Ethernet I/O

	ioLogik E1210	ioLogik E1211	ioLogik E1212	ioLogik E1214	ioLogik E1213**	ioLogik E1240	ioLogik E1241	ioLogik E1242	ioLogik E1260	ioLogik E1262
Input/Output										
Digital Inputs	16	–	8	6	4	–	–	4	–	–
Digital Outputs	–	16	–	–	4	–	–	–	–	–
Relays	–	–	–	6	–	–	–	–	–	–
Configurable DIOs	–	–	8	–	4	–	–	4	–	–
Analog Inputs	–	–	–	–	–	8	–	4	–	–
Analog Outputs	–	–	–	–	–	–	4	–	–	–
RTDs	–	–	–	–	–	–	–	–	6	–
Thermocouples	–	–	–	–	–	–	–	–	–	8
Ethernet										
Ports (Connector)	2 (RJ45)									
Speed	10/100 Mbps									
Switch (Daisy Chain)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP, SNMP									
Environmental Limits										
Standard Models	-10 to 60°C (14 to 140°F)									
Wide Temp. Models	-40 to 75°C (-40 to 167°F)									
Storage Temperature	-40 to 85°C (-40 to 185°F)									
Operating Humidity	5 to 95% RH (non-condensing)									
Software										
Active OPC Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Peer-to-Peer	✓	✓	✓	✓	✓	✓	✓	✓	–	–
Standards and Certifications										
Safety	UL 508									
EMC	EN 55022, EN 55024									
EMI	CISPR 22, FCC Part 15B Class A									
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8									
Shock	IEC 60068-2-27									
Vibration	IEC 60068-2-6									
Hazardous Locations	Class 1 Division 2; ATEX Zone 2									
Green Product	RoHS, CRoHS, WEEE									
Reliability										
Warranty	5 years	5 years	5 years	2 years*	5 years	5 years	5 years	5 years	5 years	5 years

*Because of the limited lifetime of power relays, products using that component are covered by a 2-year warranty.

**DO of ioLogik E1213 is source type

Ethernet I/O





	ioLogik E1261W-T	ioLogik E1263H-T	ioLogik E1261H-T	ioLogik E1510-M12-T	ioLogik E1512-M12-T
Input/Output					
Digital Inputs	–	–	–	12	4
Configurable DIOs	12	24	12	–	4
Analog Inputs	5	10	5	–	–
RTDs	3	3	3	–	–
Ethernet					
Ports (Connector)	1 (RJ45)	2 (RJ45)		1 (M12)	
Speed	10/100 Mbps				
Switch (Daisy Chain)	–	✓	✓	–	–
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP				
Environmental Limits					
Operating Temperature	-40 to 75°C (-40 to 167°F)			-40 to 85°C (-40 to 185°F)	
Storage Temperature	-40 to 85°C (-40 to 185°F)				
Operating Humidity	5 to 95% RH (non-condensing)				
Software					
Active OPC Server	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓
Standards and Certifications					
Safety	UL 508				
EMC	EN 55022, EN 55024			EN 61000-6-2, EN 61000-6-4	
EMI	CISPR 22, FCC Part 15B Class A				
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8				
Shock	IEC 60068-2-27				
Vibration	IEC 60068-2-6				
Rail Traffic	–	–	–	EN 50155; EN 50121-3-2; EN 50121-4	
Marine Communications	–	IEC 60945		–	–
Green Product	RoHS, CRoHS, WEEE				
Reliability					
Warranty	5 years				

RS-485 I/O

	ioLogik R1210	ioLogik R1212	ioLogik R1214	ioLogik R1240	ioLogik R1241
Input/Output					
Digital Inputs	16	8	6	–	–
Relays	–	–	6	–	–
Configurable DIOs	–	8	–	–	–
Analog Inputs	–	–	–	8	–
Analog Outputs	–	–	–	–	4
Serial					
Ports (Connector)	2 (5-wire Euroblock terminal)				
Interface	Dual RS-485				
Protocols	Modbus/RTU (slave)				
Environmental Limits					
Standard Models	-10 to 75°C (14 to 167°F)				
Wide Temp. Models	-40 to 85°C (-40 to 185°F)				
Storage Temperature	-40 to 85°C (-40 to 185°F)				
Operating Humidity	5 to 95% RH (non-condensing)				
Software					
MXIO	✓	✓	✓	✓	✓
ioSearch	✓	✓	✓	✓	✓
Standards and Certifications					
Safety	UL 508				
EMC	EN 55022, EN 55024				
EMI	CISPR 22, FCC Part 15B Class A				
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8				
Shock	IEC 60068-2-27				
Vibration	IEC 60068-2-6				
Green Product	RoHS, CRoHS, WEEE				
Reliability					
Warranty	5 years	5 years	2 years*	5 years	5 years

*Because of the limited lifetime of power relays, products using that component are covered by a 2-year warranty.

Modular I/O




	NA-4010	NA-4020	NA-4021	ioLogik E4200
Inputs/Outputs				
Digital Inputs	–	–	–	–
Digital Outputs	–	–	–	–
Analog Inputs	–	–	–	–
Analog Outputs	–	–	–	–
Ethernet				
Ports (connector)	1 (RJ45)	–	–	2 MACs (RJ45)
Speed	10/100 Mbps	–	–	10/100 Mbps
Protocols	Modbus/TCP (slave), BOOTP, HTTP	–	–	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, SNTP
Serial				
Ports (connector)	–	1 (terminal block)	1 (DB9 female)	1 (DB9 male)
Interface	–	RS-485	RS-232	RS-232
Protocols	–	Modbus/RTU (slave), Modbus/ASCII (slave)		For Moxa OnCell only
Physical Characteristics				
I/O Module Slots	32	32	32	16
Environmental Limits				
Operating Temperature	-10 to 60°C (14 to 140°F)			
Storage Temperature	-40 to 85°C (-40 to 185°F)			
Ambient Relative Humidity	5 to 95% RH (non-condensing)			
Software				
Click&Go	–	–	–	✓
Active OPC Server	–	–	–	✓
MXIO	✓	✓	✓	✓
ioAdmin	✓	✓	✓	–
Modular ioAdmin	–	–	–	✓
Standards and Certifications				
Safety	UL 508			
EMC	EN 61000-6-2, EN 61000-6-4			
EMI	CISPR 22, FCC Part 15B Class A			
EMS	EN 61000-4-2; EN 61000-4-3; EN 61000-4-4; EN 61000-4-5; EN 61000-4-6; EN 61000-4-8			
Shock	IEC 60068-2-27			
Vibration	IEC 60068-2-6			
Reliability				
Warranty	2 years	2 years	2 years	2 years

Digital I/O Modules

	M-1450	M-1451	M-1600	M-1601	M-1800	M-1801	M-2450	M-2600	M-2601	M-2800	M-2801
Inputs/Outputs											
Digital Inputs	4 (110 VAC)	4 (220 VAC)	16 (Sink)	16 (Source)	8 (Sink)	8 (Source)	–	–	–	–	–
Digital Outputs	–	–	–	–	–	–	–	16 (Sink)	16 (Source)	8 (Sink)	8 (Source)
Relays	–	–	–	–	–	–	4	–	–	–	–
Warranty	2 years										

Analog I/O Modules

	M-3802	M-3810	M-4402	M-4410	M-6200	M-6201
Inputs/Outputs						
Analog Inputs	8 (4 to 20 mA)	8 (00 to 10 V)	–	–	–	–
Analog Outputs	–	–	4 (4 to 20 mA)	4 (0 to 10 V)	–	–
RTDs	–	–	–	–	2	–
Thermocouples	–	–	–	–	–	2
Warranty	2 years					

Power Modules

	M-7001	M-7002	M-7804	M-7805
Power				
VDC	24	5/24/48	0	24
VAC	–	110/220	–	–
Purpose	System	Field	Field	Field
Warranty	2 years			

ioLogik E1200 Series

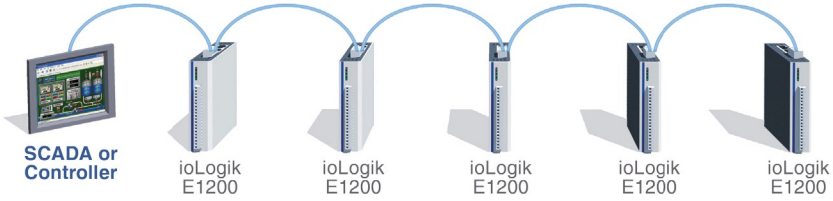
Ethernet remote I/O with 2-port Ethernet switch

- User-definable Modbus/TCP Slave addressing
- 2-port Ethernet switch for daisy-chain topologies
- Save time and wiring cost with peer-to-peer communications
- Active communications with MX-AOPC UA Server
- Supports SNMPv1/v2c
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplify I/O management with MXIO library on either a Windows or Linux platform
- Class I Division 2, ATEX Zone 2 certification
- Wide operating temperature range: -40 to 75°C (-40 to 167°F)

Introduction

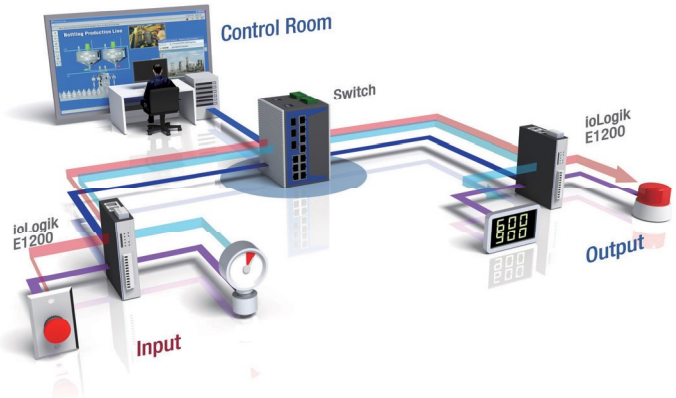
Daisy-Chained Ethernet I/O Connection

A new era of extensible Ethernet I/O arrays is here. The ioLogik E1200 industrial Ethernet remote I/O comes with two switched Ethernet ports to allow for the free flow of information downstream, to another local Ethernet device, or upstream, to a control server. Applications such as factory automation, security and surveillance systems, and tunnelled connections can make use of daisy-chained Ethernet for building multidrop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multidrop as the configuration most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik E1200 Ethernet remote I/O units not only increase the extensibility and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches. Daisy-chaining devices in this way will also reduce overall labor and cabling expenses. For example, if a production facility contains 700 stations with 20 I/O points per station, the savings on wiring costs can reach as much as 15% of the total expense.



Saving Time and Wiring Costs with Peer-to-Peer Communications

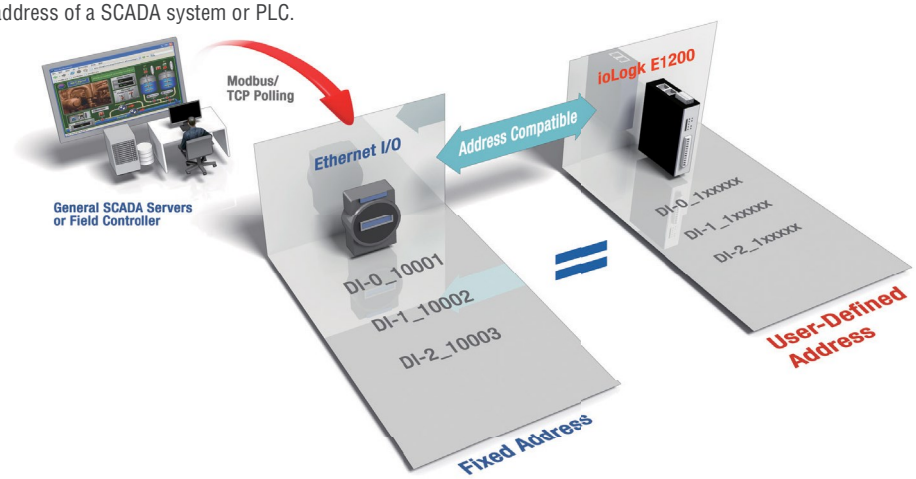
In remote automation applications, the control room and sensors are often far removed, making wiring over long distances a constant challenge. With peer-to-peer networking, users may now map a pair of ioLogik E1200 series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



User-Definable Modbus/TCP Addressing for Painless Upgrading of Existing Systems

For Modbus devices that are controlled and detected by fixed addresses, users need to spend a vast amount of time researching and verifying initial configurations. Users need to locate each device's networking details, such as I/O channels or vendor-defined addresses, to enable the initial or start address of a SCADA system or PLC.

The ioLogik E1200, with user-definable Modbus/TCP addressing, offers greater flexibility, and setup is easy. Instead of worrying about individual devices, users simply configure the function and address map to fit their needs.



ioLogik E1210 Specifications

Inputs and Outputs

Digital Inputs: 16 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software configurable

Power Requirements

Input Voltage: 12 to 36 VDC
Input Current: 110 mA @ 24 VDC

MTBF (mean time between failures)

Time: 671,345 hrs
Standard: Telcordia SR332

ioLogik E1211 Specifications

Inputs and Outputs

Digital Outputs: 16 channels
Isolation: 3k VDC or 2k Vrms

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

Input Voltage: 12 to 36 VDC
Input Current: 200 mA @ 24 VDC

MTBF (mean time between failures)

Time: 923,027 hrs
Standard: Telcordia SR332

ioLogik E1212 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DIOs (by jumper): 8 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable

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

Input Voltage: 12 to 36 VDC
Input Current: 155 mA @ 24 VDC

MTBF (mean time between failures)

Time: 561,930 hrs
Standard: Telcordia SR332

ioLogik E1213 Specifications

Inputs and Outputs
Digital Inputs: 8 channels
Digital Outputs: 4 channels
Configurable DIOs (by jumper): 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 12 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software configurable

Digital Output
Type: Source
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 500 Hz
Over-Voltage Protection: 41 VDC
Over-current Protection: 1.5 A per channel @ 25°C
Over-Temperature Shutdown: 175°C (typical), 150°C (min.)
Current Rating: 500 mA per channel

Power Requirements
Output Voltage Rating: 15 to 30 VDC (12 or 9 VDC configurable by jumper on the 4 DO channels)
Input Voltage: 12 to 36 VDC
Input Current: 130 mA @ 24 VDC

MTBF (mean time between failures)
Time: 715,256 hrs
Standard: Telcordia SR332

ioLogik E1214 Specifications

Inputs and Outputs
Digital Inputs: 6 channels
Relays: 6 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 6 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software configurable

Relay
Type: Form A (N.O.) power relay
Contact Current Rating:
Resistive Load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Breakdown Voltage: 500 VAC
Relay On/Off Time: 1500 ms (max.)
Initial Insulation Resistance: 1000 mega-ohms (min.) @ 500 VDC
Mechanical Endurance: 5,000,000 operations
Electrical Endurance: 100,000 operations @ 5 A resistive load
Contact Resistance: 100 milli-ohms (max.)
Pulse Output: 0.3 Hz at rated load
Note: Ambient humidity must be non-condensing and remain between 5 and 95%. The relays of the ioLogik E1214 may malfunction when operating in high condensation environments below 0°C.

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 188 mA @ 24 VDC

MTBF (mean time between failures)
Time: 808,744 hrs
Standard: Telcordia SR332

ioLogik E1240 Specifications

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (jumper selectable)
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burnout 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: 12 samples/sec
• Per channel: 1.5 samples/sec
• Only one channel enabled: 12 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 121 mA @ 24 VDC

MTBF (mean time between failures)
Time: 474,053 hrs
Standard: Telcordia SR332

ioLogik E1241 Specifications

Inputs and Outputs
Analog Outputs: 4 channels
Isolation: 3k VDC or 2k Vrms

Analog Output
Resolution: 12 bits
Output Range: 0 to 10 VDC, 4 to 20 mA
Drive Voltage: 10 mA (max.)
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Load Resistor: Internal register, 400 ohms
Note: 24 V of external power required when loading exceeds 1000 ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 194 mA @ 24 VDC

MTBF (mean time between failures)
Time: 888,656 hrs
Standard: Telcordia SR332

ioLogik E1242 Specifications

Inputs and Outputs
Digital Inputs: 4 channels
Configurable DIOs (by jumper): 4 channels
Analog Inputs: 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 4 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable

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

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (jumper selectable)
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burnout 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: 12 samples/sec
• Per channel: 3 samples/sec
• Only one channel enabled: 12 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 139 mA @ 24 VDC

MTBF (mean time between failures)
Time: 502,210 hrs
Standard: Telcordia SR332

ioLogik E1260 Specifications

Inputs and Outputs
RTDs: 6 channels
Isolation: 3k VDC or 2k Vrms

RTD
Sensor Type:
• PT50, PT100, PT200, PT500 (-200 to 850°C)
• PT1000 (-200 to 350°C)
• Resistance of 310, 620, 1250, and 2200 ohms
Input Connection: 2- or 3-wire
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 2 samples/sec
• Only one channel enabled: 12 samples/sec
Resolution: 0.1°C or 0.1 ohm
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Input Impedance: 625 kilo-ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 110 mA @ 24 VDC

MTBF (mean time between failures)
Time: 660,260 hrs
Standard: Telcordia SR332

ioLogik E1262 Specifications

Inputs and Outputs
Thermocouples: 8 channels
Isolation: 3k VDC or 2k Vrms

Thermocouple
Sensor Type: J (0 to 750°C), K (-200 to 1250°C), T (-200 to 350°C), E (-200 to 900°C), R (-50 to 1600°C), S (-50 to 1760°C), B (600 to 1700°C), N (-200 to 1300°C)
Millivolt Type:
• Mode: ±78.126 mV, ±39.062 mV, ±19.532 mV
• Fault and over-voltage protection:
-35 to +35 VDC (power off)
-25 to +30 VDC (power on)
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 1.5 samples/sec
• Only one channel enabled: 12 samples/sec
Resolution: 16 bits
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -40 and 75°C
Input Impedance: 10 mega-ohms

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 118 mA @ 24 VDC

MTBF (mean time between failures)
Time: 631,418 hrs
Standard: Telcordia SR332

Common Specifications

LAN

Ethernet: 2 switched 10/100 Mbps RJ45 ports
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP

Physical Characteristics

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 (0.44 lb)
Mounting: DIN rail or wall

Environmental Limits

Operating Temperature:
Standard Models: -10 to 60°C (14 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications

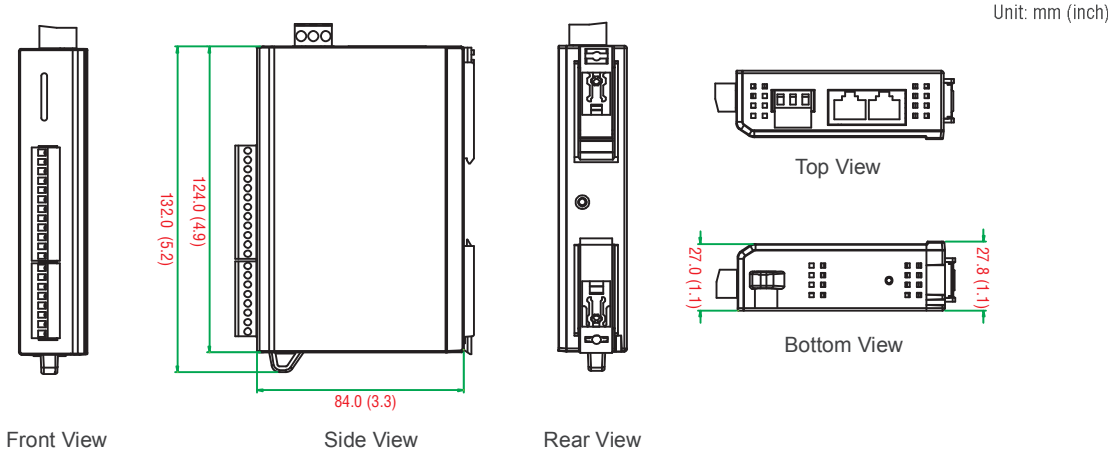
Safety: UL 508
EMC: EN 55022, EN 55024
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
Hazardous Location: Class 1 Division 2, ATEX Zone 2
Green Product: RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.

Warranty

Warranty Period: 5 years (excluding the ioLogik E1214)
Details: See www.moxa.com/warranty
Note: Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

ioLogik E1210: Ethernet remote I/O with 2-port Ethernet switch, 16 DIs, -10 to 60°C operating temperature
ioLogik E1210-T: Ethernet remote I/O with 2-port Ethernet switch, 16 DIs, -40 to 75°C operating temperature
ioLogik E1211: Ethernet remote I/O with 2-port Ethernet switch, 16 DOs, -10 to 60°C operating temperature
ioLogik E1211-T: Ethernet remote I/O with 2-port Ethernet switch, 16 DOs, -40 to 75°C operating temperature
ioLogik E1212: Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, 8 DIOs, -10 to 60°C operating temperature
ioLogik E1212-T: Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, 8 DIOs, -40 to 75°C operating temperature
ioLogik E1213: Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, 4 DOs, 4 DIOs, source-type DO, -10 to 60°C operating temperature
ioLogik E1213-T: Ethernet remote I/O with 2-port ethernet switch, 8 DIs, 4 DOs, 4 DIOs, source-type DO, -40 to 75°C operating temperature
ioLogik E1214: Ethernet remote I/O with 2-port Ethernet switch, 6 DIs, 6 relays, -10 to 60°C operating temperature
ioLogik E1214-T: Ethernet remote I/O with 2-port Ethernet switch, 6 DIs, 6 relays, -40 to 75°C operating temperature
ioLogik E1240: Ethernet remote I/O with 2-port Ethernet switch, 8 AIs, -10 to 60°C operating temperature
ioLogik E1240-T: Ethernet remote I/O with 2-port Ethernet switch, 8 AIs, -40 to 75°C operating temperature
ioLogik E1241: Ethernet remote I/O with 2-port Ethernet switch, 4 AOs, -10 to 60°C operating temperature
ioLogik E1241-T: Ethernet remote I/O with 2-port Ethernet switch, 4 AOs , -40 to 75°C operating temperature
ioLogik E1242: Ethernet remote I/O with 2-port Ethernet switch, 4 DIs, 4 DIOs, 4 AIs, -10 to 60°C operating temperature
ioLogik E1242-T: Ethernet remote I/O with 2-port Ethernet switch, 4 DIs, 4 DIOs, 4 AIs, -40 to 75°C operating temperature
ioLogik E1260: Ethernet remote I/O with 2-port Ethernet switch, 6 RTDs, -10 to 60°C operating temperature
ioLogik E1260-T: Ethernet remote I/O with 2-port Ethernet switch, 6 RTDs, -40 to 75°C operating temperature
ioLogik E1262: Ethernet remote I/O with 2-port Ethernet switch, 8 TCs, -10 to 60°C operating temperature
ioLogik E1262-T: Ethernet remote I/O with 2-port Ethernet switch, 8 TCs, -40 to 75°C operating temperature

Package Checklist

- ioLogik E1200
- Documentation and software CD
- Quick installation guide (printed)

ioLogik E1261W-T

Ethernet remote I/O for wind power applications

- User-definable Modbus/TCP Slave addressing
- Active communications with MX-AOPC UA Server
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplify I/O management with MXIO library on either Windows or Linux platform
- Wide operating temperature range: -40 to 75°C (-40 to 167°F)

Introduction

Moxa's ioLogik E1261W-T is designed for Ethernet-based remote condition monitoring systems. With 3 RTD, 5 AI, and 12 DIO channels, the ioLogik E1261W-T's I/O combination is ideal for monitoring wind turbines and environmental conditions. Unlike other remote I/O products, which are passive and must poll for data, the ioLogik E1261W-T supports active communication with Moxa's MX-AOPC UA Server to enable real time communications capabilities with remote monitoring and control systems.

Specifications

LAN
Ethernet: 1 10/100 Mbps RJ45 port
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP

Serial
Interface: 1 RS-485-2w terminal block port
Parity: None
Data Bits: 8
Stop Bits: 1
Flow Control: None
Baudrate: 1200 to 115200 bps
Protocols: Modbus RTU (slave)

Inputs and Outputs
Configurable DIOs (by software): 12 channels
Analog Inputs: 5 channels
RTDs: 3 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: 12 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable

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 channe

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (software selectable)
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burnout detection)
Accuracy:
• ±0.1% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°C
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 2.4 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

RTD
Sensor Type: PT100 (-200 to 850°C)
Input connection: 2- or 3-wire
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 4 samples/sec
Resolution: 16 bits
Accuracy:
• ±0.1% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°C
Input Impedance: 625 kilo-ohms (min.)

Power Requirements
Input Voltage: 12 to 36 VDC
Input Current: 143 mA @ 24 VDC

Physical Characteristics

Wiring: I/O cable, 14 AWG (max.)
Dimensions: 115 x 79 x 40.4 mm (4.53 x 3.11 x 1.59 in)
Weight: Under 250 g (0.55 lb)
Mounting: DIN-rail or wall

Environmental Limits

Operating Temperature: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications

Safety: UL 508
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8
Green Product: RoHS, CRoHS, WEEE
Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

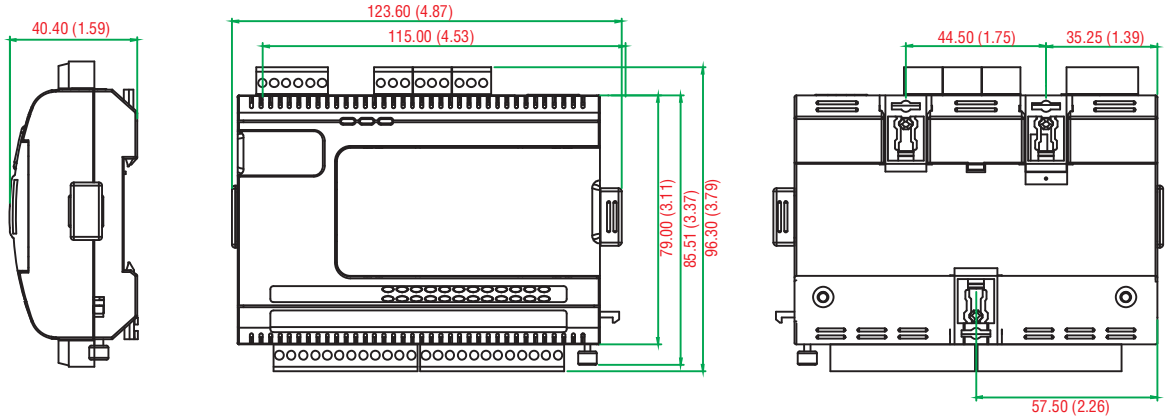
Time: 367,508 hrs
Standard: Telcordia SR332

Warranty

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

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View

Ordering Information

Available Models

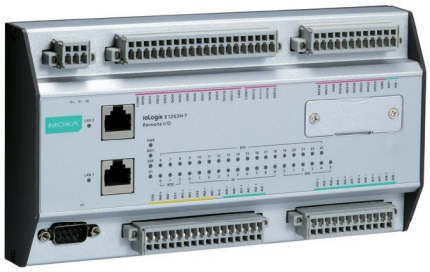
ioLogik E1261W-T: Ethernet remote I/O with 12 DIOs, 5 AIs, 3 RTDs, -40 to 75°C operating temperature

Package Checklist

- ioLogik E1261W-T
- Documentation and software CD
- Quick installation guide (printed)

ioLogik E1200H Series

Ethernet remote I/O for offshore wind power applications



- User-definable Modbus/TCP Slave addressing
- 2-port Ethernet switch for daisy-chain topologies
- Active communications with MX-AOPC UA Server
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplify I/O management with MXIO library on either Windows or Linux platform
- IEC 60945 approval for harsh offshore environments
- Wide operating temperature range: -40 to 75°C (-40 to 167°F)

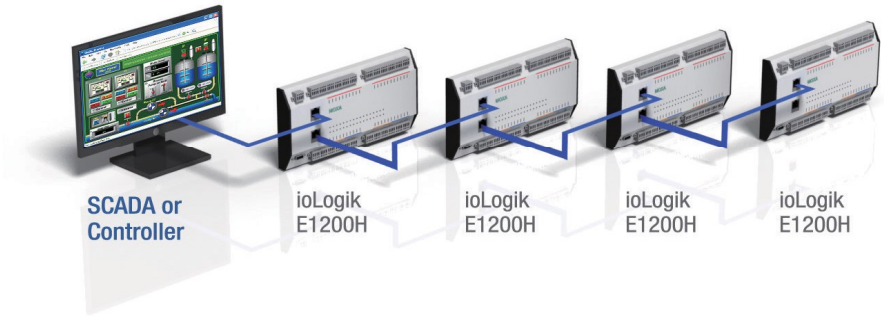
Introduction

Industry-Proven Rugged Design

Installation of remote Ethernet I/O in offshore environments is a real challenge. It is critical to find devices properly designed for protected, safe use in these environments. Moxa's ioLogik E1200H series with IEC 60945 certifications fulfills the need for devices suitable for such demanding industrial applications. Compactly packaged in a metal housing, this rugged hardware supports operating temperatures ranging from -40 to 75°C, meeting the stringent demands of IEC 60945 for harsh offshore applications.

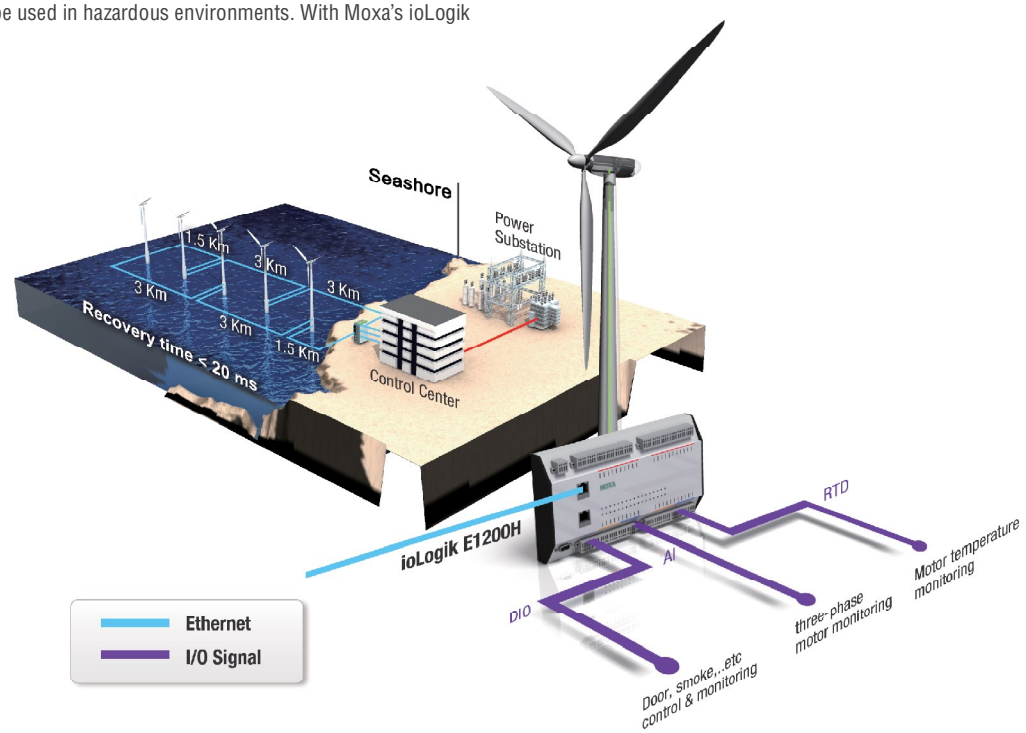
Daisy-Chain Topology Reduces Deployment Costs

Thanks to its two embedded Ethernet switch ports, the ioLogik E1200H remote Ethernet I/O allows you to create daisy-chain topologies for easy cabling. In distributed Ethernet data acquisition applications, panels, units, and cabinets are often located at remote sites where space is limited. The daisy-chain capability of the ioLogik E1200H series allows ioLogik E1200H units to connect in series either to each other or to other nearby Ethernet devices, drastically saving on both space and wiring costs.



Application: Offshore Remote Monitoring

Have you ever wondered where to find a rugged remote Ethernet I/O device for offshore facilities? You need something with the ability to withstand extreme weather conditions, wide temperature changes, and that can be used in hazardous environments. With Moxa's ioLogik E1200H, you get a robust design that will meet your most stringent demands, ensuring your remote data acquisition applications are reliable, consistent, and safe.



ioLogik E1261H Specifications

Inputs and Outputs

Configurable DIOs (by software): 12 channels
Analog Inputs: 5 channels
RTDs: 3 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 (channels 0 to 3)
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: 12 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software Configurable

Digital Output

Type: Sink
I/O Mode: DO or Pulse Output (channels 0 to 3)
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

Analog Input

Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (software selectable)
Input Range: 0 to 10 V, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burnout detection)
Accuracy:
• ±0.5% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°
Sampling Rate (all channels):
• All channels: 12 samples/sec
• Per channel: 1.5 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

RTDs

Sensor Type:
PT100 (-200 to 850°C)
Input Connection: 2- or 3-wire
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 1.5 samples/sec
Resolution: 0.5°C
Accuracy:
• ±0.5% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°C
Input Impedance: 625 kilo-ohms

Power Requirements

Input Voltage: 12 to 48 VDC
Input Current: 235 mA @ 24 VDC

Physical Characteristics

Dimensions: 140 x 113 x 36.3 mm (5.51 x 4.45 x 1.43 in)
Weight: 825 g (1.82 lb)

MTBF (mean time between failures)

Time: 296,094 hrs
Standard: Telcordia SR332

ioLogik E1263H Specifications

Inputs and Outputs
Configurable DIOs (by software): 24 channels
Analog Inputs: 10 channels
RTDs: 3 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 (channels 0 to 7)
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: 12 points per COM
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software configurable

Digital Output
Type: Sink
I/O Mode: DO or Pulse Output (channels 0 to 7)
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

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (software selectable)
Input Range: 0 to 10 V, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burnout detection)
Accuracy:
• ±0.5% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°
Sampling Rate (all channels):
• All channels: 12 samples/sec
• Per channel: 0.9 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

RTDs
Sensor Type:
• PT100 (-200 to 850°C)
Input connection: 2- or 3-wire
Sampling Rate:
• All channels: 12 samples/sec
• Per channel: 0.9 samples/sec
Resolution: 0.5°C
Accuracy:
• ±0.5% FSR @ 25°C
• ±1.0% FSR @ -40 and 75°C
Input Impedance: 625 kilo-ohms

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 343 mA @ 24 VDC

Physical Characteristics
Dimensions: 204 x 113 x 36.3 mm (8.03 x 4.45 x 1.43 in)
Weight: 945 g (2.08 lb)

MTBF (mean time between failures)
Time: 180,390 hrs
Standard: Telcordia SR332

Common Specifications

LAN
Ethernet: 2 switched 10/100 Mbps RJ45 ports
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, HTTP

Serial
Interface: 1 RS-232/422/485 (software selectable) DB9 male port
Parity: None
Data Bits: 8
Stop Bits: 1
Flow Control: None
Baudrate: 300 to 115200 bps
Protocols: Modbus RTU (slave)

Physical Characteristics
Wiring: I/O cable max. 14 AWG
Mounting: DIN rail (standard), wall (with optional kit)

Environmental Limits
Operating Temperature: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

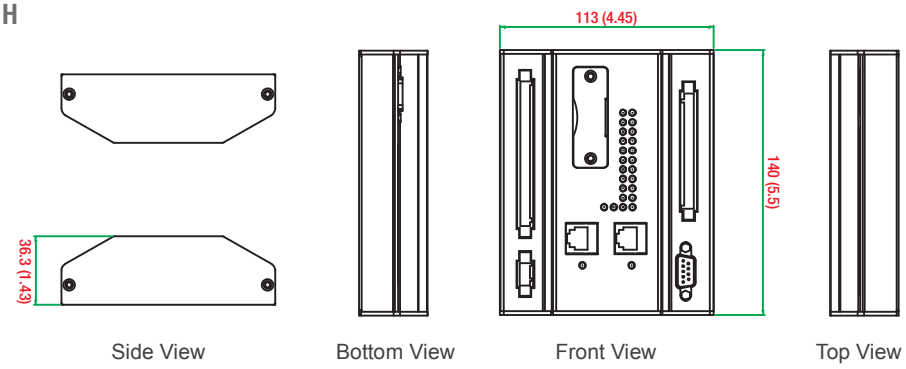
Standards and Certifications
Safety: UL 508
EMC: EN 55022/24, EN 61000-6-2/6-4
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV
IEC 61000-4-5 Surge: Power: 2 kV
IEC 61000-4-6 CS: 3 V
IEC 61000-4-8
Maritime: IEC 60945
Green Product: RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.

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

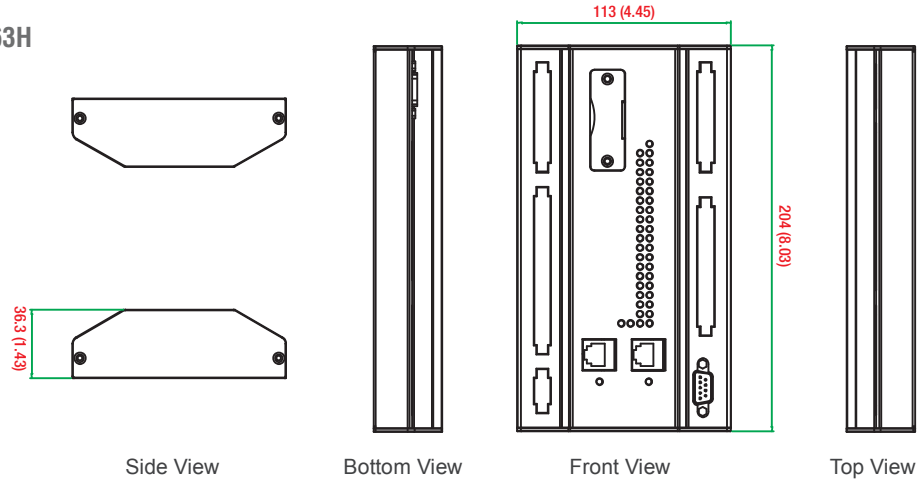
Dimensions

Unit: mm (inch)

ioLogik E1261H



ioLogik E1263H



Ordering Information

Available Models

ioLogik E1261H-T: Ethernet remote I/O with 2-port Ethernet switch, 12 DIOs, 5 AIs and 3 RTDs, -40 to 75°C operating temperature.

ioLogik E1263H-T: Ethernet remote I/O with 2-port Ethernet switch, 24 DIOs, 10 AIs and 3 RTDs, -40 to 75°C operating temperature.

Optional Accessories (can be purchased separately)

WK-90: Wall-mounting kit, BKTx2 FMSx6 NI Nylok M3x6

Package Checklist

- ioLogik E1200H-T
- Documentation and software CD
- Quick installation guide (printed)

ioLogik E1500 Series

Ethernet remote I/O for railway applications

- User-definable Modbus/TCP Slave addressing
- Active communications with MX-AOPC UA Server
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Simplify I/O management with MXIO library on either Windows or Linux platform
- EN 50121-3-2, EN 50121-4, and EN 50155* approval for harsh railway environments
- Wide operating temperature range: -40 to 85°C (-40 to 185°F)

*Complies with a portion of EN 50155 specifications

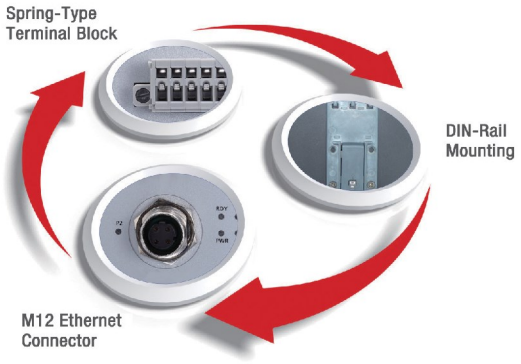
EN 50121 RoHS c UL us LISTED CE FC

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.

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.

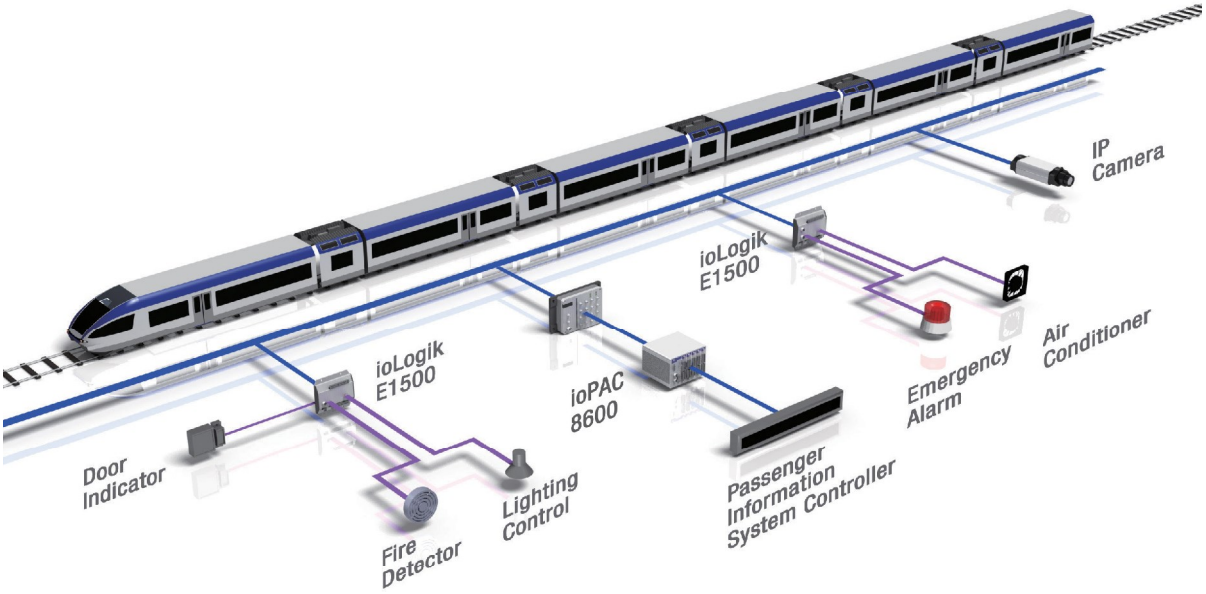


Channel-to-Channel Isolation

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 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, 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

MTBF (mean time between failures)

Time: 507,064 hrs
Standard: Telcordia SR332

ioLogik E1512-T Specifications

Inputs and Outputs

Digital Inputs: 4 channels (channel-to-channel isolation)
Configurable DIOs (by software): 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 DIOs)
Counter Frequency: 250 Hz
Digital Filtering Time Interval: Software configurable

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

MTBF (mean time between failures)

Time: 554,122 hrs
Standard: Telcordia SR332

Common Specifications

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

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 150 mA @ 24 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: Under 825 g (1.82 lb)
Mounting: DIN-rail (standard), wall (with optional kit)

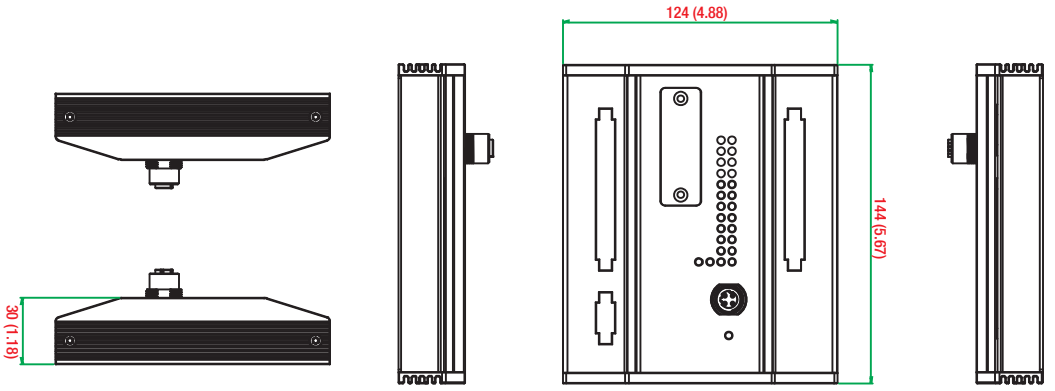
Environmental Limits
Operating Temperature: -40 to 85°C (-40 to 185°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.
Conformal Coating: Applies only to -CT models

Standards and Certifications
Safety: UL 508
EMC: EN 61000-6-2/6-4
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV
IEC 61000-4-3 RS:
80 MHz to 1 GHz: 10 V/m
1.4 GHz to 2 GHz: 3 V/m
2 GHz to 2.7 GHz: 1 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
Rail Traffic: EN 50155*, EN 50121-3-2, EN 50121-4
*Complies with a portion of EN 50155 specifications.
Green Product: RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.

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

Dimensions

Unit: mm (inch)



Side View | Bottom View | Front View | Top View

Ordering Information

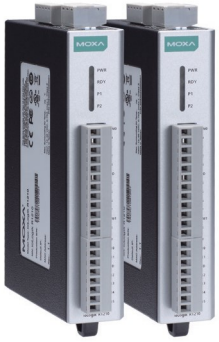
Available Models
ioLogik E1510-M12-T: Ethernet remote I/O with M12 connector, 12 DIs, -40 to 85°C operating temperature
ioLogik E1510-M12-CT-T: Ethernet remote I/O with M12 connector, 12 DIs, coating, -40 to 85°C operating temperature
ioLogik E1512-M12-T: Ethernet remote I/O with M12 connector, 4 DIs,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

Package Checklist
- ioLogik E1500
- Documentation and software CD
- Quick installation guide (printed)

Optional Accessories (can be purchased separately)
WK-90: Wall-mounting kit, BKTx2 FMSx6 NI Nylok M3x6

ioLogik R1200 Series

RS-485 remote I/O



- Dual RS-485 remote I/O with built-in repeater
- Supports the installation of multidrop communications parameters
- Install communications parameters and upgrade firmware via USB
- Upgrade firmware through an RS-485 connection
- Wide operating temperature range: -40 to 85°C (-40 to 185°F)

Introduction

The ioLogik R1200 RS-485 serial remote I/O devices are perfect for establishing a cost-effective, dependable, and easy-to-maintain remote process control I/O system. Remote serial I/O products offer process engineers the benefit of simple wiring, as they only require two wires to communicate with the controller and other RS-485 devices while adopting the EIA/TIA RS-485 communication protocol to transmit and receive data at high speed over long distances. In addition to communication configuration by software or USB and dual RS-485 port design, Moxa's remote I/O devices eliminate the nightmare of extensive labor associated with the setup and maintenance of data acquisition and automation systems. Moxa also offers different I/O combinations, which provide greater flexibility and are compatible with many different applications.

ioLogik R1200 Series Selection Table

Models	I/O Combinations				
	Digital Inputs	Configurable DIOs	Relays	Analog Inputs	Analog Outputs
ioLogik R1210	16	–	–	–	–
ioLogik R1212	8	8	–	–	–
ioLogik R1214	6	–	6	–	–
ioLogik R1240	–	–	–	8	–
ioLogik R1241	–	–	–	–	4

ioLogik R1210 Specifications

Inputs and Outputs

Digital Inputs: 16 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

Power Requirements

Input Voltage: 12 to 48 VDC
Input Current: 154 mA @ 24 VDC

ioLogik R1212 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DIOs (by jumper): 8 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 8 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

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

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 187 mA @ 24 VDC

ioLogik R1214 Specifications

Inputs and Outputs
Digital Inputs: 6 channels
Relays: 6 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 COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 6 points per COM
Counter Frequency: 2.5 kHz
Digital Filtering Time Interval: Software Configurable

Relay
Type: Form A (N.O.) power relay
Contact Current Rating: Resistive load: 5 A @ 30 VDC, 250 VAC, 110 VAC
Breakdown Voltage: 500 VAC
Relay On/Off Time: 1500 ms (max.)
Initial Insulation Resistance: 1000 mega-ohms (min.) @ 500 VDC
Mechanical Endurance: 5,000,000 operations
Electrical Endurance: 100,000 operations @ 5 A resistive load
Contact Resistance: 100 milli-ohms (max.)
Pulse Output: 0.3 Hz at rated load
Note: Ambient humidity must be non-condensing and remain between 5 and 95%. The relays of the ioLogik R1214 may malfunction when operating in high condensation environments below 0°C.

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 207 mA @ 24 VDC

ioLogik R1240 Specifications

Inputs and Outputs
Analog Inputs: 8 channels
Isolation: 3k VDC or 2k Vrms

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current (jumper selectable)
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA, 4 to 20 mA (burn-out mode)
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
• Per channel: 1.5 samples/sec
• Only one channel enabled: 12 samples/sec
Input Impedance: 10 mega-ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 216 mA @ 24 VDC

ioLogik R1241 Specifications

Inputs and Outputs
Analog Outputs: 4 channels
Isolation: 3k VDC or 2k Vrms

Analog Output
Resolution: 12 bits
Output Range: 0 to 10 VDC, 0 to 20 mA, 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 register: 400 ohms
Note: 24 V of external power required when loading exceeds 1000 ohms

Power Requirements
Input Voltage: 12 to 48 VDC
Input Current: 343 ma @ 24 VDC

Common Specifications

Serial
Interface: 2 RS-485-2w terminal block ports
Serial Line Protection:
• ESD Protection: 15 kV
• Surge Protection: 1 kV
• High/Low Resistor for RS-485: 1 kΩ, 150 kΩ
Parity: None, Even, Odd
Data Bits: 8
Stop Bits: 1, 2
Baudrate: 1200 to 921600 bps
Protocols: Modbus RTU (slave)

Physical Characteristics
Wiring: I/O cable max. 16 AWG
Dimensions: 27.8 x 124 x 84 mm (1.09 x 4.88 x 3.31 in)
Weight: Under 200 g (0.44 lb)
Mounting: DIN-rail or wall

Environmental Limits
Operating Temperature:
Standard Models: -10 to 75°C (14 to 167°F)
Wide Temp. 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)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications

Safety: UL 508
EMC: EN 55022/24
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 0.5 kV
IEC 61000-4-5 Surge: Power: 2 kV
IEC 61000-4-6 CS: 3 V
IEC 61000-4-8

Green Product: RoHS, CRoHS, WEEE
Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

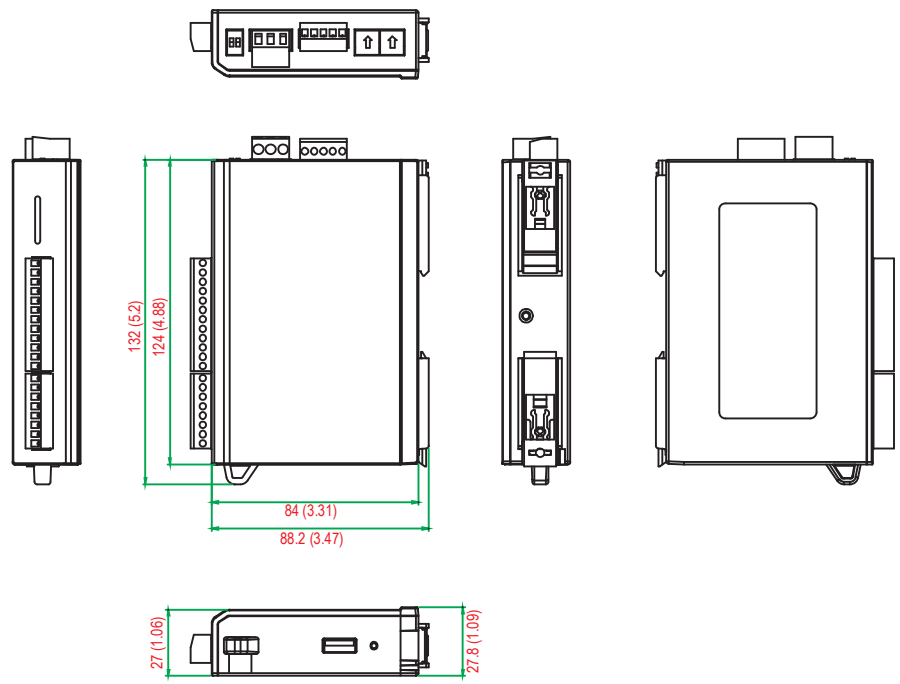
Time: 1,239,293 hrs
Standard: Telcordia SR332

Warranty

Warranty Period: 5 years (excluding the ioLogik R1214)
Details: See www.moxa.com/warranty
Note: Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

ioLogik R1210: RS-485 remote I/O with 16 DIs, -10 to 75°C operating temperature
ioLogik R1210-T: RS-485 remote I/O with 16 DIs, -40 to 85°C operating temperature
ioLogik R1212: RS-485 remote I/O with 8 DIs, 8 DIOs, -10 to 75°C operating temperature
ioLogik R1212-T: RS-485 remote I/O with 8 DIs, 8 DIOs, -40 to 85°C operating temperature
ioLogik R1214: RS-485 remote I/O with 6 DIs, 6 relays, -10 to 75°C operating temperature
ioLogik R1214-T: RS-485 remote I/O with 6 DIs, 6 relays, -40 to 85°C operating temperature
ioLogik R1240: RS-485 remote I/O with 8 AIs, -10 to 75°C operating temperature
ioLogik R1240-T: RS-485 remote I/O with 8 AIs, -40 to 85°C operating temperature
ioLogik R1241: RS-485 remote I/O with 4 AOs, -10 to 75°C operating temperature
ioLogik R1241-T: RS-485 remote I/O with 4 AOs, -40 to 85°C operating temperature

Package Checklist

- ioLogik R1200
- Documentation and software CD
- Quick installation guide (printed)

ioLogik 4000 Series

Modular remote I/O

- I/O expansion without a backplane
- Active communications with MX-AOPC UA Server
- Supports SNMPv1/v2c
- Easy configuration with Modular ioAdmin utility
- Friendly configuration via web browser
- Simplify I/O management with MXIO library on either a Windows or Linux platform

Introduction

The ioLogik 4000 series is suitable for remote monitoring and alarm systems, such as those used for water treatment systems, water supply systems, wastewater treatment systems, and power monitoring systems. These kinds of applications need more I/O points and a variety of I/O types, including temperature sensors, gas detectors, and water quality detectors, all of which can benefit from the versatile mixture of I/O features supported by the ioLogik 4000 series.

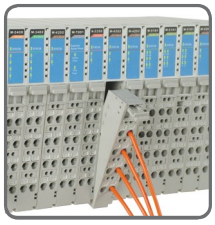
Slice Form Factor and Flexible I/O Variety

The unique modular construction of the ioLogik 4000 series allows the mixing and matching of modules to achieve the best combination of I/O modules to meet the needs of a wide range of remote automation applications. The ioLogik 4000 series features an industrial modular housing that allows I/O modules to be added to the base unit without a backplane. The width of each module is only 12 mm, perfect for space-limited applications. The ioLogik 4000 series provides high density I/O points for greater flexibility and expandability. The modules can connect to virtually any type of sensor, including but not limited to those for temperature, pressure, flow, voltage, current, and contact closure.

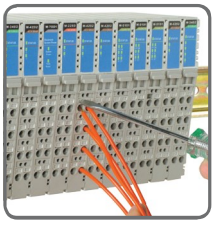
Easy Maintenance

The ioLogik 4000 series comes with removable spring-type terminal blocks (RTBs) that allow you to conserve field wiring for future use. Each I/O expansion module can be quickly and easily replaced.

Slice-Type I/O Modules



Removable Terminal Block



Spring-Type Terminal Block

Module Coding Tag

ioLogik E4200 Specifications

LAN

Ethernet: 2 MACs, 10/100 Mbps RJ45 ports
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, SNTP, SMTP

Serial

Interface: 1 RS-232 DB9 male port
Parity: None
Stop Bits: 1
Flow Control: 115200 bps
Protocols: For Moxa OnCell only

Power Requirements

Input Voltage: 11 to 28.8 VDC
Input Current: 175 mA @ 24 VDC
Current for I/O Modules: 1.5 A (max.) @ 5 VDC

Physical Characteristics

Weight: 180 g (0.40 lb)

MTBF (mean time between failures)

Time: 357,000 hrs
Standard: Telcordia SR332

NA-4010 Specifications

LAN
Ethernet: 1 10/100 Mbps RJ45 port
Protocols: Modbus/TCP (slave), HTTP, BOOTP
IP Settings: ARP, BOOTP, static IP

Power Requirements
Input Voltage: 11 to 28.8 VDC
Input Current: 60 mA @ 24 VDC
Current for I/O Modules: 1.5 A (max.) @ 5 VDC

Physical Characteristics
Weight: 150 g (0.33 lb)

MTBF (mean time before failures)
Time: 4,739,300 hrs
Standard: Telcordia SR332

NA-4020/4021 Specifications

Serial
Interface:
• NA-4020: 1 RS-485-2w terminal block port
• NA-4021: 1 RS-232 DB9 female port
Parity: None, Even, Odd
Data Bits: 7, 8
Stop Bits: 1, 2
Baudrate: 1200 to 115200 bps
Protocols: Modbus/RTU (slave), Modbus/ASCII (slave)

Power Requirements
Input Voltage: 11 to 28.8 VDC
Input Current: 70 mA @ 24 VDC
Current for I/O Modules: 1.5 A (max.) @ 5 VDC

Physical Characteristics
Weight: 150 g (0.33 lb)

MTBF (mean time between failures)
NA-4020 Time: 4,694,800 hrs
NA-4021 Time: 5,208,300 hrs
Standard: Telcordia SR332

Common Specifications

Field Power
Rated Voltage: 11 to 28.8 VDC
Current in Field Power Contact: 10 A (max.)

Physical Characteristics
Wiring: I/O cable max. 14 AWG
Dimensions: 45 x 99 x 70 mm (1.77 x 3.90 x 2.76 in)
Mounting: DIN rail

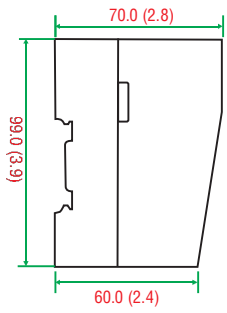
Environmental Limits
Operating Temperature: -10 to 60°C (14 to 140°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95% (non-condensing)
Shock: IEC 60068-2-27
Vibration: IEC 60068-2-6
Altitude: Up to 2000 m
Note: Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Standards and Certifications
Safety: UL 508
EMC: EN 61000-6-2/6-4
EMI: CISPR 22, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS:
80 MHz to 1 GHz: 10 V/m
1.4 GHz to 2 GHz: 3 V/m
2 GHz to 2.7 GH: 1 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 1 kV
IEC 61000-4-6 CS: 10 V
IEC 61000-4-8

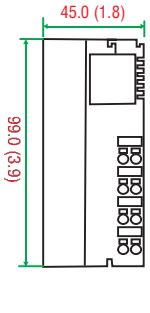
Dimensions

Unit: mm (inch)

I/O Network Adapter

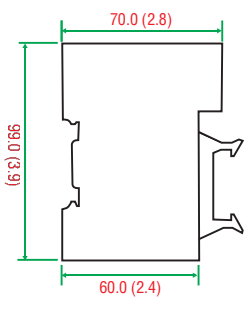


Side View

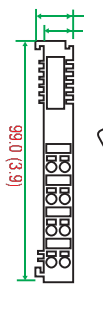


Front View

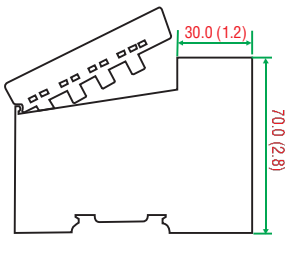
I/O Module



Side View



Front View



Removable View

Ordering Information

Step 1: Select a network adapter module

ioLogik E4200 or NA-4000 series

Step 2: Select I/O modules

M-1000/2000/3000/4000/6000 series

Step 3: Select power modules (optional)

M-7000 series

Available Models

ioLogik E4200: Modular Ethernet remote I/O adapter with Click&Go, up to 16 I/O modules, -10 to 60°C operating temperature
NA-4010: Modular Ethernet remote I/O adapter with up to 32 I/O modules, -10 to 60°C operating temperature
NA-4020: Modular RS-485 remote I/O adapter with up to 32 I/O modules, -10 to 60°C operating temperature
NA-4021: Modular RS-232 remote I/O adapter with up to 32 I/O modules, -10 to 60°C operating temperature
Note: The ioLogik E4200 Modular Ethernet remote I/O adapter can be expanded with up to 16 I/O modules. The NA-4010 and NA-4020/4021 network adapters can be expanded with up to 32 I/O modules.

Package Checklist

- ioLogik 4000 series
- I/O modules (sold separately)
- Power modules (sold separately)
- Documentation and software CD
- Quick installation guide (printed)

ioLogik 4000 Expansion Modules

Digital Input Modules

M-1800: 8 digital inputs, sink type, 24 VDC

Digital Inputs: 8 channels
Type: sink
On-state Voltage: 24 VDC nominal, 11 to 28.8 VDC
Off-state Voltage: 0 to 5 VDC
On-state Current: 6 mA/point @ 28.8 VDC (max.)
Input Impedance: 5.1 kilo-ohms (typical)
Filtering Time: 1.5 ms (typical)
Common Type: External common (single common)
Input Current: 35 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 15,759,240 hrs (Standard: Telcordia SR332)

M-1801: 8 digital inputs, source type, 24 VDC

Digital Inputs: 8 channels
Type: source
On-state Voltage: 24 VDC nominal, 11 to 28.8 VDC
Off-state Voltage: 0 to 5 VDC
On-state Current: 6 mA/point @ 28.8 VDC (max.)
Input Impedance: 5.1 kilo-ohms (typical)
Filtering Time: 1.5 ms (typical)
Common Type: External common (single common)
Input Current: 35 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 15,811,800 hrs (Standard: Telcordia SR332)

M-1600: 16 digital inputs, sink type, 24 VDC

Digital Inputs: 16 channels
Type: sink
On-state Voltage: 24 VDC nominal, 11 to 28.8 VDC
Off-state Voltage: 0 to 5 VDC
On-state Current: 6 mA/point @ 28.8 VDC (max.)
Input Impedance: 5.1 kilo-ohms (typical)
Filtering Time: 1.5 ms (typical)
Common Type: 16 channels for 2 COMs (single common)
Input Current: 40 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O flat cable 20-pin
MTBF: 11,659,560 hrs (Standard: Telcordia SR332)

M-1601: 16 digital inputs, source type, 24 VDC

Digital Inputs: 16 channels
Type: source
On-state Voltage: 24 VDC nominal, 11 to 28.8 VDC
Off-state Voltage: 0 to 5 VDC
On-state Current: 6 mA/point @ 28.8 VDC (max.)
Input Impedance: 5.1 kilo-ohms (typical)
Filtering Time: 1.5 ms (typical)
Common Type: 16 channels for 2 COMs (single common)
Input Current: 40 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O flat cable 20-pin
MTBF: 11,694,600 hrs (Standard: Telcordia SR332)

M-1450: 4 digital inputs, 110 VAC

Digital Inputs: 4 channels, 110 VAC
On-state Voltage: 120 VAC nominal, 85 to 132 VAC
Off-state Voltage: 0 to 45 VAC
On-state Current: 8 mA/point @ 132 VAC (max.)
Input Impedance: 11 kilo-ohms (typical)
Common Type: 4 channels for 2 COMs (single common)
Input Current: 35 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 19,482,240 hrs (Standard: Telcordia SR332)

M-1451: 4 digital inputs, 220 VAC

Digital Inputs: 4 channels, 220 VAC
On-state Voltage: 240 VAC nominal, 170 to 264 VAC
Off-state Voltage: 0 to 45 VAC
On-state Current: 12 mA/point @ 264 VAC (max.)
Input Impedance: 22 kilo-ohms (typical)
Common Type: 4 channels for 2 COMs (single common)
Input Current: 35 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 19,727,520 hrs (Standard: Telcordia SR332)

Digital Output Modules

M-2800: 8 digital outputs, sink type, 24 VDC, 0.5 A

Digital Outputs: 8 channels
Type: sink
Output Range: 24 VDC nominal
On-state Voltage Drop: 0.3 VDC @ 25°C (max.)
On-state Current: 1 mA per channel (min.)
Off Leakage Current: 50 µA (max.)
Current Rating: 0.5 A per channel
Common Type: 8 channels per external common (single common)
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 13,884,600 hrs (Standard: Telcordia SR332)

M-2801: 8 digital outputs, source type, 24 VDC, 0.5 A

Digital Outputs: 8 channels
Type: source
Output Range: 24 VDC nominal
On-state Voltage Drop: 0.3 VDC @ 25°C (max.)
On-state Current: 1 mA per channel (min.)
Off Leakage Current: 50 µA (max.)
Current Rating: 0.5 A per channel
Common Type: 8 channels per external common (single common)
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 14,340,120 hrs (Standard: Telcordia SR332)

M-2600: 16 digital outputs, sink type, 24 VDC, 0.3 A

Digital Outputs: 16 channels
Type: sink
Output Range: 24 VDC nominal
On-state Voltage Drop: 0.3 VDC @ 25°C (max.)
On-state Current: 1 mA per channel (min.)
Off Leakage Current: 50 µA (max.)
Current Rating: 0.5 A per channel
Common Type: 8 channels per external common (single common)
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O flat cable 20-pin
MTBF: 9,732,360 hrs (Standard: Telcordia SR332)

M-2601: 16 digital outputs, source type, 24 VDC, 0.3 A

Digital Outputs: 16 channels
Type: source
Output Range: 24 VDC nominal
On-state Voltage Drop: 0.3 VDC @ 25°C (max.)
On-state Current: 1 mA per channel (min.)
Off Leakage Current: 50 µA (max.)
Current Rating: 0.5 A per channel
Common Type: 8 channels per external common (single common)
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O flat cable 20-pin
MTBF: 9,749,880 hrs (Standard: Telcordia SR332)

Analog Input Modules

M-3802: 8 analog inputs, 4 to 20 mA, 12 bits

Analog Inputs: 8 channels
Resolution in Ranges: 12 bits, 3.91 µA/bit
Input Current Range: 4 to 20 mA (single-ended)
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Input Impedance: 120 ohms
Conversion Time: 4 ms for all channels
Input Current: 80 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 7,375,920 hrs (Standard: Telcordia SR332)

M-3810: 8 analog inputs, 0 to 10 V, 12 bits

Analog Inputs: 8 channels
Resolution in Ranges: 12 bits, 2.44 mV/bit
Input Current Range: 0 to 10 VDC (single-ended)
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Input Impedance: 500 kilo-ohms
Conversion Time: 4 ms for all channels
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 7,288,320 hrs (Standard: Telcordia SR332)

Analog Output Modules

M-4402: 4 analog outputs, 4 to 20 mA, 12 bits

Analog Outputs: 4 channels
Resolution in Ranges: 12 bits, 3.91 µA/bit
Output Current Range: 4 to 20 mA (single-ended)
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Output Impedance: 500 ohms (max.)
Conversion Time: 2 ms for all channels
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 7,840,200 hrs (Standard: Telcordia SR332)

M-4410: 4 analog outputs, 0 to 10 V, 12 bits

Analog Outputs: 4 channels
Resolution in Ranges: 12 bits, 2.44 mV/bit
Output Current Range: 0 to 10 VDC (single-ended)
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Output Impedance: 5 kilo-ohms (max.)
Conversion Time: 2 ms for all channels
Input Current: 60 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 6,219,600 hrs (Standard: Telcordia SR332)

Temperature Input Modules

M-6200: 2 analog inputs, RTD: PT100, JPT100

RTDs: 2 channels
Sensor Types:
• PT50, PT100, PT200, PT500, PT1000 (resistance 100 milli-ohms/bit)
• JPT100, JPT200, JPT500, JPT1000 (resistance 10 milli-ohms/bit)
• NI100, NI200, NI500, NI1000, NI120, CU10 (resistance 20 milli-ohms/bit)
Resolution: 0.1°C per 10 milli-ohms
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Input Impedance: 500 kilo-ohms
Conversion Time: 200 ms for all channels
Diagnostics: Range over (if range over, data=Dx8000)
Input Current: 80 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 3,644,160 hrs (Standard: Telcordia SR332)

M-6201: 2 analog inputs, thermocouple

Thermocouples: 2 channels
Sensor Types: Type J/K/T/E/R/S/B/N/L/U/C/D (mV input 10 µV/bit, 2 µV/bit)
Resolution: 0.1°C/10 µV
Data Format: 16-bit integer (2's complement)
Accuracy:
• ±0.1%, FSR @ 25°C
• ±0.3%, FSR @ 0°C, 60°C
Input Impedance: 500 kilo-ohms
Conversion Time: 200 ms for all channels
Diagnostics: Range over (if range over, data=Dx8000)
Input Current: 80 mA @ 5 VDC
Isolation: I/O to logic (photocoupler isolation)
Wiring: I/O cable max. 14 AWG
MTBF: 3,828,120 hrs (Standard: Telcordia SR332)

Power Modules

M-7001: System power module

System Input Voltage: 24 VDC, 11 to 28.8 VDC
Field Power Input Voltage: 24 VDC (±20%)
Current for I/O Modules: 1.5 A @ 5 VDC (max.)
System Bus Output Voltage: 5 VDC (max.)
Field Power Contacts Current: 10 A (max.)
MTBF: 19,569,840 hrs (Standard: Telcordia SR332)

M-7002: Field power module

Field Power Input Voltage:
• DC: 5 VDC, 24 VDC, 48 VDC
• AC: 110 VAC, 220 VAC
Current for Field Power Contacts: 10 A (max.)
MTBF: 75,528,720 hrs (Standard: Telcordia SR332)

M-7804: 0 VDC

Channels: 8
Mode: 0 VDC
MTBF: 73,750,440 hrs (Standard: Telcordia SR332)

M-7805: 24 VDC

Channels: 8
Mode: 24 VDC
MTBF: 73,750,440 hrs (Standard: Telcordia SR332)

Modular I/O Accessories

TB 1600: Screw-locking terminal block with 20-pin connector for DIN-rail mounts

Pins: 20 pins, one-to-one assignment
Connector Pitch: 3.81 mm
Mounting Type: DIN-rail
Dimensions: 77.5 x 67.5 x 51 mm
(3.05 x 2.66 x 2.01 in)
Compliance: RoHS compliant

Cable: 20-to-20-pin flat cable

Usage: Connects between the TB 1600 and ioLogik 4000 series
Length: 500 mm
Number of Pins: 20

M-8001-PK: Removable terminal block

Usage: Terminal block for the ioLogik 4000 series
Packaging: 9 pcs in one box

Markers: For the ioLogik 4000 series

M-8003-PK: Markers with 0 to 9 numbering; 100 pcs per box
M-8004-PK: Blank markers; 100 pcs per box

Ordering Information

Available Models

M-1800: Modular remote I/O module with 8 DIs, sink type, 24 VDC, RTB, -10 to 60°C operating temperature
M-1801: Modular remote I/O module with 8 DIs, source type, 24 VDC, RTB, -10 to 60°C operating temperature
M-1600: Modular remote I/O module with 16 DIs, sink type, 24 VDC, 20-pin, -10 to 60°C operating temperature
M-1601: Modular remote I/O module with 16 DIs, source type, 24 VDC, 20-pin, -10 to 60°C operating temperature
M-1450: Modular remote I/O module with 4 DIs, 110 VAC, RTB, -10 to 60°C operating temperature
M-1451: Modular remote I/O module with 4 DIs, 220 VAC, RTB, -10 to 60°C operating temperature
M-2800: Modular remote I/O module with 8 DOs, sink type, 24 VDC, RTB, -10 to 60°C operating temperature
M-2801: Modular remote I/O module with 8 DOs, source type, 24 VDC, RTB, -10 to 60°C operating temperature
M-2600: Modular remote I/O module with 16 DOs, sink type, 24 VDC, 20-pin, -10 to 60°C operating temperature
M-2601: Modular remote I/O module with 16 DOs, source type, 24 VDC, 20-pin, -10 to 60°C operating temperature
M-2450: Modular remote I/O module with 4 relays, 230 VAC/24 VDC, RTB, -10 to 60°C operating temperature
M-3802: Modular remote I/O module with 8 AIs, 4 to 20 mA, RTB, -10 to 60°C operating temperature
M-3810: Modular remote I/O module with 8 AIs, 0 to 10 VDC, RTB, -10 to 60°C operating temperature
M-4402: Modular remote I/O module with 4 AOs, 4 to 20 mA, RTB, -10 to 60°C operating temperature
M-4410: Modular remote I/O module with 4 AOs, 0 to 10 VDC, RTB, -10 to 60°C operating temperature
M-6200: Modular remote I/O module with 2 RTDs, RTB, -10 to 60°C operating temperature
M-6201: Modular remote I/O module with 2 TCs, RTB, -10 to 60°C operating temperature
M-7001: Modular remote I/O module with 24 VDC system power input, RTB, -10 to 60°C operating temperature
M-7002: Modular remote I/O module with 5/24/48 VDC or 110/220 VAC field power input, RTB, -10 to 60°C operating temperature
M-7804: Modular remote I/O module with 8 channels 0 VDC output, RTB, -10 to 60°C operating temperature
M-7805: Modular remote I/O module with 8 channels 24 VDC output, RTB, -10 to 60°C operating temperature

Optional Accessories

TB 1600: Screw-locking terminal block with 20-pin connector for DIN-rail mounting
20-to-20-pin flat cable: 20-pin to 20-pin flat cable, 500 mm
M-8001-PK: Removable terminal block, 9 pcs per pack
M-8003-PK: Marker with 0 to 9 numbering, white color, 100 pcs
M-8004-PK: Black marker, 100 pcs