

ioLogik 2500 Series Hardware Installation Guide

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Overview

Moxa's ioLogik 2500 series remote I/O products are designed for general applications. The ioLogik 2500 can be daisy chained with up to 8 other I/O modules (such as the ioLogik E1200) to create a large and distributed I/O array, with the ioLogik 2500 providing wireless communications for the entire chain. For I/O expansion, each ioLogik 2500 series has a designated port to support the daisy-chaining of up to 8 ioLogik E1200 devices, all controlled by Click&Go Plus.

Equipped with Click&Go Plus, the ioLogik 2500 series provides easy-to-use front-end control logic for alarms, peer-to-peer connections, and data logging. Unlike traditional I/O servers, which are passive and must be polled by the SCADA system, when used with Moxa's MX-AOPC UA Server the ioLogik 2500 series uses active messaging to "push" state changes or configured events to the SCADA system, when occur.

Model Information

- I/O combinations**

	DI	DIO	AI
ioLogik 2512	8	8	–
ioLogik 2542	–	12	4

For more I/O combinations, the ioLogik 2500 can be daisy chained with up to 8 other I/O modules.

- Communication interface**

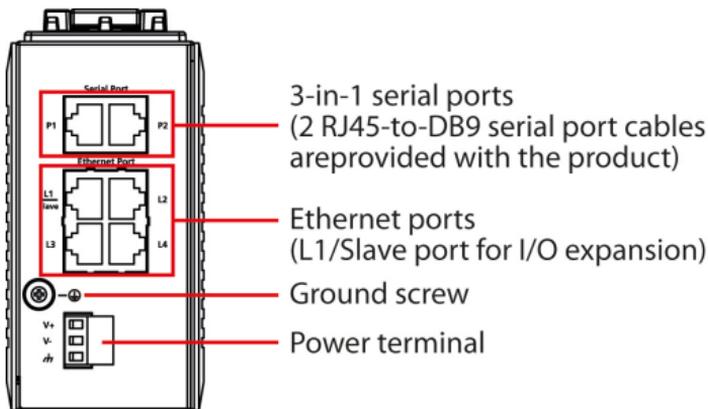
	Communication Interface
ioLogik 2500	Serial / Ethernet
ioLogik 2500-GPRS	Serial / Ethernet / GPRS (2G)
ioLogik 2500-HSPA	Serial / Ethernet / GPRS (2G) / HSPA (3G)
ioLogik 2500-WL1	Serial / Ethernet / Wireless LAN

Package Checklist

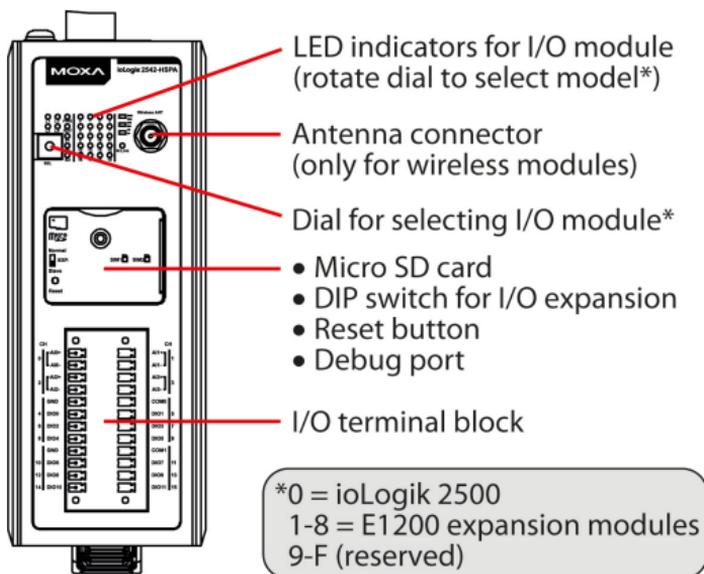
- ioLogik 2500 series device
- 3-pin screw terminal block (for power input)
- 2 12-pin screw terminal blocks (for I/O)
- 2 8-pin RJ45-to-DB9 cables (CBL-RJ45M9-150)
- 1 antenna (only for wireless modules)
- Documentation and software CD
- Hardware installation guide (printed)

Appearance

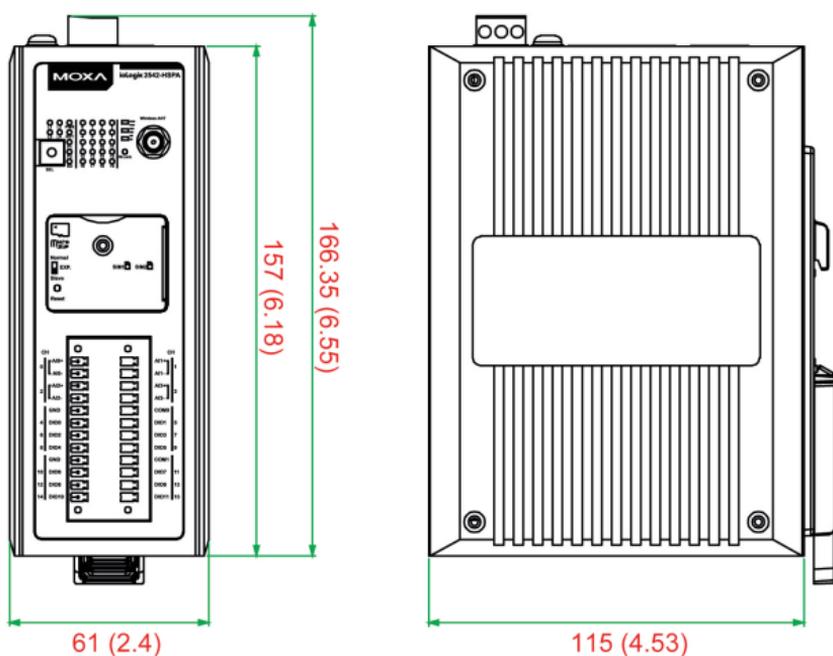
Top View



Front View



Physical Dimensions (unit = mm/inch)



Specifications

LAN	
Ethernet	<ul style="list-style-type: none"> • 4 switched 10/100 Mbps RJ45 ports • 1 optimized port for faster downstream communications with daisy-chained ioLogik E1200 units
Note: The optimized daisy-chain port is not supported on wind industry devices (ioLogik E1261W-T, E1261H-T, or E1263H-T)	
Protection	1.5 kV magnetic isolation
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, Sntp, SMTP
WLAN (ioLogik 25xx-WL1)	
Standards	<ul style="list-style-type: none"> • IEEE 802.11a/b/g for wireless LAN • IEEE 802.11i for wireless security
Spread Spectrum and Modulation (typical)	<ul style="list-style-type: none"> • DSSS with DBPSK, DQPSK, CCK • OFDM with BPSK, QPSK, 16QAM, 64QAM • 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBPSK @ 11 Mbps • 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps
Operating Channels (central frequency)	<ul style="list-style-type: none"> • US: 2.412 to 2.462 GHz (11 channels) 5.18 to 5.24 GHz (4 channels) • EU: 2.412 to 2.472 GHz (13 channels) 5.18 to 5.24 GHz (4 channels)
Security	<ul style="list-style-type: none"> • 64-bit and 128-bit WEP encryption • Full WPA/WPA2 Personal
Transmission Rates	<ul style="list-style-type: none"> • 802.11b: 1, 2, 5.5, 11 Mbps • 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

TX Transmit Power	<ul style="list-style-type: none"> • 802.11b: Typ. 18 ± 1.5 dBm @ 1 to 11 Mbps • 802.11g: Typ. 18 ± 1.5 dBm @ 6 to 24 Mbps, Typ. 17 ± 1.5 dBm @ 36 Mbps, Typ. 16 ± 1.5 dBm @ 48 Mbps, Typ. 16 ± 1.5 dBm @ 54 Mbps • 802.11a: Typ. 18 ± 1.5 dBm @ 6 to 24 Mbps, Typ. 16 ± 1.5 dBm @ 36 Mbps, Typ. 15 ± 1.5 dBm @ 48 Mbps, Typ. 14 ± 1.5 dBm @ 54 Mbps
RX Sensitivity	<ul style="list-style-type: none"> • 802.11b: -97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps • 802.11g: -88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -70 dBm @ 54 Mbps • 802.11a: -88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -70 dBm @ 54 Mbps
Cellular (ioLogik 25xx-GPRS/HSPA)	
Band Options	<ul style="list-style-type: none"> • Five-Band: UMTS/HSPA+(WCDMA/FDD) 800/850/ AWS1700/1900/2100 MHz • Quad-band: GSM/GPRS/EDGE 850/900/1800/1900 MHz
SIM Control Voltage	3.0 V/1.8 V
Power Requirements	
Power Input	24 VDC nominal, 9 to 48 VDC
Physical Characteristics	
Wiring	I/O cable max. 14 AWG
Dimensions	61 x 157 x 115 mm (2.4 x 6.18 x 4.53 in)
Weight	under 1.2 kg
Environment Limits	
Operating Temperature	
Standard Models:	-10 to 60°C (14 to 140°F)
Wide Temp. Models:	Ethernet: -40 to 75°C (-40 to 167°F) Wireless: -30 to 70°C (-22 to 158°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.	
Digital Input	
Sensor Type	Wet Contact (NPN or PNP) and Dry Contact
I/O Mode	DI or Event Counter
Dry Contact	<ul style="list-style-type: none"> • On: short to GND • Off: open
Wet Contact (DI to COM)	<ul style="list-style-type: none"> • On: 10 to 30 VDC • Off: 0 to 3 VDC
Isolation	3k VDC or 2k Vrms
Counter/Frequency	2.5 kHz

Digital Output (Sink)	
I/O Mode	DO or Pulse Output
Pulse Output Frequency	5 kHz
Over-voltage Protection	45 VDC
Over-temperature Shutdown	175°C (min.)
Over-current Protection	1.5 A per channel @ 25°C
Current Rating	500 mA per channel @ 25°C
Isolation	3k VDC or 2k Vrms
Analog Input (ioLogik 2542)	
Type	Differential input
Resolution	16 bits
I/O Mode	Voltage / Current (software selectable)
Input Range	±10 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA (with burn-out detection)
Accuracy	±0.1% FSR @ 25°C ±0.3% FSR @ -10 and 60°C ±0.5% FSR @ -40 and 75°C
Sampling Rate	• All channels: 400 samples/sec • Per channel: 100 samples/sec
Input Impedance	> 1M ohms (min.)
Built-in Resistor for Current Input	120 ohms
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty

Hardware Installation

Mounting

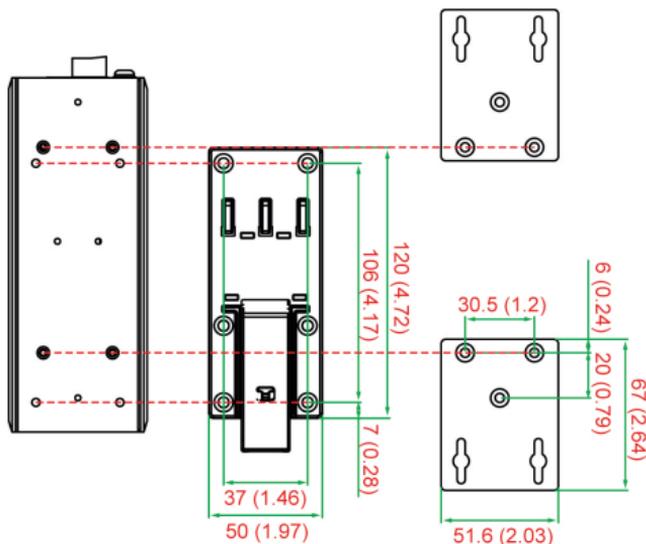
There are two sliders on the back of the unit for DIN rail and wall mounting.

- **Mounting on a DIN rail**

Pull out the bottom slider; latch the unit onto the DIN rail, and then push the slider back in.

- **Mounting on a wall (optional)**

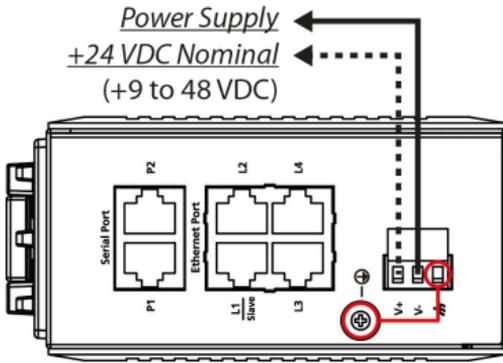
Pull out both the top and bottom sliders and align the screws accordingly.



Connecting the Power

Connect a 9 to 48 VDC power line to the ioLogik 2500's terminal block V+ terminal; connect the ground from the power supply to the V- terminal.

For most applications, it is desirable to ground the system by connecting the system's power supply common wire to the chassis or panel ground. The negative (-V) side of the DC power input terminal as well as all I/O point terminals labeled GND should be connected to chassis ground.



NOTE For safety reasons, wires connecting the power supply should be **at least** 2 mm in diameter (e.g., 12 gauge wires).

Connecting to a Network

The ioLogik 2500 has four built-in RJ45 Ethernet ports for connecting standard direct or crossover Ethernet cables.

LED Indicators

Type	Color	Description
Power (PWR)	Green	System power is ON
	Off	System power is OFF
Ready (RDY)	Green	System ready
	Red	System error
	Off	System is not ready
Ethernet Port (L1/L2/L3/L4)	Green	Ethernet connection enabled in 100 Mbps
	Amber	Ethernet connection enabled in 10 Mbps
	Flashing	Data transmitting
	Off	Disconnected
Serial Port (P1/P2)	Green	Tx
	Amber	Rx
	Flashing	Data transmitting
	Off	Disconnected
SD	Green	SD card inserted
	Flashing	SD card being accessed
I/O Channel Status*	Green	Channel ON
	Off	Channel OFF or No Counter/Pulse Signal
W.Link**	Green	Cellular connection established
	Off	Off
Signal Status**	Off	No signal, or No SIM card
	1 LED	Weak or insufficient (SMS only)
	2 LEDs	Average (good for cellular connections)
	3 LEDs	Excellent signal

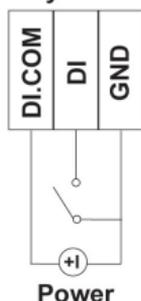
*Use the rotary switch to select which module's I/O channel status is displayed.

**Wireless Modules Only

I/O Wiring

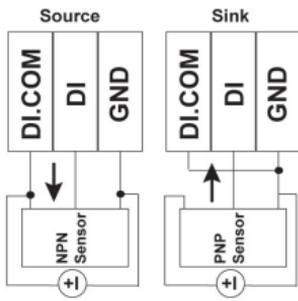
Digital Inputs/Outputs

DI Dry Contact



Power

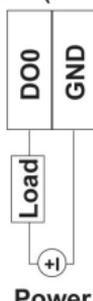
DI Wet Contact



Power

Power

DO (Sink)



Power

Analog Inputs

Voltage/ Current



System Configuration

Configuration via IOxpress Utility

The configuration of the ioLogik 2500 is mainly done with the IOxpress utility. IOxpress is a search utility that helps users locate an ioLogik 2500 device on the local network. The utility can be found in the **Document and Software CD → Software → IOxpress** folder. The latest version can be downloaded from Moxa's website.

- Default IP Address: 192.168.127.253
- Default Subnet Mask: 255.255.255.0

NOTE Be sure to configure the host PC's IP address to the same subnet as the ioLogik 2500. For example, 192.168.127.253

Load Factory Default Settings

There are three ways to restore the ioLogik 2500 to factory default settings.

1. Hold the **RESET** button for 5 seconds.
2. In the **IOxpress** utility, right-click on the ioLogik device to be reset and select **Reset to Default**.
3. Select **Load Factory Default** from the web console.



WARNING

This equipment is intended to be used in Restricted Access Locations. External metal parts are hot! Before touching it, special attention or protection is necessary.