MOXA®

ioLogik E1500 Series
Quick Installation Guide

Second Edition, February 2015

Overview

With a threaded M12 Ethernet port to ensure wired connectivity, a spring-type terminal block for vibration-resistant cabling, and a DIN rail mount assembly, the ioLogik E1500 series is designed to withstand the severe vibrations experienced with rolling stock and wayside applications. Carefully engineered channel-to-channel isolation gives protection against cross-line power surges and crosstalk, ensuring stable data communications. In addition, the ioLogik E1500 is compliant with EN 50121-3-2, EN 50121-4, and essential sections of the EN 50155 standard (covering operating temperature, power input voltage, electrical surges, ESD, and vibration), all of which are required for electronic equipment used on or around railway vehicles.

Model Selection

ioLogik	DI	DO	DIO	Relay	AI	AO	RTD	TC
E1510-T	12	–	–	–	–	–	–	–
E1512-T	4	–	4	–	–	–	–	–

Package Checklist

- 1 ioLogik E1500 series remote I/O product
- Documentation and software CD
- Quick installation guide (printed)

Specifications

System	
Ethernet	10/100 Mbps, M12 connector
Protection	1.5 KV magnetic isolation
Protocols	Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, HTTP
Power Input	24 VDC nominal, 12 to 48 VDC
Wiring	I/O cable, max. 14 AWG
Dimensions	144 x 124 x 30 mm (5.67 x 4.88 x 1.18 in)
Weight	825 g
Operating Temperature	-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

Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications	UL 508, EN 50155, EN 50121-3-2, EN 50121-4
Warranty Period	5 years
Details	See www.moxa.com/warranty
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	• On: 0 to 3 VDC • Off: 10 to 30 VDC
Isolation	3k VDC or 2k Vrms
Counter/Frequency	250 Hz, power off storage
Digital Output	
I/O Mode	DO or Pulse Output
Pulse Wave Width/Frequency	1 ms/500 Hz
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

Installation

Power and Networking

Connect the +12 to +48 VDC power line to the ioLogik E1500's terminal block V+ terminal, and connect the ground from the power supply to the V- terminal. If an earth ground is available, connect the ground pin (⏚).

Mounting and Cabling

The ioLogik E1500 can be used with both DIN rail and wall mounts. When mounting on a DIN 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.

The ioLogik E1500 has an M12 Ethernet port for connecting either a standard direct-Ethernet or crossover-Ethernet cable via a locking M12 connector.
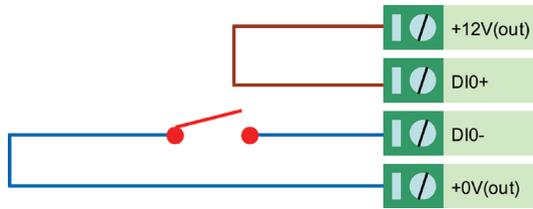
LED Indicators

Type	Color	Description
PWR	Green	System power in ON
	Off	System power is OFF
RDY	Green	System is ready
	Green Blinking	Located
	Red	System Booting-up Error
	Green/Red Blinking	Safe Mode
	Red Blinking	Firmware upgrade (LED flashes for 3 seconds then stays red until restart)
	Off	System is not ready
LAN	Green	100 Mbps
	Amber	10 Mbps
	Blinking	Data Transmitting
	Off	Ethernet Off
EXP	Green	Expansion Mode Ready
	Red	Configuration Failure
	Off	Stand-alone Mode
DI	Green	Channel ON
	Off	Channel OFF
DIO	Green	Channel ON
	Off	Channel OFF

I/O Wiring

DI dry contact mode

+12V(out)
DI0+
DI0-
+0V(out)

DI wet contact mode (Ch-Ch isolation)

12-24V
12 to 24 V
PNP Output
0V
DI0+
DI0-

12-24V
12 to 24 V
NPN Output
0V
DI0+
DI0-
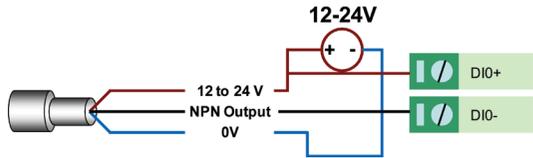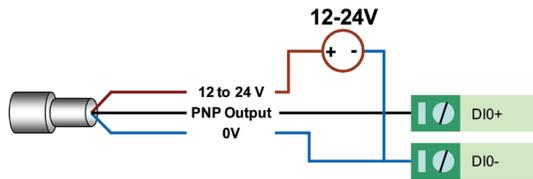
DI wet contact PNP/NPN mode (No CH-CH isolation)

12 to 24 V
PNP Output
0V
+12V(out)
DI0+
DI0-
+0V(out)

12 to 24 V
NPN Output
0V
+12V(out)
DI0+
DI0-
+0V(out)
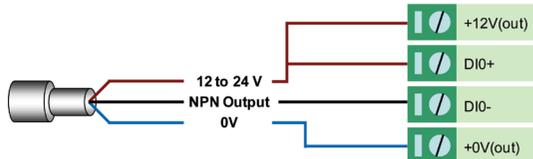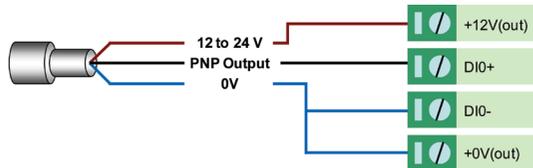
DIO_DI wet contact mode (no CH-CH isolation)

12-24V
12 to 24 V
PNP Output
0V
COM0
DIO0
DIO1
GND0

12-24V
12 to 24 V
NPN Output
0V
COM0
DIO0
DIO1
GND0

DIO_DO sink mode

COM0/1
DIO0/2
DIO1/3
GND0/1
12-24V
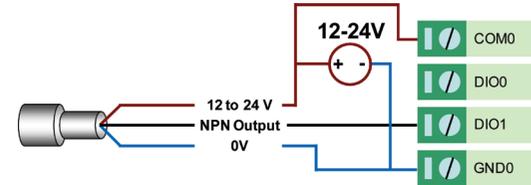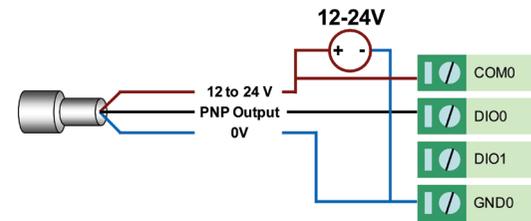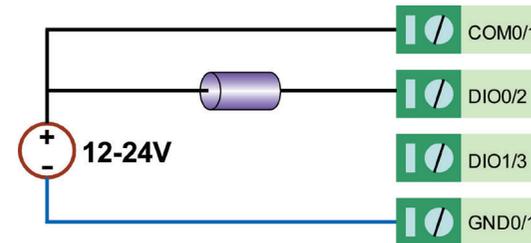
System Configuration

Configuration via Web Console

Configuration of an ioLogik E1500 is done via the web console.

- Default IP Address: 192.168.127.254
- Subnet Mask: 255.255.255.0

Note: Be sure to configure the host PC's IP address to the same subnet as the ioLogik E1500. For example, 192.168.127.253.

ioSearch Utility

ioSearch is a search utility that helps users locate an ioLogik E1500 on the local network. The utility can be found in the Documentation and Software CD under Software → ioSearch; the latest version can be downloaded from Moxa's website.

Load Factory Default Settings

There are three ways to restore the ioLogik E1500 to the factory default settings.

1. Remove the two screws and the aluminum plate, and then press and 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

Refer to the user's manual for details of the ioLogik's Modbus address, or refer to the start address of the I/O channels in the web console under User-defined Modbus Addressing → Default Address.

Active OPC Server Connection

Take the following steps to connect the ioLogik E1500 to an Active OPC Server:

1. Disable the user-defined Modbus address function.
2. Install the Active OPC Server Lite Package from the Documention and Software CD under Software → AOPC Lite → ActiveOPCSetup → Install.exe.
3. Install from the Web console under Active OPC Server Settings → AOPC & I/O Settings. and specify the IP address of the Active OPC Server. Specify the I/O channels that need to be added to Active OPC Server Lite, submit the settings, and then click Save/Restart.
4. From the web console under Active OPC Server Settings → Create AOPC Tag, click the "Create Tag" button.
5. Launch Active OPC Server Lite from Start → Programs → MOXA → IOServer → ActiveOPC → ActiveOPC. Save the configuration before exiting the Active OPC Server Lite program.