



OVERVIEW

The RIO032 is a unique “open architecture” rail-mounted input / output device. Ideal for use in all industries, the RIO032 supports industry standard Modbus ASCII and RTU protocols; TCP protocol supported through optional network-to-serial converter (RAIL Network Adapter). 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 interfacing with communication equipment and an optional network adaptor is available for Ethernet.

Featuring 32 I/O points, the RIO032 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

- ◆ 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
- ◆ RS-232 & RS-485 Serial Connections
- ◆ Modbus ASCII and RTU Protocols
- ◆ Modbus TCP via RAIL Network Adapter (RNA)
- ◆ 1200-38400 Baud Rate
- ◆ Non-Isolated 0-24V Single-Ended I/O
- ◆ Standard Din Rail Mounted Device
- ◆ Size: 9.63"W x 5.69"H x 2.83"D
- ◆ 3 Year Parts & Workmanship Warranty

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RIO032 TECHNICAL SPECIFICATIONS

General Specifications

Field I/O wiring terminations	Removable terminal block
Wire size	#28 - #16
Dimensions	9.63"W x 5.69"H x 2.83"D
Power	12 VDC Nominal (10-15 VDC); Less than 12 watts
Operating temperature	14°-158° F (-10°-70° C)
Humidity	5-85% RH (noncondensing)

Analog Inputs

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

Analog Outputs

Quantity of analog outputs	8
Output types	0-5V into a 10 Kohm load
Resolution	12-bit

Digital Inputs

Quantity of digital inputs	8
Input type	Closure-to-ground for on; biased with 10-15 VDC raw power via onboard 5.6 Kohm resistor
On/Off threshold	1.5 VDC
Input current	2.5mA
Conversion rate	120-samples-per-second with 100 mSec debouncing for on/off status
DI pulse counting rate	Sampled at raw 120-samples-per-second; maximum input pulse rate of 30 Hz

Digital Outputs

Quantity of digital outputs	8
Output type, configuration	Darlington array sinking to common
Output switch current rating	Current capability to drive 12 or 24VDC, 80mA constant duty, 300mA inrush current, ice cube-type relays
Overvoltage/transient protection	None
Overload protection/fault current	None

Communication

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

Input/Output (I/O) Processor

CPU	8051-class microcontroller
Memory	32K of Flash ROM and 1K of RAM

