

ioLogik R1200 Series

RS-485 remote I/O



- > Dual RS-485 remote I/O with built-in repeater
- > Supports the installation of multi-drop communication parameters
- > Install communication parameters and upgrade firmware via USB
- > Upgrade firmware through an RS-485 connection
- > Wide operating temperature (-40 to 85°C) models available



Introduction

The ioLogik R1200 smart RS-485 serial remote I/O devices are perfect for establishing a cost-effective, dependable, and easy-to-maintain process control remote I/O system. Serial remote I/O products offer process engineers the benefit of simple wiring, as they only require two wires to communicate with the controller and other RS-485 devices while adopting the EIA/TIA RS-485 communication protocol to transmit and receive data at high speed over long distances. In addition to communication configuration by software or USB and dual RS-485 port design, Moxa's smart remote I/O devices eliminate

the nightmare of extensive labor associated with the setup and maintenance of data acquisition and automation systems. Moxa also offers different I/O combinations, which provide greater flexibility and are compatible with every kind of application.

ioLogik R1200 Series Selection Table

Models	I/O Combinations				
	Digital Inputs	Configurable DI/Os	Analog Inputs	Analog Outputs	Relay Inputs
ioLogik R1210	16	–	–	–	–
ioLogik R1212	8	8	–	–	–
ioLogik R1214	6	–	–	–	6
ioLogik R1240	–	–	8	–	–
ioLogik R1241	–	–	–	4	–

ioLogik R1210 Specifications

Inputs and Outputs

Digital Inputs: 16 channels
Isolation: 3K VDC or 2K Vrms

Digital Input

Sensor Type: Wet Contact (NPN or PNP), Dry Contact

I/O Mode: DI or Event Counter

Dry Contact:

- On: short to GND
- Off: open

Wet Contact (DI to GND):

- On: 0 to 3 VDC
- Off: 10 to 30 VDC

Common Type: 8 points per COM

Counter Frequency: 2.5 kHz, power off storage

Digital Filtering Time Interval: Software selectable

Power Requirements

Power Input: 24 VDC nominal, 12 to 48 VDC

ioLogik R1212 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DIOs: 8 channels
Isolation: 3K VDC or 2K Vrms

Digital Input

Sensor Type: Wet Contact (NPN or PNP), Dry Contact
I/O Mode: DI or Event Counter

Dry Contact:

- On: short to GND
- Off: open

Wet Contact (DI to GND):

- On: 0 to 3 VDC
- Off: 10 to 30 VDC

Common Type: 8 points per COM

Counter Frequency: 2.5 kHz, power off storage

Digital Filtering Time Interval: Software selectable

Digital Output

Type: Sink

I/O Mode: DO or Pulse Output

Pulse Output Frequency: 5 kHz

Over-voltage Protection: 45 VDC

Over-current Protection: 2.6 A (4 channels @ 650 mA)

Over-temperature Shutdown: 175°C (typical), 150°C (min.)

Current Rating: 200 mA per channel

Power Requirements

Power Input: 24 VDC nominal, 12 to 48 VDC

ioLogik R1214 Specifications

Inputs and Outputs

Digital Inputs: 6 channels
Relay Outputs: 6 channels
Isolation: 3K VDC or 2K Vrms

Digital Input

Sensor Type: Wet Contact (NPN or PNP), Dry Contact
I/O Mode: DI or Event Counter

Dry Contact:

- On: short to GND
- Off: open

Wet Contact (DI to GND):

- On: 0 to 3 VDC
- Off: 10 to 30 VDC

Common Type: 6 points per COM

Counter Frequency: 2.5 kHz, power off storage

Digital Filtering Time Interval: Software selectable

Relay Output

Type: Form A (N.O.) power relay

Contact Current Rating:

- Resistive Load: 5 A @ 30 VDC, 250 VAC, 110 VAC

Breakdown Voltage: 500 VAC

Relay On/Off Time: 1500 ms (Max.)

Initial Insulation Resistance: 1000 M ohms (min.) @ 500 VDC

Mechanical Endurance: 5,000,000 operations

Electrical Endurance: 100,000 operations @ 5 A resistive load

Contact Resistance: 100 m ohms (max.)

Pulse Output: 0.3 Hz at rated load

Note: Ambient humidity must be non-condensing and remain between 5 and 95%. The relays of the ioLogik R1214 may malfunction when operating in high condensation environments below 0°C.

Power Requirements

Power Input: 24 VDC nominal, 12 to 48 VDC

ioLogik R1240 Specifications

Inputs and Outputs

Analog Inputs: 8 channels
Isolation: 3K VDC or 2K Vrms

Analog Input

Type: Differential input

Resolution: 16 bits

I/O Mode: Voltage / Current

Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA (burn-out mode)

Accuracy:

±0.1% FSR @ 25°C

±0.3% FSR @ -10 and 60°C

±0.5% FSR @ -40 and 75°C

Sampling Rate (all channels):

12 Hz

Input Impedance: 10M ohms (min.)

Built-in Resistor for Current Input: 120 ohms

Power Requirements

Power Input: 24 VDC nominal, 12 to 48 VDC

ioLogik R1241 Specifications

Inputs and Outputs

Analog Outputs: 4 channels
Isolation: 3K VDC or 2K Vrms

Analog Output

Resolution: 12 bits

Output Range: 0 to 10 VDC, 4 to 20 mA

Voltage Output: 10 mA (max.)

Accuracy:

±0.1% FSR @ 25°C

±0.3% FSR @ -40 and 75°C

Load Resistor:

- Internal register: 400 ohms

Note: 24 V of external power required when loading exceeds 1000 ohms.

Power Requirements

Power Input: 24 VDC nominal, 12 to 48 VDC

Common Specifications

Serial Communication

Interface: RS-485-2w: Data+, Data-, GND (5-contact terminal block)

Serial Line Protection: 15 kV ESD for all signals

Serial Communication Parameters

Parity: None, Even, Odd (default = None)

Data Bits: 8

Stop Bits: 1, 2 (default = 1)

Baudrate: 1200 to 921.6 kbps (default = 9600)

High/Low Resistor for RS-485: 1 k Ω , 150 k Ω

Protocols:

Modbus RTU

Physical Characteristics

Wiring: I/O cable max. 16 AWG

Dimensions: 27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)

Environmental Limits

Operating Temperature:

Standard Models: -10 to 75°C (14 to 167°F)

Wide Temp. Models: -40 to 85°C (-40 to 185°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications

Safety: UL 508

EMI:

EN 55022, EN 61000-3-2, EN 61000-3-3, FCC Part 15 Subpart B Class A

EMS:

EN 55024, IEC 61000-4, IEC 61000-6

Shock: IEC 60068-2-27

Freefall: IEC 60068-2-32

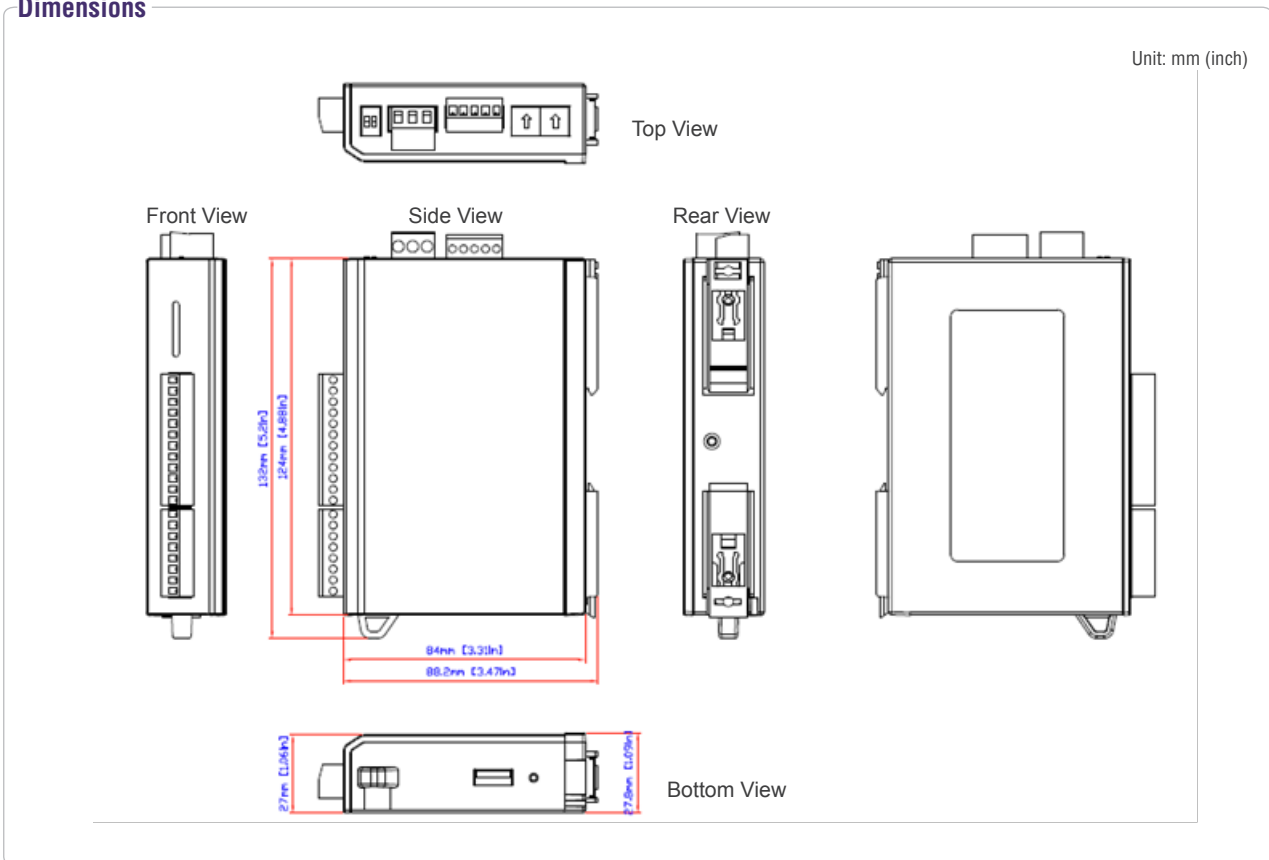
Vibration: IEC 60068-2-6

Warranty

Warranty Period: 5 years (excluding the ioLogik R1240)

Details: See www.moxa.com/warranty

Dimensions



Ordering Information

Available Models

ioLogik R1210: RS-485 remote I/O, 16 DIs, -10 to 75°C operating temperature

ioLogik R1210-T: RS-485 remote I/O, 16 DIs, -40 to 85°C operating temperature

ioLogik R1212: RS-485 remote I/O, 8 DIs, 8 DI/Os, -10 to 75°C operating temperature

ioLogik R1212-T: RS-485 remote I/O, 8 DIs, 8 DI/Os, -40 to 85°C operating temperature

ioLogik R1214: RS-485 remote I/O, 6 DIs, 6 Relays, -10 to 75°C operating temperature

ioLogik R1214-T: RS-485 remote I/O, 6 DIs, 6 Relays, -40 to 85°C operating temperature

ioLogik R1240: RS-485 remote I/O, 8 AIs, -10 to 75°C operating temperature

ioLogik R1240-T: RS-485 remote I/O, 8 AIs, -40 to 85°C operating temperature

ioLogik R1241: RS-485 remote I/O, 4 AOs, -10 to 75°C operating temperature

ioLogik R1241-T: RS-485 remote I/O, 4 AOs, -40 to 85°C operating temperature

Package Checklist

- ioLogik R1200
- Documentation and software CD
- Quick installation guide (printed)