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 Outputs
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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

Power Requirements

Power Consumption: 154 ma @ 24 VDC

ioLogik R1212 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DI/Os: 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

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 Consumption: 187 ma @ 24 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 6 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

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 Consumption: 207 ma @ 24 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 Consumption: 216 ma @ 24 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 Consumption: 343 ma @ 24 VDC

Common Specifications

Serial Communication
Interface: RS-485-2w: Data+, Data-, GND (5-contact terminal block for two serial port)
Serial Line Protection:
ESD Protection: 15 kV
Surge Protection: 1 kV

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 kΩ, 150 kΩ
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, EN 61000-4-2 (ESD) Level 3, EN 61000-4-5 (Surge) Level 2, IEC 61000-4, IEC 61000-6

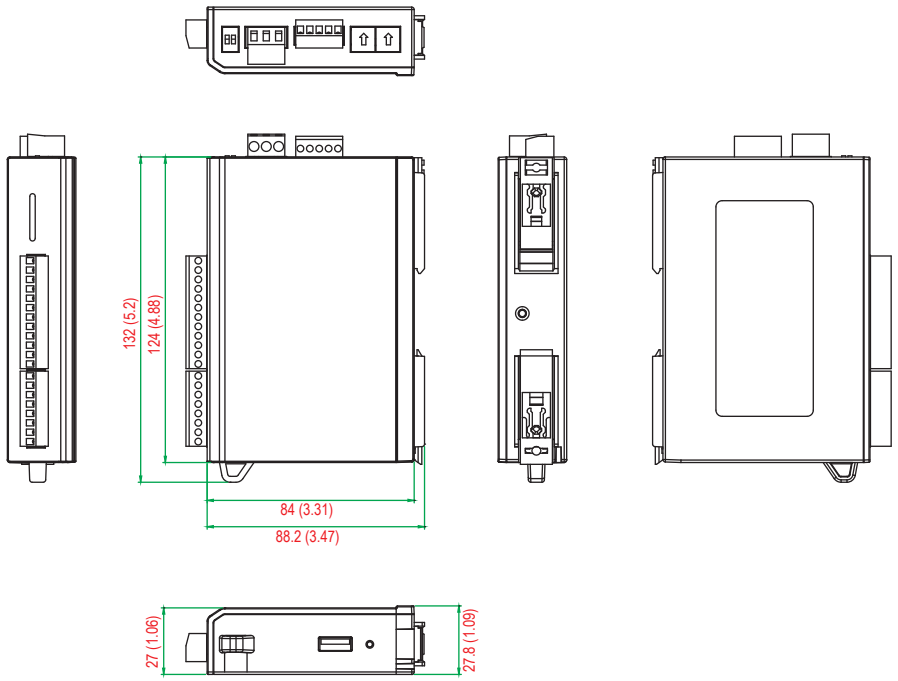
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6

Warranty

Warranty Period: 5 years (excluding the ioLogik R1214)
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



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)

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