ioLogik E1500 Series

Robust remote I/O for railway applications

- Compliant with EN 50121-3-2, EN 50121-4, and a portion of EN 50155 specifications
- Wide operating temperature: -40 to 85°C (-40 to 185°F)
- Channel-to-Channel isolation (DI only)
- Robust and compact design for harsh environments
- Active communication with patented MX-AOPC UA Server and Active OPC Server
- User-defined Modbus/TCP addressing
- Friendly configuration via web browser

EN 50121 RoHS c UL us LISTED CE FC

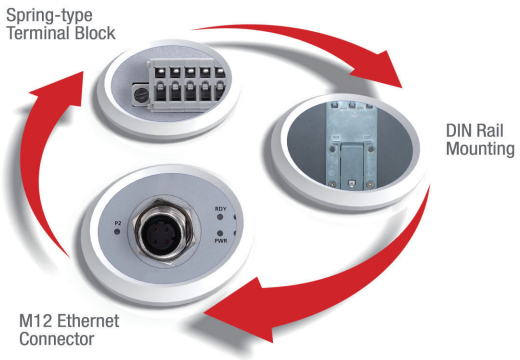
Introduction

The ioLogik E1500 series is designed to withstand the severe vibrations experienced in rolling stock and wayside applications. These products come with a threaded M12 Ethernet port to ensure wired connectivity, a spring-type terminal block for vibration-resistant cabling, and a convenient DIN rail mounting assembly. Carefully engineered DI channel-to-channel isolation helps maintain stable data communications by providing protection against cross-line power surges and crosstalk. In addition, this remote I/O product is compliant with EN 50121-3-2, EN 50121-4, and a portion of EN 50155 specifications, covering operating temperature, power input voltage, surge, ESD, and vibration, making the products suitable for a variety of industrial applications, including electronic equipment used on or around railway vehicles.

Rugged Ethernet Remote I/O: The ioLogik E1500 Series for Railway Markets

Ruggedly Designed for Monitoring Rolling Stock

The ioLogik E1500 Ethernet remote I/O devices have a durable aluminum housing and are compliant with EN 50121-3-2, EN 50121-4, and essential sections of EN 50155, all of which are essential for electronic equipment used in railway applications. The ioLogik E1500 design strictly conforms to EN standards, including not only EMC requirements but also with regards to shock, vibration, extended temperature range, humidity, and power supply variations.

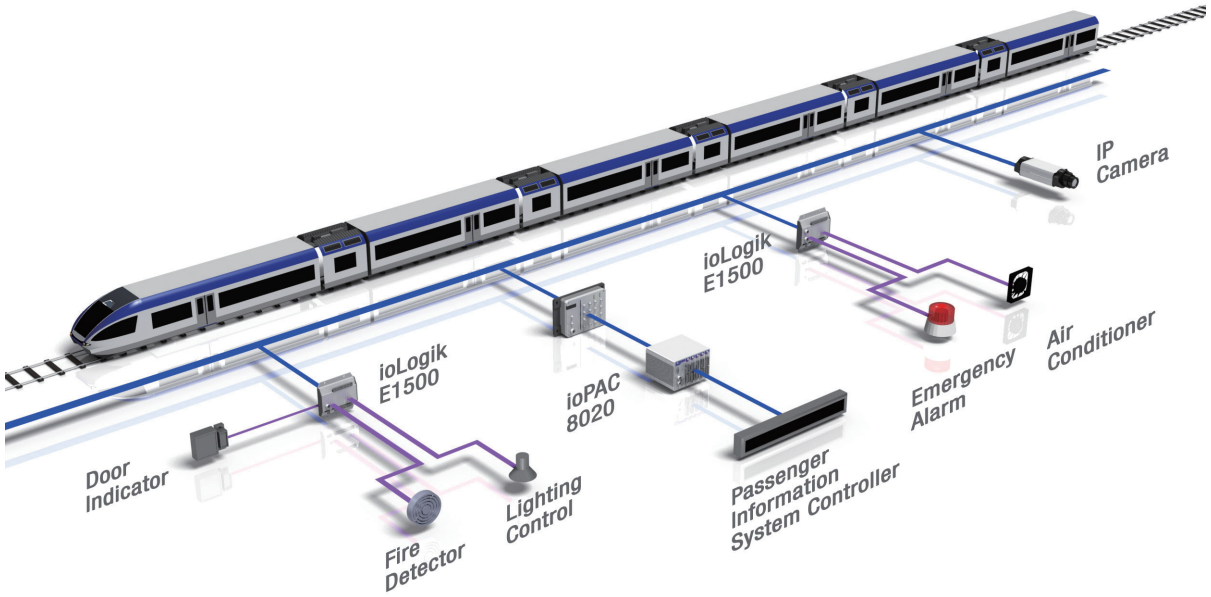


Channel-to-Channel Isolation

With this topology, I/O channels on the ioLogik E1500 are individually isolated from one another to ensure that data communication is highly stable. For example, a lightning strike that affects one channel will not affect devices connected to other channels on the same ioLogik E1500.

Application: Enhanced Efficiency for Remote Monitoring on Rolling Stock

Do you need an EN 50155/50121 compliant remote Ethernet I/O device for use on rolling stock? The ioLogik E1500 railway I/O module features an anti-vibration design, channel isolation, and stays operative in temperatures from -40° to 85°C, making it the ideal solution for data acquisition on rolling stock. Capable of both monitoring system status and triggering I/O events, the ioLogik E1500 is your best choice when you want to simultaneously enhance system reliability and maintenance efficiency in rolling stock environments.



ioLogik E1510-T Specifications

Inputs and Outputs

Digital Inputs: 12 channels (channel-to-channel isolation)
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 GND):
• On: 0 to 3 VDC
• Off: 10 to 30 VDC
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable (minimum: 1 millisecond)

Power Requirements

Power Consumption: 163 mA @ 24 VDC

ioLogik E1512-T Specifications

Inputs and Outputs

Digital Inputs: 4 channels (channel-to-channel isolation)
Configurable DI/Os: 4 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 GND):
• On: 0 to 3 VDC
• Off: 10 to 30 VDC
Common Type: 2 points per COM (Configurable DI/Os)
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable (minimum: 1 millisecond)

Digital Output

Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 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

Power Requirements

Power Consumption: 149 mA @ 24 VDC

Common Specifications

LAN
Ethernet: 1 10/100 Mbps, M12
Protection: 1.5 KV magnetic isolation
Protocols: Modbus/TCP, TCP/IP, UDP, DHCP, BOOTP, HTTP

Power Requirements
Power Input: 24 VDC nominal, 12 to 48 VDC
Note: Compliant with EN 50155 at 24 VDC

Physical Characteristics
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
Mounting: DIN rail (standard), wall (with optional kit)

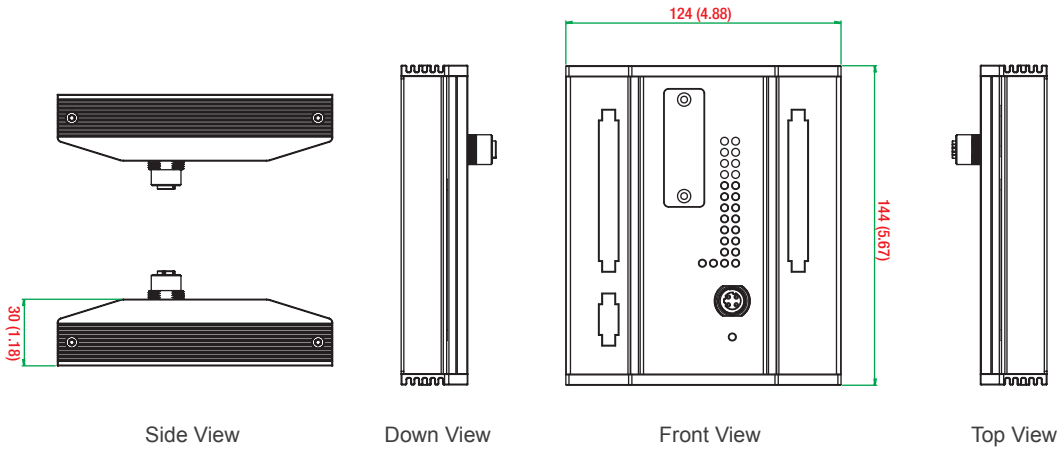
Environmental Limits
Operating Temperature: -40 to 85°C (-40 to 185°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.
Conformal Coating: Applies only to -CT models

Standards and Certifications
Safety: UL 508
EMI: EN 61000-3-2, EN 61000-3-3, EN 61000-6-4, FCC Part 15 Subpart B Class A
EMS: EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN 61000-6-2
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Green Product: RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.
Rail Traffic: EN 50155*, EN 50121-3-2, EN 50121-4
*Complies with a portion of EN 50155 specifications. Please contact Moxa or a Moxa distributor for details.

Warranty
Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models
ioLogik E1510-M12-T: Ethernet remote I/O, M12 connector, 12 DIs, -40 to 85°C operating temperature
ioLogik E1512-M12-T: Ethernet remote I/O, M12 connector, 4 DIs, 4 DI/Os, -40 to 85°C operating temperature
ioLogik E1510-M12-CT-T: Ethernet remote I/O, M12 connector, 12 DIs, coating, -40 to 85°C operating temperature
ioLogik E1512-M12-CT-T: Ethernet remote I/O, M12 connector, 4 DIs, 4 DI/Os, coating, -40 to 85°C operating temperature

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