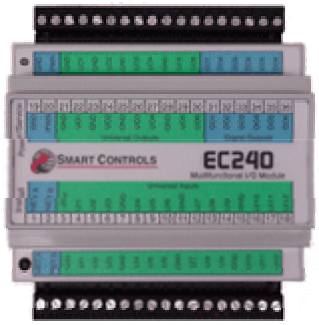


EC240

SMART I/O™

APPLICATIONS

- Air Handling Units
- Fan Coil Units
- Roof Top Units
- Heat Pumps
- VAVs
- Chillers
- Boilers
- Lighting
- Energy Management
- Refrigeration
- Custom Applications

FEATURES

- LonTalk Protocol
- Free Topology Communication (FTT-10)
- 12 universal inputs with 0-5V, 0-10V, 0-20mA, thermistor or dry contact
- 6 universal outputs with Triac or 0-10V
- 6 digital outputs with Triac
- Real Time Clock
- FLASH Memory
- DIN-rail mounting
- Fully programmable
- 2 Year Limited Warranty

DESCRIPTION

The Smart I/O™ EC240 programmable controller incorporates 24 channels of cost effective analog and digital I/O with a real time clock. The I/O is monitored and controlled by a Neuron 3150 chip with Free Topology communication over a LonWorks® network. The EC240 has expanded data storage with additional FLASH, SRAM and EEPROM memory. The EC240 can be utilized in many custom or fixed distributed control applications.

The I/O of the EC240 makes it perfect for a variety of equipment control applications. The wide operating temperature range, -20 to 70 °C, makes the EC240 well suited for many demanding applications.

The twelve universal inputs (UI) can be configured in a variety of ways. The controller can interface with resistive type sensors for temperature measurements. The UI's can measure voltage from humidity or transducer readings. The UI's can input current for pressure measurements. The UI's can also be used to read digital inputs and dry contacts. With 12 bits of resolution, the universal inputs are field adaptable and accurate for many types of measurements.

Terminal number three of the universal inputs provides a regulated +20 VDC to source power to current transducers for interfacing. The +20 VDC source is protected by an internal auto-resetable fuse.

The six universal outputs (UO) can be configured as Triac or 0-10 VDC outputs. The controller can use Triac outputs to provide on/off or pulsed control for controlling damper positions, valves, alarms, lights or other loads where the current does not exceed 1A at 24 VAC for each output. The 0-10 VDC output has 10 bits of resolution for accurate control of external devices.

The six digital outputs (DO) are Triac outputs for control of additional on/off or pulsed external devices where the current does not exceed 1A at 24 VAC for each output.

The EC240 controller is protected from reverse power supply input wiring, over-voltages, transients, and other common events that can damage unprotected inputs and outputs.

The versatile I/O allows numerous applications to be development and implemented with the EC240. The Real Time Clock and expanded memory allow applications for data logging, scheduling and time stamp monitoring and control.

User defined algorithms and functions can be programmed using VisualControl™, NodeBuilder, LonBuilder or other third party LONWORKS programming tools. The application program can be downloaded over the free topology network and is stored in non-volatile memory so it is retained even after loss of power.

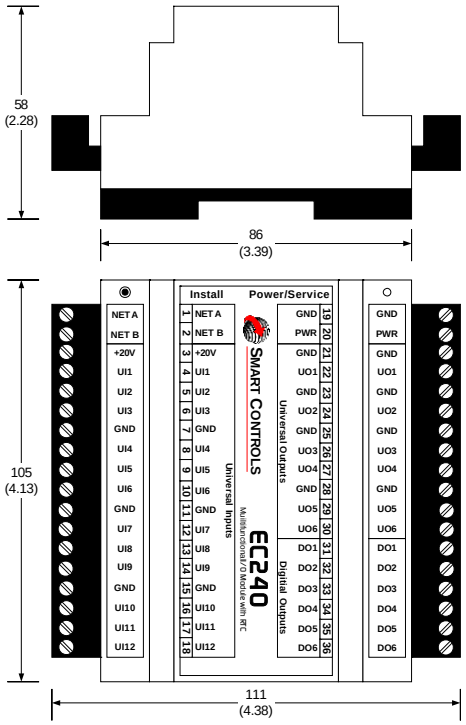
The enclosure snaps right onto a 35mm DIN-rail for quick and easy mounting. Its spring-loaded latching mechanism makes it easy to remove.

SLECTION GUIDE

S-EC240P-F-☐

- B - 56K Flash Memory Only
- **M - STANDARD OPTION: Selectable Memory (FLASH, SRAM)**
- C - Real Time Clock with Super Cap Back-up, Selectable Memory (Flash, SRAM) and 8K Serial EEPROM

DIMENSIONS



CONTACT

SMART CONTROLS

Office:
10000 St. Clair Avenue
Fairview Heights, IL 62208
U.S.A.
Phone: 618-394-0300
Fax: 618-394-1575

E-mail:
sales@smartcontrols.com

Web site:
www.smartcontrols.com

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AGENCY

CE FC

SPECIFICATIONS

General

Communication:	LONTALK™ Protocol
Transceiver:	FTT-10, Free Topology
Processor:	Neuron FT3150 @ 20 MHz
Memory:	64K bytes FLASH 2K bytes SRAM (Neuron) 0.5K bytes EEPROM (Neuron)
Clock:	Real Time Clock (Option C) Back up: Super Cap

Power

Nominal Input Voltage:	24 VAC
Input Voltage Range:	21-28 VAC
Typical Consumption:	6 VA
Maximum Consumption:	10 VA
Output Power Protection:	+20V Output auto-reset fuse

Environmental

Operating Temperature:	-20 °C to +70 °C, -4 °F to 158 °F
Storage Temperature:	-40 °C to +70 °C, -40 °F to 158 °F
Relative Humidity:	5% to 95% (non-condensing)

Warranty

Period:	2 Years (Limited)

Inputs

Number:	12
Universal:	Jumper selectable Voltage; 0-5 Volts, 0-10 Volts Current; 4-20 mA Thermistor; Type 2,3 10Kohms or 20Kohms (25°C, 77°F) Digital; Dry Contact, TTL
Resolution:	12 bits
Accuracy:	±1% FS (25°C, 77°F)
Protection Circuitry:	Transient Over voltage, ESD

Outputs

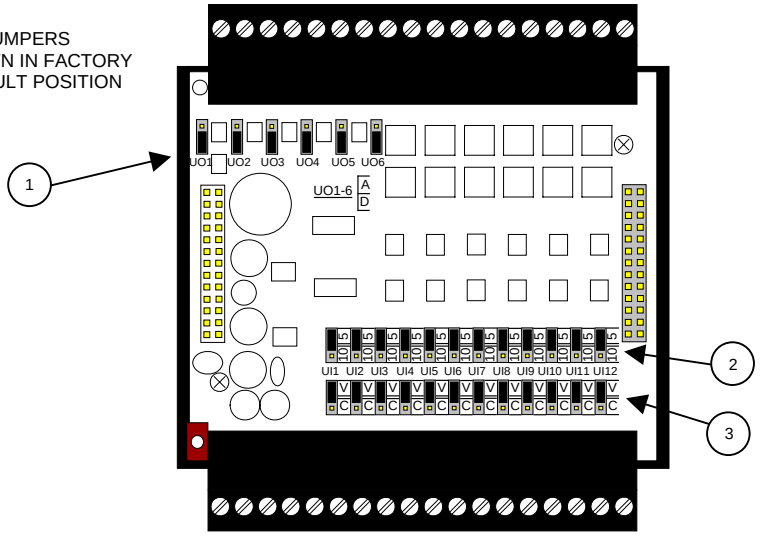
Number:	12
6 - Digital:	Triac 1.0 A @ 24 VAC Internal Source
6 - Universal:	Jumper selectable Digital; Triac 1.0 A @ 24 VAC Internal Source Voltage; 0-10 Volts
Analog Output Resolution:	10 bit
Accuracy:	±1% FS (25°C, 77°F)
Protection Circuitry:	ESD

Enclosure

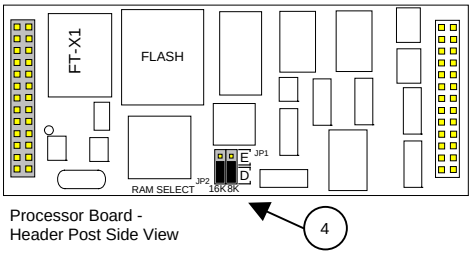
Dimensions:	L 105 x W 86 x H 58 mm (4.13" x 3.39" x 2.28")
Cover:	Lexan 940, UL94-V0 rated
Base:	Noryl VO1550, UL94-V0 rated

OPTION JUMPER SELECTIONS

ALL JUMPERS
SHOWN IN FACTORY
DEFAULT POSITION



I/O Board



Processor Board -
Header Post Side View

1- Output Selection
A – Analog Output (Voltage 0-10V)
D – Digital Output (Triac, 24Vac, 1A)

2- 5V/10V Selection
5V – Input Sensing for 5V Signals
10V – Input Sensing for 10V Signals

3- Input Selection
V – Voltage Input (0-5V,0-10V, Dry Contact, Resistive)
C – Current Input (4-20 mA)

4- RAM Memory Selection*
E – Enable
D – Disable
*Optional – Only available on models with "M" and "C" option.

FLASH	RAM	16K(JP20)	8K(JP19)
56K	0K	D	D
48K	8K	D	E
40K	16K	E	D
32K	24K	E	E

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