



OVERVIEW:

The RIO-032 is a unique “open architecture” rail-mounted input / output device. Ideal for use in all industries, the RIO-032 supports industry standard Modbus ASCII, RTU and TCP protocols. This device is used for local and remote monitoring and control over wide-area Wireless and Ethernet networks. A built-in RS-232 serial connector is available for interface with communication equipment and an optional network adaptor is available for Ethernet.

Featuring 32 I/O points, the RIO-032 is suitable for just about any application. The built-in RS-485 serial connector provides the ability to connect up to thirty-two RIO-032 devices for a total expansion to 1,024 I/O points.

This open architecture device not only ensures interoperability with other devices, it also provides compatibility with hundreds of popular SCADA / DCS software packages, PLCs, process controllers and instrumentation.

KEY FEATURES:

- ◆ 32 I/O Point Count
- ◆ 8 Discrete Inputs
- ◆ 8 Discrete Outputs
- ◆ 8 Analog Inputs (12 Bit Resolution)
- ◆ 8 Analog Outputs (12 Bit Resolution)
- ◆ Use Analog Inputs as Discrete Inputs
- ◆ I/O Expansion up to 1,024 Points
- ◆ Modbus ASCII, RTU, TCP Protocols
- ◆ 1200-38400 Baud Rate
- ◆ RS-232 & RS-485 Serial Connections
- ◆ Non-Isolated 0-24V Single-Ended I/O
- ◆ Standard Din Rail Mounted Device
- ◆ Size: 10"W x 4"H x 2"D
- ◆ 3 Year Parts & Workmanship Warranty

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RIO-032 TECHNICAL SPECIFICATIONS



General Specifications:

<i>Field I/O wiring terminations</i>	Removable terminal block
<i>Wire size</i>	#28 - #16
<i>Dimensions</i>	10" x 4-1/2" x 2"
<i>Power</i>	12 VDC Nominal (10-15 VDC) Less than 6 watts operational, 2 watts standby
<i>Operating temperature</i>	14°-158° F (-10° -60° C)
<i>Humidity</i>	5-85% RH (non condensing)

Analog Inputs:

<i>Quantity of analog inputs</i>	8
<i>Signal input levels, nominal</i>	0-5V; 4-20mA externally with external 249 ohm .02% resistor
<i>Resolution</i>	12-bit
<i>Maximum ratings</i>	0-5V +/- .2V
<i>Input impedance</i>	511 Kohms
<i>Overload / transient protection</i>	None
<i>Conversion rate</i>	10-samples-per-second
<i>Noise rejection (50/60Hz)</i>	-30dB

Analog Outputs:

<i>Quantity of analog outputs</i>	8
<i>Output types</i>	0-5V into a 10K ohm load
<i>Resolution</i>	12-bit
<i>Overall Accuracy</i>	+/- 1% of Full Scale

Digital Inputs:

<i>Quantity of digital inputs</i>	8
<i>Input type</i>	Closure-to-ground for on; biased with 10-15 VDC raw power via onboard 5.6K Ohm resistor
<i>On/Off Threshold</i>	1.5 VDC
<i>Input current</i>	2.5 mA @ 0 VDC
<i>Conversion rate</i>	120-samples-per-second with 100 mSec de-bouncing for on/off status
<i>DI pulse counting rate</i>	Sampled at raw 120-samples-per-second; maximum input pulse rate of 30 Hz

Digital Outputs:

<i>Quantity of digital outputs</i>	8
<i>Output type, configuration</i>	Darlington array sinking to common
<i>Output switch current rating</i>	Current capability to drive 12/24 VDC, 80mA constant duty, 300mA in-rush current ice cube-type relays
<i>Over-voltage/transient protection</i>	None
<i>Overload protection/fault current</i>	None

Communications:

<i>Serial ports</i>	2
<i>Serial port interfaces</i>	
<i>COM #1</i>	RS-232 9 pin D male
<i>COM #2</i>	RS-485 removable terminal block, #28 - #16, 2 wire half duplex
<i>Ethernet (optional)</i>	1200-38400 baud RS-232 communications via optional serial-to-network converter [RAIL Network Adapter (RNA)]
<i>Protocols</i>	Modbus ASCII, Modbus RTU, Modbus TCP (requires optional RNA)
<i>Serial port data rates</i>	1200-38400 baud
<i>Scan & Control Rate</i>	10 Hz (93 Modbus "Status" Registers and 5 Modbus "Control" Registers)

Input/Output (I/O) Processor:

<i>CPU</i>	8051-class microcontroller
<i>Memory</i>	32K of Flash ROM and 1K of RAM