



# ioLogik R1200 Series Quick Installation Guide

Second Edition, April 2015

## Overview

The ioLogik R1200 comes with 2 RS-485 serial ports, which can be used in one of two ways:

1. For backup or asset monitoring, or
2. As an RS-485 repeater.

The ioLogik R1200 has the industry's first all-in-one design and provides Automatic Field Configuration via USB. No technical background is needed, and maintenance is easy since users can upload a device's configuration settings and firmware via USB, without needing to take a PC to the field site.

## Model Selection:

ioLogik	DI	DIO	Relay	AI	AO
R1210	16	-	-	-	-
R1212	8	8	-	-	-
R1214	6	-	6	-	-
R1240	-	-	-	8	-
R1241	-	-	-	-	4

## Package Checklist

- 1 ioLogik R1200 series remote I/O product
- Documentation and software CD
- Quick installation guide (printed)

## Specifications

System	
Serial IO	2 x RS-485-2W: Data+, Data-, GND (5-contact terminal block)
Protection	8 KV ESD, 1 KV surge, 3 KV EFT
Protocols	Modbus/RTU
Power Input	24 VDC nominal, 12 to 48 VDC
Wiring	I/O cable max. 14 AWG
Dimensions	27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight	under 200 g
Operating Temperature	Standard Models: -10 to 75°C (14 to 167°F) Wide Temperature Models: -40 to 85°C (-40 to 185°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)

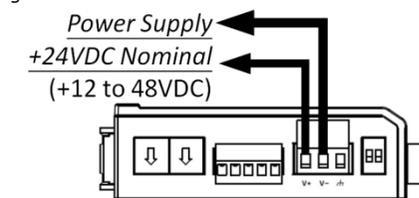
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	Up to 2000 m
<b>Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.</b>	
Standards and Certifications	UL 508, CE, FCC Class A
Warranty Period	5 years (excluding ioLogik R1214*)
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>*Because of the limited lifetime of power relay, products that use this component are covered by a 2-year warranty.</b>	
Communication Parameters (Initial mode)	
Parity	None, Even, Odd (default = None)
Data Bits	8
Stop Bits	1, 2 (default = 1)
Flow Control	None, XON/XOFF (default = None)
Baudrate	1200 to 921.6 kbps (default = 9600)
Digital Input	
Sensor Type	NPN, PNP, and 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
Isolation	3K VDC or 2K Vrms
Counter/Frequency	2.5 kHz, power off storage
Digital Output	
I/O Mode	DO or Pulse Output
Pulse Wave Width/Frequency	0.1 ms / 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
Isolation	3K VDC or 2K Vrms
Relay Output	
Type	Form A (N.O.) relay outputs, 5A
Contact Rating	5 A @ 30 VDC, 5 A @ 250 VAC, 5 A @ 110 VAC
Inductance Load	2 A
Resistance Load	5 A
Breakdown Voltage	500 VAC
Relay On/Off Time	1500 ms (Max.)
Initial Insulation Resistance	1G min. @ 500 VDC

Expected Life	100,000 times (Typical)
Initial Contact Resistance	30 milli-ohms (Max.)
Pulse Output	0.3 Hz at rated load
Analog Input	
Type	Differential input
Resolution	16 bits
I/O Mode	Voltage / Current
Input Range	0 to 10 VDC, 4 to 20 mA
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 samples/sec
Input Impedance	10M ohms (minimum)
Built-in Resistor for Current Input	120 ohms
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 power: 400 ohms • External 24V power: 1000 ohms

## Installation

### Power and Networking

Connect the +12 to +48 VDC power line to the ioLogik R1200's terminal block V+ terminal; connect the ground from the power supply to the V- terminal. Connect the ground pin (⚡) if earth ground is available.

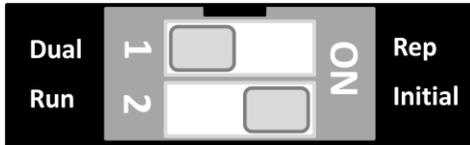


**NOTE** For safety reasons, the wires attached to the power should be at least 2 mm (12 gauge) in diameter.

## Switch Settings

The R1200 series provides Dual/Rep and Run/Initial switch settings to set up the communication mode.

Dual (Default)	Dual RS-485 mode
Rep	Repeater mode
Run	User define communication parameters
Initial (Default)	Initial RS-485 communication parameters



## Jumper Settings

The models with DIO or AI channels require configuring the jumpers inside the enclosure. Remove the screw located on the back panel and open the cover to configure the jumpers.



DIO mode configuration is shown to the right (default: DO Mode).

Analog mode configuration is shown to the right (default: Voltage Mode).

## Mounting

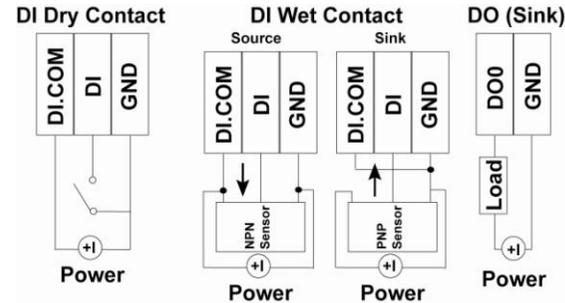
The ioLogik R1200 is designed with a vertical form factor, and can be used with both DIN-Rail and wall mounting applications. When mounting on a rail, release the bottom mounting kit, install the ioLogik on the rail, and then restore the bottom mounting kit to fix the ioLogik to the rail. When using wall mounting, release both the upper and bottom DIN-Rail kits.

## LED Indicators

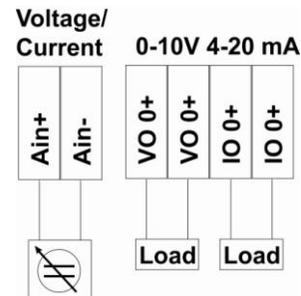
Type	LED Color	LED Action
PWR	Green	On: Power On
		Off: Power Off
RDY	Green/ Red	Green: System Ready
		Green: Located
		Blinking:
		Red: System Boot-up Error
		Red: Firmware upgrade / USB upgrade
		Green/Red Blinking: Safe Mode
		Off: System NOT Ready
P1	Green/ Amber	Green: Tx
		Amber: Rx
		Blinking: Data Transmitting
		Off: Disconnected
P2	Green/ Amber	Green: Tx
		Amber: Rx
		Blinking: Data Transmitting
		Off: Disconnected

## I/O Wiring

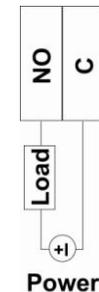
### Digital Input/Output (Sink Type)



### Analog Input



### Relay Output (Form A)



## System Configuration

### ioSearch Utility

ioSearch is a search utility that helps users locate an ioLogik R1200 on the local network. The utility can be found in the Document and Software CD → Software → ioSearch; the latest version can be downloaded from Moxa's website.

### Load Factory Default Settings

There are three ways to restore the ioLogik R1200 to the factory default settings.

1. Hold the RESET button for 5 seconds.
2. Right click the specified ioLogik in the ioSearch utility and select "Reset to Default."
3. Select "Load Factory Default" from the web console.

### Modbus Address Table

Please refer to the user's manual for details of the ioLogik's Modbus address.

**NOTE** A "load" in a circuit schematic is a component or portion of the circuit that consumes electric power. For the diagrams shown in this document, "load" refers to the devices or systems connected to the remote I/O unit.

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