

Ethernet remote I/O for railway applications



Features and Benefits

- User-definable Modbus TCP Slave addressing
- Active communication with MX-AOPC UA Server
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplifies I/O management with MXIO library for Windows or Linux
- Compliant with EN 50121-3-2, EN 50121-4, and a portion of EN 50155 specifications
- Wide operating temperature range: -40 to 85°C (-40 to 185°F)

Certifications



EN 50121-4



Introduction

The ioLogik E1500 Series Ethernet Remote I/O devices have a ruggedized aluminum housing, and are compliant with EN 50121-3-2, EN 50121-4, and essential sections of EN 50155 standard, which are essential for electronic equipment used in rolling stock applications. This rugged platform also features a wide operating temperature range of -40 to 85°C to deliver consistent performance even in harsh environments.

Ruggedly Designed for Monitoring Rolling Stock

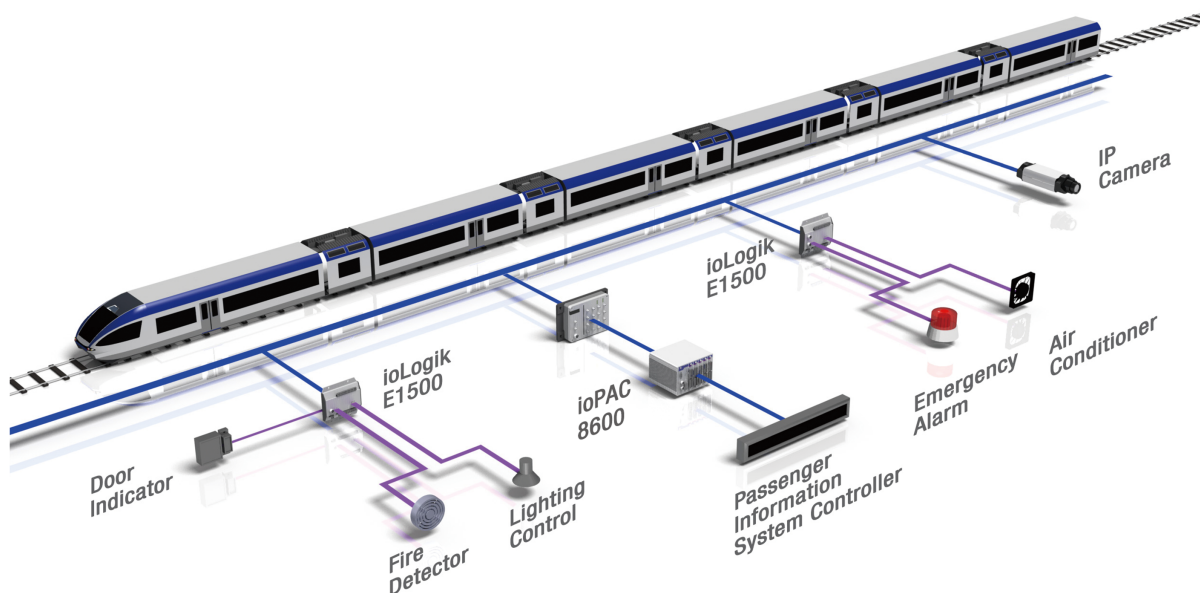
The ioLogik E1500 Series Ethernet remote I/O devices have a durable aluminum housing and are compliant with EN 50121-4 and a portion of EN 50155 specifications required for electronic equipment used in railway applications. The ioLogik E1500 design strictly conforms to EN standards, including not only 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

The railway I/O module is an EN 50155/50121 remote Ethernet I/O device for use on rolling stock. It features an anti-vibration design, channel isolation, and operates reliably in temperatures ranging 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, this railway I/O is a great choice for simultaneously enhancing system reliability and maintaining efficiency in rolling stock environments.



Specifications

Input/Output Interface

Digital Input Channels	ioLogik E1510-M12-T: 12 ioLogik E1512-M12-T: 4
Configurable DIO Channels (by software)	ioLogik E1512-M12-T: 4
Isolation	3k VDC or 2k Vrms
Buttons	Reset button

Digital Inputs

Connector	Spring-type Euroblock terminal
Counter Frequency	250 Hz
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 E1512-M12-T: 2 channels
Sensor Type	Dry contact Wet Contact (NPN or PNP)
Wet Contact (DI to GND)	On: 10 to 30 VDC Off: 0 to 3 VDC

Digital Outputs

Connector	Spring-type Euroblock terminal
Current Rating	200 mA per channel
I/O Mode	DO or pulse output
I/O Type	Sink
Over-Current Protection	0.65 A per channel @ 25°C
Over-Temperature Shutdown	175°C (typical), 150°C (min.)

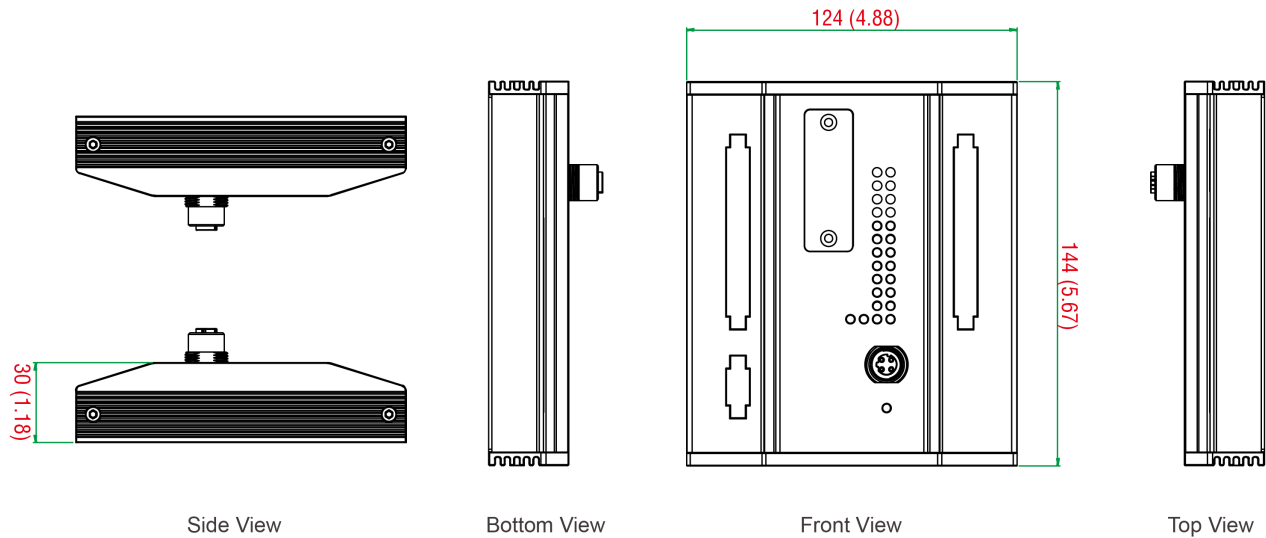
Over-Voltage Protection	35 VDC
Pulse Output Frequency	500 Hz
Ethernet Interface	
10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	1
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Configuration Options	Web Console (HTTP), Windows Utility (ioSearch)
Industrial Protocols	Modbus TCP Server (Slave), Moxa AOPC (Active Tag), MXIO Library
Management	BOOTP, DHCP Client, HTTP, IPv4, TCP/IP, UDP
LED Interface	
LED Indicators	ioLogik E1510-M12-T: PWR, RDY, EXP, LAN, DI Channels ioLogik E1512-M12-T: PWR, RDY, EXP, LAN, DI Channels, DO Channels
Modbus TCP	
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Mode	Client
Power Parameters	
Power Connector	Spring-type Euroblock terminal
No. of Power Inputs	1
Input Voltage	12 to 48 VDC
Power Consumption	150 mA @ 24 VDC
Physical Characteristics	
Housing	Aluminum
Dimensions	144 x 124 x 30 mm (5.67 x 4.88 x 1.18 in)
Weight	825 g (1.82 lb)
Installation	DIN-rail mounting, Wall mounting (with optional kit)
Wiring	I/O cable, 16 to 26 AWG Power cable, 16 to 26 AWG
Environmental Limits	
Operating Temperature	-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 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV

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

	IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Railway	EN 50121-4, EN 50155
Safety	UL 508
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Declaration	
Green Product	RoHS, CRoHS, WEEE
MTBF	
Time	ioLogik E1510-M12-T: 507,064 hrs ioLogik E1512-M12-T: 554,122 hrs
Standards	Telcordia SR332
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty
Package Contents	
Device	1 x ioLogik E1500 Series remote I/O
Installation Kit	1 x terminal block, 16-pin, 3.81 mm 1 x terminal block, 3-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	Conformal Coating
ioLogik E1510-M12-CT-T	12 x DI	✓
ioLogik E1510-M12-T	12 x DI	–
ioLogik E1512-M12-CT-T	4 x DI, 4 x DIO	✓
ioLogik E1512-M12-T	4 x DI, 4 x DIO	–

Accessories (sold separately)

Software

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

WK-90-01	Wall-mounting kit, 2 plates, 6 screws, 90 x 62 x 2.5 mm
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