

EC-12

**DISTECH
CONTROLS™**

Building Open Control Products

EasyControls™ LONMARK® “3.3” Certified 24 Point Free Programmable Controller

- 12 Universal Inputs
- 12 Outputs (12 tri-mode or 6 digital & 6 tri-mode or 12 digital)



Applications

- Control of equipment such as multistage air handling units, chillers, boilers, lighting systems, refrigeration systems etc.
- Control of many other types of HVAC, lighting equipment, as well as power measurement applications.

Features

Interoperability

- Based on LONWORKS® technology for peer-to-peer communication between controllers
- LONMARK® certified according to the Interoperability Guidelines Version 3.3

Hardware

- 12 universal inputs (jumper selectable)
- 12 outputs (digital or analog, depending on model)
- Status indicator on each output
- Analog outputs and power supply are fuse protected
- 128K Flash memory for the configuration and trending of up to 12 000 events
- Battery back-up for clock with fifteen year lifespan

Software

More than 60 network variables including:

- 18 NVIs, changeable type, changeable length
- 18 NVOs, changeable type, changeable length
- Support of fan-in binding for zoning applications
- Each object is configurable and programmable through their own LNS® plug-in

Free programmable object

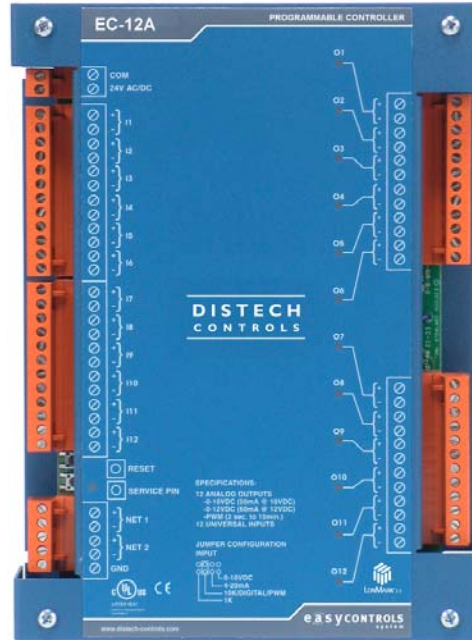
- Configuration, code and label stored in the controller itself, for advanced backup purposes
- Many programming features available such as PID loops, timers, optimum start
- View all internal points (e.g. constants, variables, ...) using 10 UNVT of 15 values each

4 Scheduler objects

- All schedules are stored in Flash memory
- Schedule network variables are of changeable type and length
- Seven weekday templates per scheduler
- Six configurable events per day, per schedule
- Four holiday templates per schedule
- Schedules can be edited locally on device

Real-time clock object

- Allows configuration of daylight saving time
- Accurate timekeeping for controller applications



The EasyControls™ EC-12 controller is a microprocessor based free programmable controller designed to control various HVAC applications. Moreover, it is suitable for any lighting control and power measurement application.

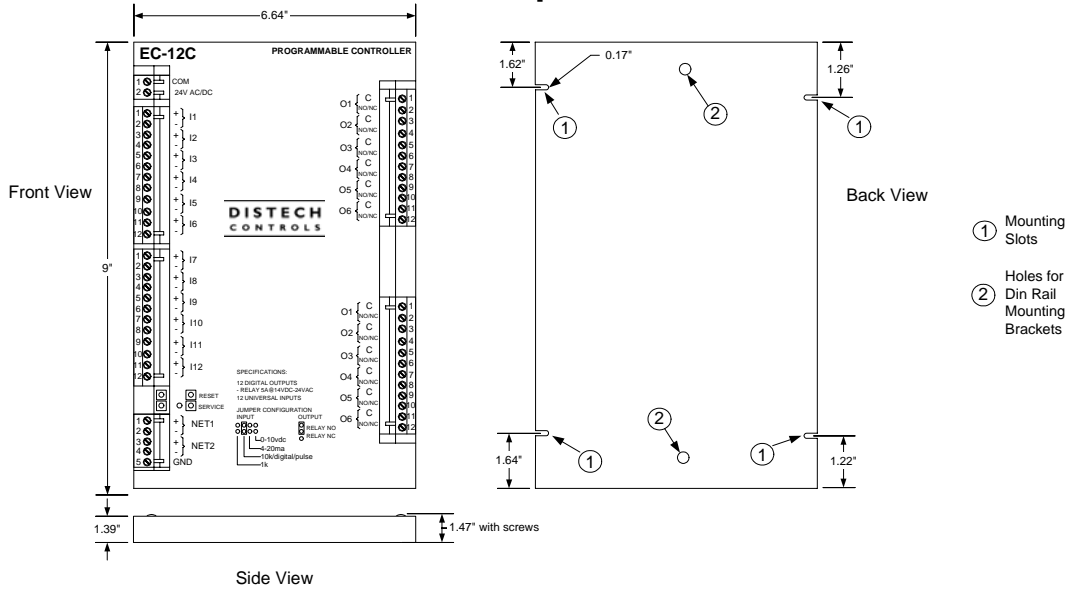
The EC-12 controller uses the LONWORKS communication protocol and can be programmed using the Free Programming plug-in through any LNS based software such as Distech Controls LonWatcher. The EC-12 is LonMark® certified using the Sensor profile (#1) for its input objects and the Actuator profile (#3) for its output objects.


At Distech Controls, we understand the needs of system integrators and installers. This is why we have made ease of use the primary feature of all our products. The Free Programming plug-in is unique in the controls industry because it combines an easy to use graphical interface with the power and flexibility of a code editor and compiler. Distech Controls' Free Programming plug-in uses a unique and simplified version of BASIC that we have developed in-house and that is custom made to suit control requirements. Through the original combination of built-in functions and an easy to use Graphical User Interface (GUI), it offers you the very best in modular control programming. Also available for use with the EC-Net platform, the Distech Controls Shadow Objects and modules allow you to control and monitor the EC-12 free programmable 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.

Distech Controls' quality management system is ISO 9001:2000 certified.

Product Specifications



Power		Inputs	
Voltage	24VAC/DC; $\pm 15\%$, 50/60HZ, Class 2	Quantity	12
Protection	5 Amp removable fuse	Input Types	(jumper selectable)
Environmental		-Voltage	0-10 VDC, Accuracy $\pm 0.5\%$
Operating Temperature	0°C to 70°C, 32°F to 158°F	-Current	4-20 mA
Storage Temperature	-20°C to 70°C, -4°F to 158°F	-Digital	Dry Contact
Relative Humidity	0 to 90% Non-condensing		200ms min ON (without log)
General			350ms min OFF (without log)
Processor	Neuron [®] 3150 [®] ; 8 bits; 10MHZ		350ms min ON/OFF (with log)
Memory	Non-volatile Flash 64K (APB application) Non-volatile Flash 128K (Storage)	-Resistor:	
Communication	LonTalk [®] protocol	<i>Thermistor</i>	Type 2,3 10K Ω @ 25°C, 77°F
Transceiver	TP/FT-10; 78 Kbps		Range -40°C to 150°C, -40°F to 302°F
Clock	Real-time clock chip	<i>Platinum</i>	RTD 1K Ω @ 0°C; 32°F
Battery (for clock only)	CR2032 lithium battery		Range -40°C to 75°C; -40°F to 167°F
Status Indicator	Green LEDs on outputs	<i>Potentiometer</i>	Accuracy: $\pm 1.0^\circ\text{C}$; $\pm 1.8^\circ\text{F}$
Enclosure			Resolution: 0.1°C; 0.18°F
Material	Metal 18 AWG		Translation table configurable on several points, Accuracy $\pm 0.5\%$
Color	Blue casing & orange connectors	Input Resolution	12 bits analog / digital converter
Dimensions w/ Screws	9.00" x 6.64" x 1.47" (229x169x37mm)	Mounting Options	
Shipping Weight	1.85 lbs (1.30 kg)	Mounting Slots	See previous figure for position of mounting slots
Agency Approvals		Mounting Brackets	Optional din rail mounting brackets installed by Distech Controls when ordered
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 (CDN & US)	UL916 Energy management equipment		

Output Configuration and EC-12 Controller Selection Guide

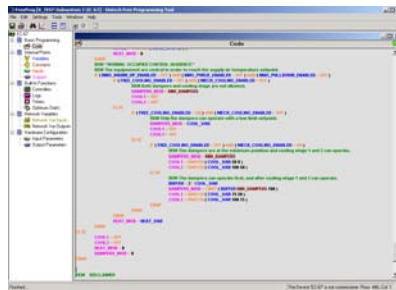
The EC-12 series of controllers is comprised of three different devices, each having its own output configuration, but all having identical input, power, environmental and general specifications.

Selection guide & Output Configurations

EC-12A		EC-12B	
Outputs	Configuration	Outputs	Configuration
Quantity 12 Tri-mode Voltage	12 0-10 VDC (linear), digital 0-12 VDC (off/on) or PWM PWM output: adjustable period from 2 seconds to 15 minutes. 60 mA maximum @ 12 VDC Maximum load 200Ω Auto reset fuse 100mA @ 20°C; 68°F, 60mA @ 60°C; 140°F	Quantity 6 Digital 6 Tri-mode Voltage	12 Relay 5 A @ 14VDC-24VAC (Jumper selectable NO-NC) 0-10 VDC (linear), digital 0-12 VDC (off/on) or PWM PWM output: adjustable period from 2 seconds to 15 minutes. 60 mA maximum @ 12 VDC Maximum load 200Ω Auto reset fuse 100mA @ 20°C; 68°F, 60mA @ 60°C; 140°F
Output Resolution	8 bits digital / analog converter	Output Resolution	8 bits digital / analog converter
Power Consumption		Power Consumption	
Typical	6 VA	Typical	6 VA
Maximum	28 VA	Maximum	22 VA
EC-12C			
Outputs	Configuration	Power Consumption	
Quantity 12 Digital	12 Relay 5 A @ 14VDC-24VAC (Jumper selectable NO-NC)	Typical	6 VA
		Maximum	16 VA

Software Preview

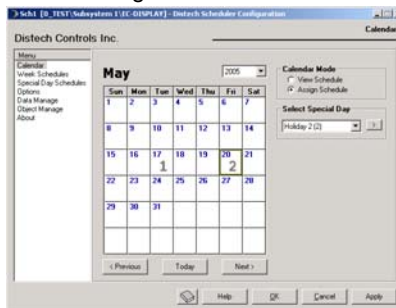
LNS Configuration Plug-in*



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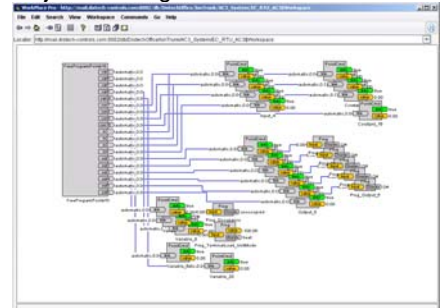
* LNS Plug-ins can be used with any LNS based network management and GUI tools, such as Distech Controls' LonWatcher or LonDisplay.

LNS Scheduler and Real-time Clock Plug-in*



This plug-in allows you to easily configure a weekly-based schedule and a special day schedule for holidays. Easily add and remove the special day event into the calendar by a simple click. Manage real-time clock and daylight saving time for use with any device on the network.

EC-Net Free Programmable Shadow Object for Niagara Framework



Designed for use with the Niagara Framework, the EC-Net free programmable shadow object allows you to add a free programmable device on your network for monitoring and control purposes.

Recommended Peripherals

Recommended Optional Accessories

Temperature Sensors



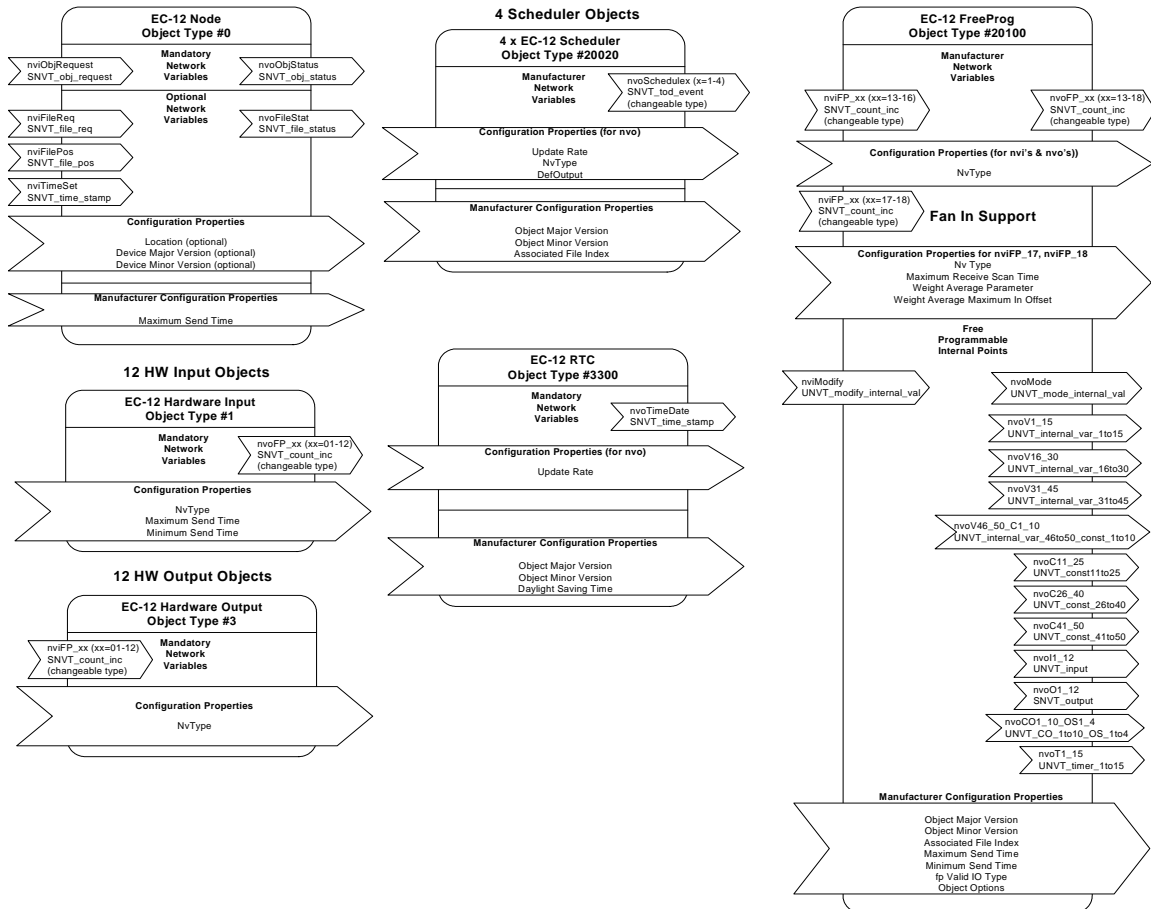
EC-SENSOR	Room sensor
EC-SENSOR-LO	Room sensor with LED and Override push button
EC-SENSOR-SLO-CW	Room sensor with LED, Override push button and setpoint adjustment (cool/warm)
EC-SENSOR-SLO-C	Room sensor with LED, Override push button and setpoint adjustment (Degrees C)
EC-SENSOR-SLO-F	Room sensor with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

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:

- 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.
- Please contact sales@distech-controls.com for a complete list of available products and peripherals.

LONMARK® Objects & Network Variables



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