

EC231

SMART I/O™

DESCRIPTION

The Smart I/O™ EC231 programmable controller incorporates 23 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 EC231 has expanded data storage with additional FLASH, SRAM and EEPROM memory.

The I/O of the EC231 makes it perfect for a variety of equipment control applications. The wide temperature range, -20 to 70 °C, makes the EC231 will suited for indoor or outdoor use.

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

The even pins of the analog inputs can be configured to provide regulated 20 Vdc to current transducers for simplified interfacing. The 20 Vdc source is protected by an internal auto-resettable fuse.

The analog outputs can be used to control damper positions, valve or other variable position or speed devices. The AO's have 10 bits of resolution.

The seven digital channels can be used for a variety of functions such as alarm inputs/outputs, switch inputs, occupancy sensor inputs, or any other digital I/O functions.

The digital relay outputs can be used to control HVAC outputs, small motors, valves, alarm outputs, lights, or other loads where the current does not exceed 1A at 24 Vac.

The EC231 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 complement of I/O allows numerous applications to be development and implemented with the EC231. 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 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.

APPLICATIONS

- Air Handling Units
- Chillers
- Boilers
- Roof Top Units
- Lighting
- Energy Management
- Refrigeration
- Access Control
- Equipment Control
- Machine Control
- Factory Automation
- Custom Applications

FEATURES

- 5 universal analog inputs for 0-5V, 0-10V, 0-20mA, thermistor & dry contact
- 4 analog outputs for 0-10V and 4-20 mA devices
- 7 digital inputs for dry contact sensing
- 7 digital relay (N.O.) outputs
- Real Time Clock
- FLASH, SRAM and Serial EEPROM Memory
- DIN-rail mounting
- Fully programmable

SELECTION GUIDE

S-EC231P-F-

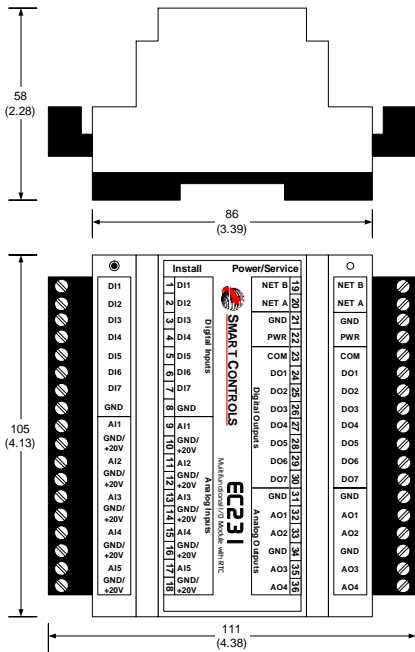
└─ B - 56K Flash Memory Only

M- STANDARD OPTION: Selectable Memory (FLASH, SRAM)

C -Real Time Clock with Super Cap Back-up, Selectable Memory (Flash, SRAM) and 8K Serial EEPROM

SPECIFICATIONS

DIMENSIONS



General
 Communication: LONTALK™ Protocol
 Transceiver: FTT-10, Free
 Topology
 Processor: Neuron 3150 @ 10 MHz
 Memory: 64Kbytes Flash
 32 Kbytes RAM (Neuron)
 8K bytes Serial EEPROM
 2K bytes SRAM (Neuron)
 0.5K bytes EEPROM (Neuron)
 Clock: Real Time Clock
 Back up: Super Cap (Battery Optional)
 Application: Fixed, non-programmable

Digital Inputs
 Number: 7
 Type: Dry Contact
 Protection Circuitry: Transient Over voltage ESD

Analog Inputs
 Number: 5
 Voltage: 0-5 Volts
 0-10 Volts
 Current: 0-20 mA
 Thermistor: Type 2, 3: 10Kohms (25°C, 77°F)
 Platinum: RTD, 1Kohm (optional to order)
 Resolution: 12 bits
 Accuracy: ±1% FS (25°C, 77°F)

Power
 Nominal Input Voltage: 24 VAC/DC Input
 Input Voltage Range: 21-28 VAC or 21-39 VDC
 Maximum Consumption: 4 VA/16 VA Output Power
 Protection: +20V Output auto-reset fuse

Digital Outputs
 Number: 7
 Type: Relay Contact N.O., 1 A @ 24 V

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

Analog Outputs
 Number: 5
 Voltage: 0-10 Volts
 Current: 4-20 mA
 Resolution: 10 bit
 Accuracy: ±1% FS (25°C, 77°F)
 Protection Circuitry: ESD

Warranty
 Period: 2 Years (Limited)

OPTION JUMPER SELECTIONS

CONTACT



SMART CONTROLS

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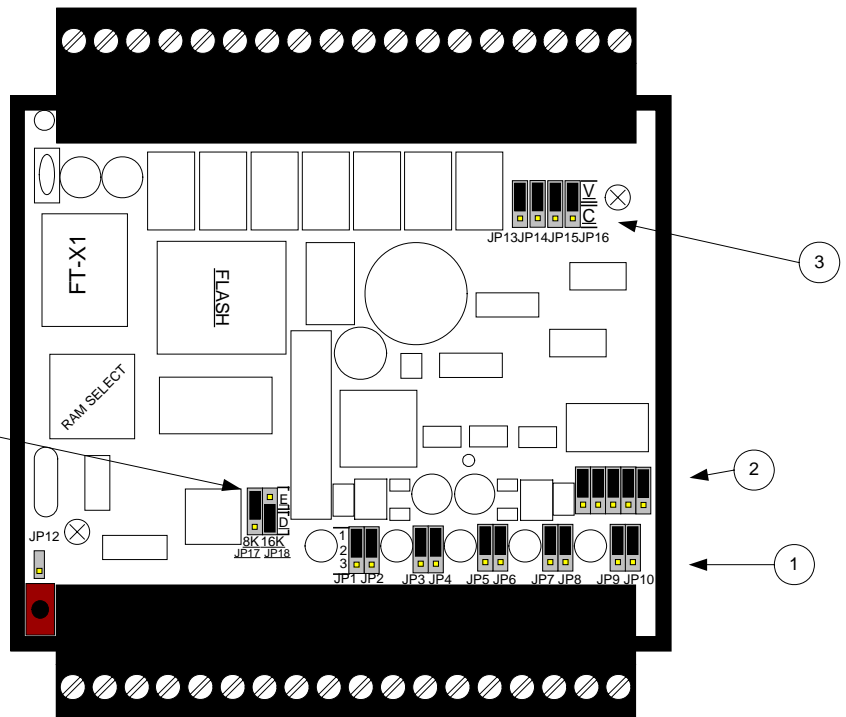
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AGENCY



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|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 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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