ioLogik R1200 Series

RS-485 remote I/O

Features and Benefits

- Dual RS-485 remote I/O with built-in repeater
- Supports the installation of multidrop communications parameters
- Install communications parameters and upgrade firmware via USB
- Upgrade firmware through an RS-485 connection
- Wide operating temperature models available for -40 to 85°C (-40 to 185°F) environments

Certifications

Introduction

The ioLogik R1200 Series RS-485 serial remote I/O devices are perfect for establishing a cost-effective, dependable, and easy-to-maintain remote process control I/O system. Remote serial 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 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 many different applications.

Easy-to-Use Software Interface for Easy Maintenance

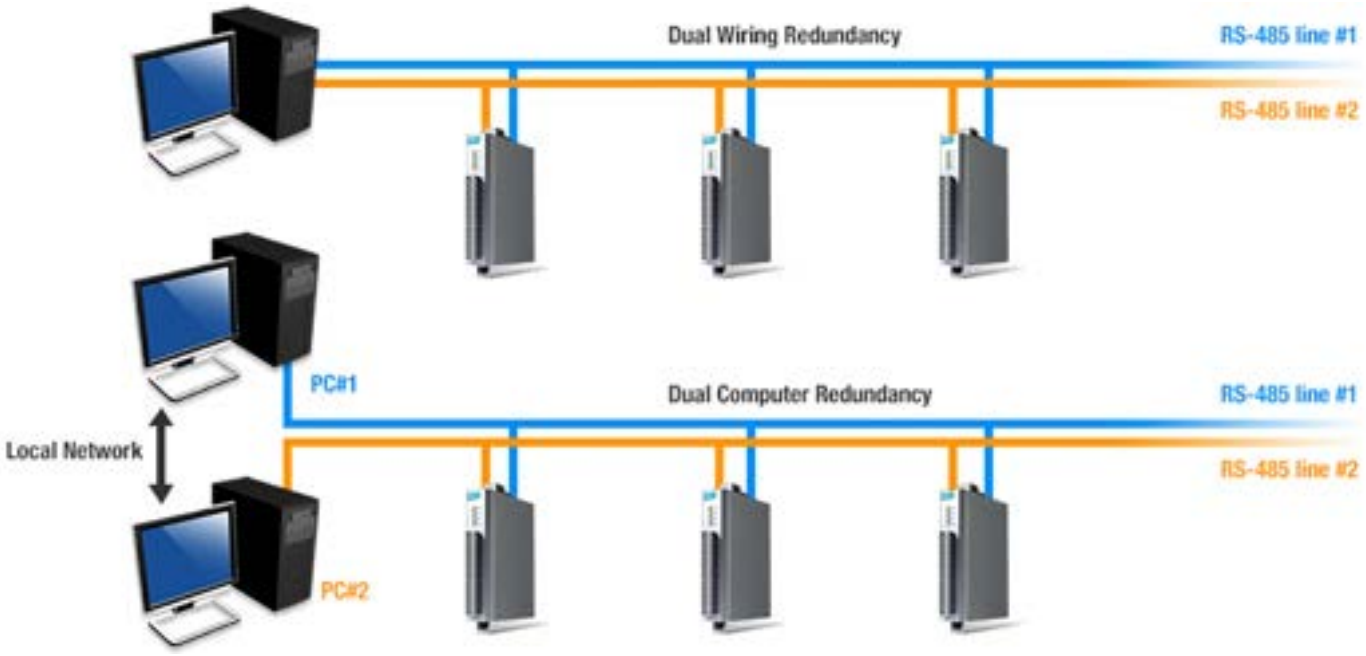
With Moxa's easy-to-use ioSearch software, you can quickly access all of an ioLogik R1200 device's status information and settings with a user-friendly graphical user interface. Furthermore, ioSearch also provides an easy method for updating firmware for all ioLogik R1200 devices over an RS-485 network, so you can even update your firmware remotely. The free and easy-to-use ioSearch software reduces the maintenance time and labor required to set up your communication interface. When more than one ioLogik R1200 are on the same RS-485 network, you no longer need to turn hundreds of dials during setup. Instead, simply configure and duplicate each ioLogik R1200's baudrate and mode through the graphical user interface. This convenient software feature reduces maintenance engineers' effort, and greatly simplifies upgrading your device's configuration compared with more traditional methods.

Innovative Hardware Design Reduces Deployment Effort and Enhances Maintenance Efficiency

With the industry's first RS-485 serial remote I/O with USB design, Moxa provides an innovative solution for upgrading and configuring RS-485 remote I/O communication devices and firmware. All you need to do is upload the configurations to a USB drive, plug it into the field device, and all the configurations and firmware updates will upload to the field device automatically.

Cost-Saving Hardware Design for Backup and Redundancy

Moxa's ioLogik R1200 Series provides dual RS-485 ports so that when one of your RS-485 ports is damaged, you can quickly switch to the other RS-485 port for quick testing or repair. RS-485 remote I/O devices are already considered a low-cost technology, but with dual RS-485 ports, Moxa helps you save a little bit more. With the ioLogik R1200, you can take advantage of our dual RS-485 ports to set up wiring, provide computer redundancy, or back up your network using two computer topologies. For wiring redundancy, when your computer detects that one of the RS-485 connections is not responding, it can quickly switch over to the other RS-485 line to guarantee continuous communication between field sensors and the central computer. Furthermore, users have the freedom to define the settings. For computer redundancy, the ioLogik R1200 provides system operators with a secure backup when one system goes down.



Specifications

Input/Output Interface

Buttons	Reset button
Analog Input Channels	ioLogik R1240 Series: 8
Analog Output Channels	ioLogik R1241 Series: 4
Configurable DIO Channels (by software)	ioLogik R1212 Series: 8
Digital Input Channels	ioLogik R1210 Series: 16 ioLogik R1212 Series: 8 ioLogik R1214 Series: 6
Isolation	3k VDC or 2k Vrms
Relay Channels	ioLogik R1214 Series: 6

Digital Inputs

Connector	Screw-fastened Euroblock terminal
Counter Frequency	2.5 kHz
Digital Filtering Time Interval	Software configurable
Dry Contact	On: short to GND Off: open
I/O Mode	DI or event counter
Points per COM	ioLogik R1210/R1212 Series: 8 channels ioLogik R1214 Series: 6 channels
Sensor Type	Dry contact Wet contact (NPN or PNP)
Wet Contact (DI to COM)	On: 10 to 30 VDC Off: 0 to 3 VDC

Digital Outputs

Connector	Screw-fastened Euroblock terminal
Current Rating	200 mA per channel
I/O Mode	DO or pulse output
I/O Type	Sink
Pulse Output Frequency	5 kHz
Over-Current Protection	0.65 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)
Over-Voltage Protection	45 VDC (typical)

Relays

Breakdown Voltage	500 VAC
Connector	Screw-fastened Euroblock terminal
Contact Current Rating	Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Contact Resistance	100 milli-ohms (max.)
Electrical Endurance	100,000 operations @ 5 A resistive load
Initial Insulation Resistance	1,000 mega-ohms (min.) @ 500 VDC
Mechanical Endurance	5,000,000 operations
Pulse Output Frequency	0.3 Hz at rated load
Type	Form A (N.O.) power relay
Note	Ambient humidity must be non-condensing and remain between 5 and 95%. The relays may malfunction when operating in high condensation environments below 0°C.

Analog Inputs

Accuracy	ioLogik R1240: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik R1240-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ±0.5% FSR @ -40 to 75°C
Built-in Resistor for Current Input	120 ohms
Connector	Screw-fastened Euroblock terminal
I/O Mode	Voltage/Current
I/O Type	Differential
Input Impedance	10 mega-ohms (min.)
Input Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA 4 to 20 mA (with burn-out detection)

Converter Resolution	16 bits
Sampling Rate	All channels: 12 samples/sec Per channel: 1.5 samples/sec Only one channel enabled: 12 samples/sec

Analog Outputs

Accuracy	ioLogik R1241: ±0.1% FSR @ 25°C ±0.3% FSR @ -10 to 60°C ioLogik R1241-T: ±0.1% FSR @ 25°C ±0.3% FSR @ -40 to 75°C
Connector	Screw-fastened Euroblock terminal
Output Range	0 to 10 VDC 0 to 20 mA 4 to 20 mA
Converter Resolution	12-bit
Voltage Output	10 mA (max.)
Load (Current Mode)	Internal power: 400 ohms (max.) 24 V external power: 1000 ohms (max.)

LED Interface

LED Indicators	PWR, RDY, P1, P2

Serial Interface

Baudrate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 112800, 921600 bps
Connector	Terminal block
No. of Ports	2
Parity	None Even Odd
Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Serial Standards	RS-485
Stop Bits	1, 2
Surge	1 kV
ESD	15 kV
Data Bits	8

Serial Signals

RS-485-2w	Data+, Data-, GND

Serial Software Features

Industrial Protocols	Modbus RTU Slave

Power Parameters

Power Connector	Screw-fastened Euroblock terminal
No. of Power Inputs	1

Input Voltage	12 to 48 VDC
Power Consumption	ioLogik R1210 Series: 154 mA @ 24 VDC ioLogik R1212 Series: 187 mA @ 24 VDC ioLogik R1214 Series: 207 mA @ 24 VDC ioLogik R1240 Series: 216 mA @ 24 VDC ioLogik R1241 Series: 343 mA @ 24 VDC

Physical Characteristics

Housing	Plastic
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	200 g (0.44 lb)
Installation	DIN-rail mounting Wall mounting
Wiring	I/O cable, 16 to 26 AWG Power cable, 12 to 24 AWG

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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	2000 m[1]

Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 0.5 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF
Safety	UL 508
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6

Declaration

Green Product	RoHS, CRoHS, WEEE

MTBF

Time	1,239,293 hrs
Standards	Telcordia Standard SR-332

Warranty

Warranty Period	ioLogik R1214: 2 years[2] ioLogik R1210/R1212/R1240/R1241 Series: 5 years
Details	See www.moxa.com/warranty

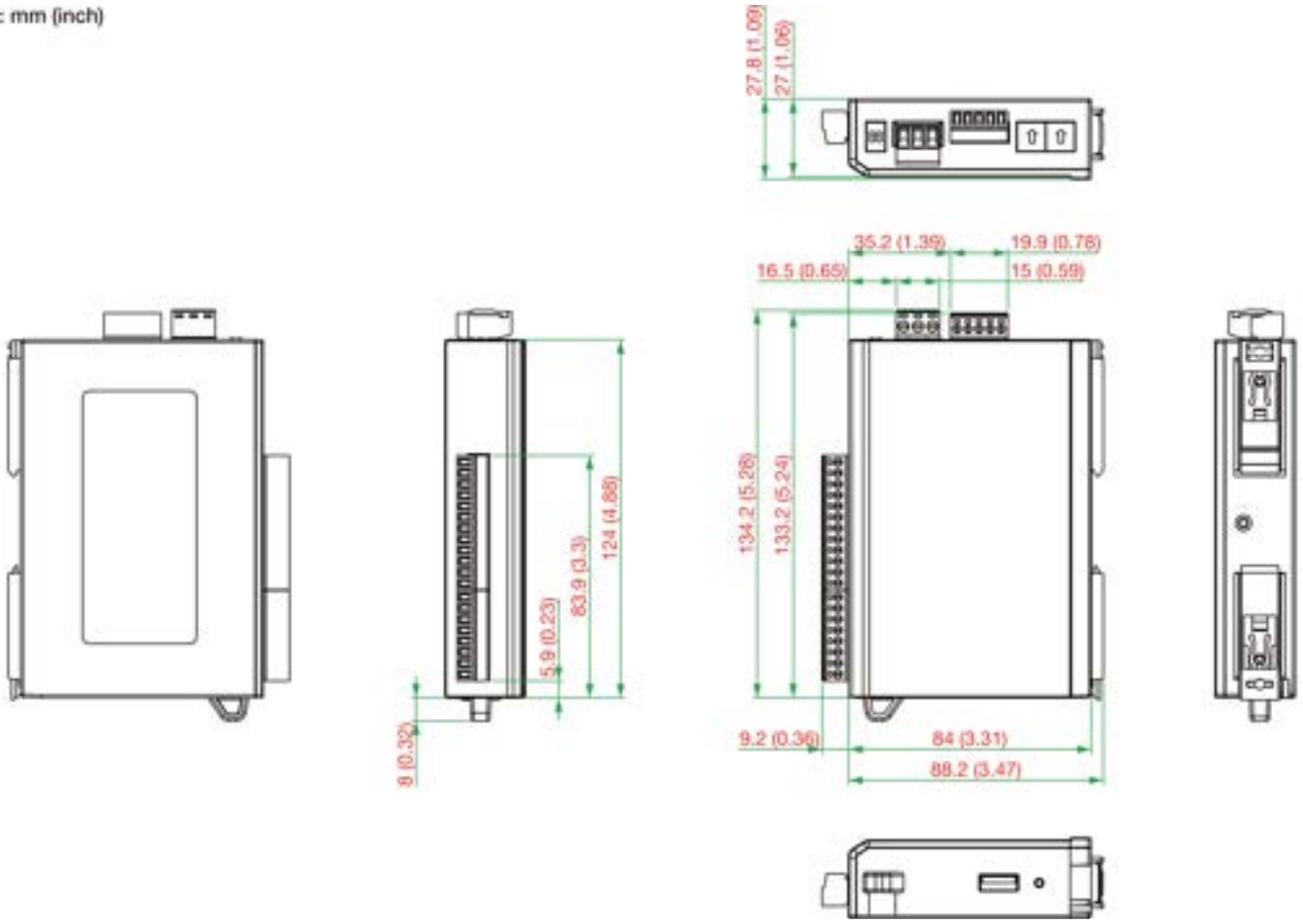
1. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.
2. Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Package Contents

Device	1 x ioLogik R1200 Series remote I/O
Installation Kit	1 x terminal block, 12-pin, 3.81 mm 1 x terminal block, 3-pin, 5.00 mm 1 x terminal block, 8-pin, 3.81 mm
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Input/Output Interface	Operating Temp.
ioLogik R1210	16 x DI	-10 to 75°C
ioLogik R1210-T	16 x DI	-40 to 85°C
ioLogik R1212	8 x DI, 8 x DIO	-10 to 75°C
ioLogik R1212-T	8 x DI, 8 x DIO	-40 to 85°C
ioLogik R1214	6 x DI, 6 x Relay	-10 to 75°C
ioLogik R1214-T	6 x DI, 6 x Relay	-40 to 85°C
ioLogik R1240	8 x AI	-10 to 75°C
ioLogik R1240-T	8 x AI	-40 to 85°C
ioLogik R1241	4 x AO	-10 to 75°C
ioLogik R1241-T	4 x AO	-40 to 85°C

Accessories (sold separately)

Software

MX-AOPC UA Server	OPC UA Server software for converting fieldbus to the OPC UA standard

© Moxa Inc. All rights reserved. Updated Apr 22, 2025.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.