

DATASHEET

Rockwell Automation Remote I/O to Modbus Master/Slave Gateway, non-CE 5601/5602-RIO-MCM(4)

The ProLinX Remote I/O Adapter to Modbus Master/Slave Gateway creates a powerful connection between devices on a Remote I/O network and Modbus devices. This stand-alone DIN-rail mounted protocol gateway provides one Remote I/O port and up to four serial ports.

The RIO interface is an adapter (slave) which can be connected to a scanner (master) that controls the data transfer. The module also supports limited high speed data transfer via the Input and Output images.

The Modbus protocol supports both Master and Slave implementations. All Modbus serial ports are individually configurable, providing a choice of Modbus RTU or Modbus ASCII serial protocol support.



General Specifications

ProLinX® Communication Gateways provide connectivity for two or more dissimilar network types. The gateways, encased in sturdy extruded aluminum, are stand-alone, DIN-rail-mounted solutions that provide data transfer between many of today's most widely used industrial automation protocols.

Modbus Serial Port Specifications - PLX

Communication parameters	Baud Rate: 110 to 115K baud Stop Bits: 1 or 2 Data Size: 7 or 8 bits Parity: None, Even, Odd RTS Timing delays: 0 to 65535 milliseconds
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Modbus Modes	RTU mode (binary) with CRC-16 ASCII mode with LRC error checking
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Modbus Function Codes	1: Read Coil Status 2: Read Input Status 3: Read Holding Registers 4: Read Input Registers 5: Force (Write) Single Coil	6: Preset (Write) Single Holding Register 15: Force (Write) Multiple Coils 16: Preset (Write) Multiple Holding Registers
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Functional Specifications - Rockwell Automation Remote I/O

- Rack Number Addressing: 0 to 63
- Rack Size: ¼-rack, ½-rack, ¾-rack and full rack
- Starting Group: 0, 2, 4, 6
- Last Rack: Yes or No
- Baud Rate: 57.6K, 115K, 230K
- Supports block-transfers of data with scanner
- Supports I/O data movement. Amount determined by rack size configuration
- BTR Command - up to 63 words
- BTW Command - up to 64 words

Functional Specifications

Modbus Master

A port configured as a virtual Modbus Master actively issues Modbus commands to other nodes on the Modbus network. The Master ports have an optimized polling characteristic that polls slaves with communication problems less frequently.

Command List	Up to 100 commands per Master port, each fully configurable for function, slave address, register to/from addressing and word/bit count.
Polling of Command List	Configurable polling of command list, including continuous and on change of data, and dynamically user or automatic enabled.
Status Data	Error codes available on an individual command basis. In addition, a slave status list is maintained per active Modbus Master port.

Modbus Slave

A port configured as a Modbus slave permits a remote Master to interact with all data contained in the module. This data can be derived from other Modbus slave devices on the network, through a Master port, or from the module.

Node Address	1 to 247 (software selectable)
Status Data	Error codes, counters and port status available per configured slave port



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Hardware Specifications

Specification	Description
Power Supply	24 Vdc nominal 18 Vdc to 32 Vdc allowed Positive, Negative, GND Terminals 2.5 mm screwdriver blade
Current Load	500 mA maximum @ 32 Vdc maximum
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Relative Humidity	5% to 95% RH with no condensation
Dimensions (Height x Width x Depth)	Standard: 5.20 in x 2.07 in x 4.52 in (13.2 cm x 5.25 cm x 11.48 cm) Extended: 5.20 in x 2.73 in x 4.52 in (13.2 cm x 6.934 cm x 11.48 cm)
LED Indicators (On all gateways)	Power and Hardware Fault Configuration and Application Communication Status Serial Configuration Port Activity and Error
Configuration Serial Port	DB-9M RS-232 only No hardware handshaking
Ethernet Port (Ethernet protocol gateways only)	10 Base-T half-duplex RJ45 Connector Link LED and Activity LED indicators Electrical Isolation 1500 Vrms at 50 Hz to 60 Hz for 60 seconds, applied as specified in section 5.3.2 of IEC 60950: 1991 Ethernet Broadcast Storm Resiliency = less than or equal to 5000 [ARP] frames-per-second and less than or equal to 5 minutes duration
Application Serial Port(s) (Serial protocol gateways only)	RS-232/422/485 RS-232 handshaking configurable RS-422/485 DB-9 to Screw Terminal Adapter Note: The number of serial application ports depends on the gateway type, and the combination of protocols.
Serial Port Isolation	2500 Vrms port signal isolation per UL 1577 3000 Vdc min. isolation port to ground and port to logic
Shipped WITH Each Unit	Mini-DIN to DB-9M serial cables 4-foot RS-232 configuration cable 2.5 mm screwdriver RS-422/485 DB-9 to Screw Terminal Adapter for each serial application port

Agency Approvals and Certifications

ATEX	EN 60079-0:2009, EN 60079-15:2010
cULus	UL 1604, EN 60950
CB Safety	IEC 60950-1:2005-Ed2, EN60950-1:2006, CB243333-2393116



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Ordering Information

To order this product, please use the following:

Rockwell Automation Remote I/O to Modbus Master/Slave Gateway

5601-RIO-MCM

5602-RIO-MCM4

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