 0.9^\circ\text{F}$
Storage Temperature	-20°C to 70°C; -4°F to 158°F	<i>Platinum</i>	RTD 1K $\Omega$ Range: -40°C to 150°C; -40°F to 302°F Accuracy: $\pm 1.0^\circ\text{C}$ ; $\pm 1.8^\circ\text{F}$
Relative Humidity	0 to 90% Non-condensing	<i>Potentiometer</i>	PT100 100 $\Omega$ Range: -40°C to 135°C; -40°F to 275°F Accuracy: $\pm 1.0^\circ\text{C}$ ; $\pm 1.8^\circ\text{F}$ Translation table configurable on several points, Accuracy $\pm 0.5\%$
General		Input Resolution	16 bit analog / digital converter
Processor	Neuron <sup>®</sup> 3150 <sup>®</sup> ; 8 bits; 10MHZ	Electromagnetic Compatibility	
Memory	Non-volatile Flash 64K (APB application & configuration properties)	CE -Emission	EN55022 : 1998 class B
Communication	LonTalk Protocol	-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
Transceiver	FT-X1	FCC	ENV 50204 : 1995, level 2
Channel	TP/FT-10; 78Kbps		This device complies with FCC rules part 15, subpart B, class B
Status Indicator	Green LED: power status & LON TX Orange LED: service & LON RX	Agency Approvals	
Communication Jack	LON <sup>®</sup> audio jack mono 1/8" (3.5mm)	UL Listed (CDN & US) Material <sup>1</sup>	UL916 Energy management equipment UL94-5VA
Enclosure			
Material	ABS PA-765A		
Color	Blue casing & grey connectors		
Dimension w/ Screws			
-ECC-301	5.7x4.7x2.0" (144.8x119.4x50.8mm)		
-ECC-401 & ECC-520	7.7x4.7x2.0" (195.6x119.4x50.8mm)		
Shipping Weight			
-ECC-301	0.77lbs (0.35kg)		
-ECC-401 & ECC-520	0.86lbs (0.39kg)		
Installation	Direct din-rail mounting or wall mounting through mounting holes (see figure above for hole positions)		

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

## Output Configuration and Remote-I/O Controller Selection Guide

The Remote-I/O series of controllers is comprised of three different devices, each having its own output configuration, but all having identical input, power, environmental and general specifications.

ECC-301	
Inputs:	8
Outputs:	8 Digital
Triac 1.0A @ 24VAC External power supply PWM output: adjustable period from 2 seconds to 15 minutes	

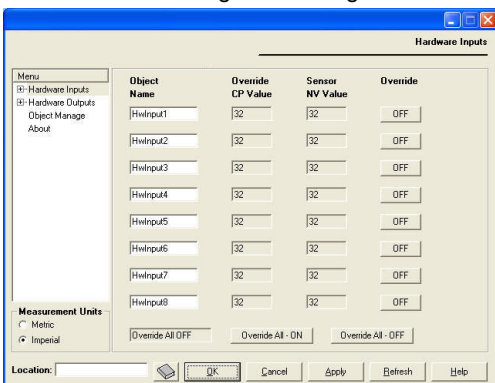
ECC-401	
Inputs:	12
Outputs:	12 Digital
Triac 1.0A @ 24VAC External power supply PWM output: adjustable period from 2 seconds to 15 minutes	

ECC-520	
Inputs:	16
Outputs:	0

## Distech Controls Software Plug-ins and Wizards

### Software Preview

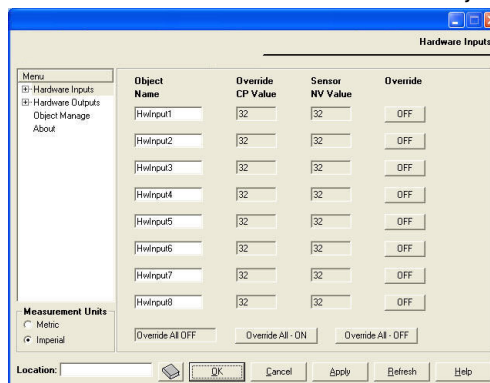
#### LNS Configuration Plug-in\*



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.

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

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



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, where the EC-Net Remote I/O Shadow Object allows you to add a Remote I/O device on your network for control and monitoring purposes.

## 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.

## Recommended Peripherals

### Recommended Optional Accessories

#### Temperature Sensors

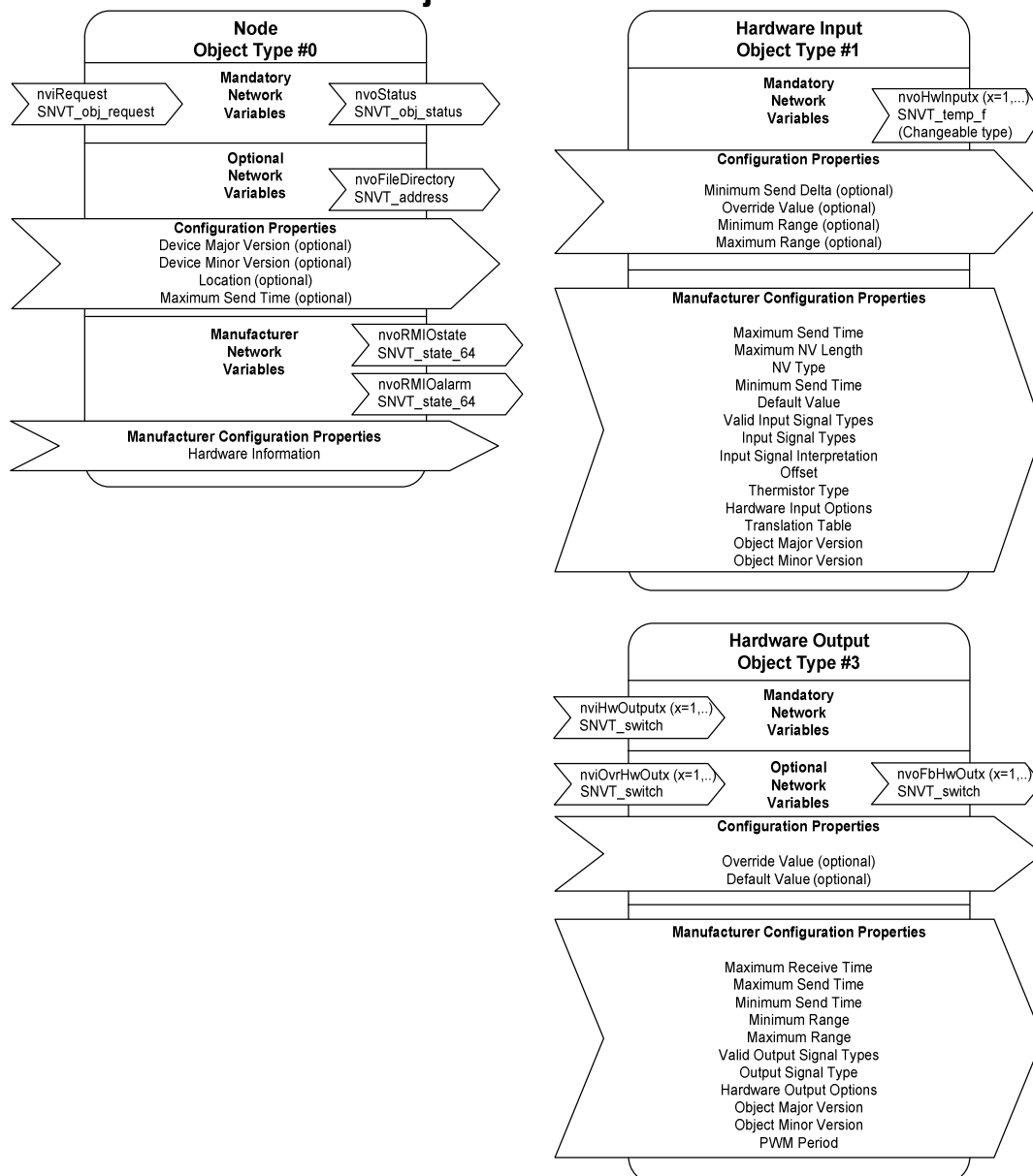


EC-SENSOR	Room sensor
EC-SENSOR-LO	Room sensor with LED and override push button
EC-SENSOR-SLO-CW	Room sensor with LED, override push button and setpoint adjustment (cool/warm)
EC-SENSOR-SLO-C	Room sensor with LED, override push button and setpoint adjustment (°C)
EC-SENSOR-SLO-F	Room sensor with LED, 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.

## LONMARK® Objects & Network Variables



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