ioLogik E1200 Series

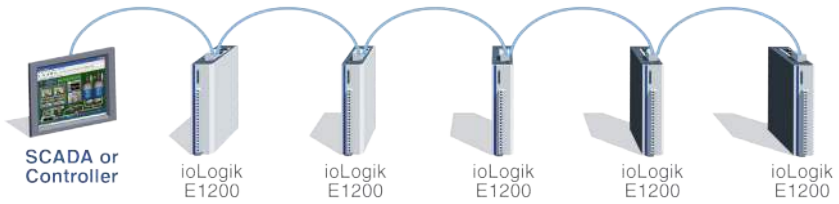
Ethernet remote I/O with 2-port Ethernet switch

- Active communication with patented MX-AOPC UA Server and Active OPC Server
- 2 switched Ethernet ports for daisy-chain topologies
- Easy mass deployment and configuration with ioSearch utility
- Friendly configuration via web browser
- Save time and wiring costs with peer-to-peer communication
- User-defined Modbus/TCP addressing
- MXIO library for simplified I/O management on either Windows or Linux platforms
- Wide operating temperature: -40 to 75°C (-40 to 167°F)
- Supports SNMPv1/v2c
- UL/cUL Class I Division 2, ATEX Zone 2 certifications

Introduction

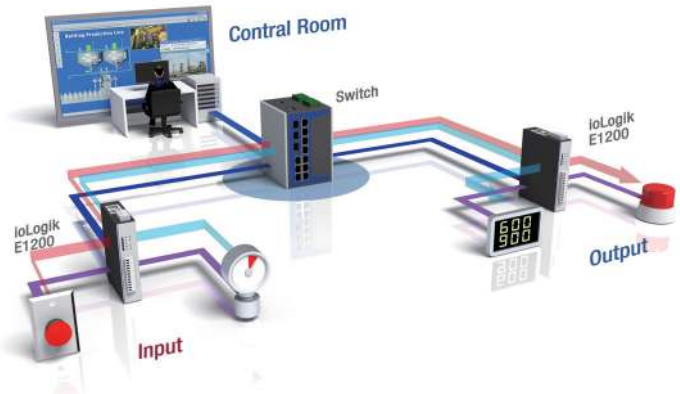
Daisy-chained Ethernet I/O Connection

A new era of extensibile 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 multi-drop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multi-drop 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 total expenses.



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

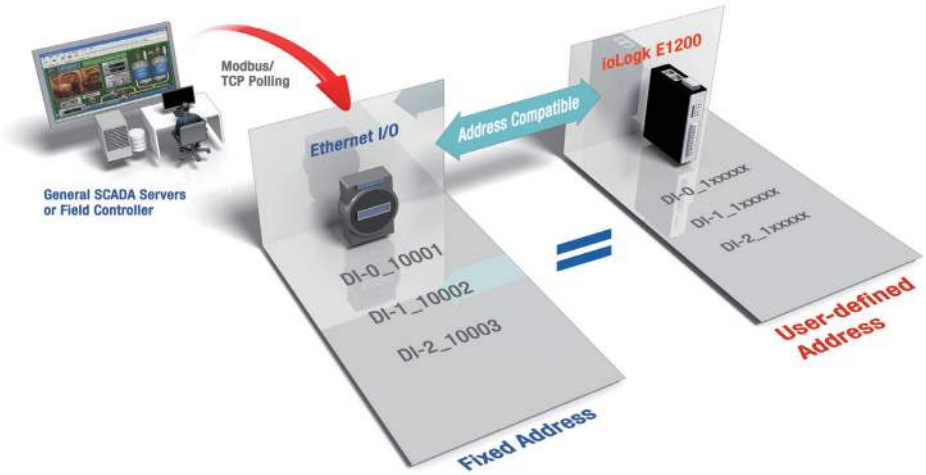
In remote automation applications, the control room and sensors are often far removed, making wiring over long distances a constant challenge. With peer-to-peer networking, users may now map a pair of ioLogik E1200 series modules so that input values will be directly transferred to output channels, greatly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

Power Consumption: 110 mA @ 24 VDC

MTBF (mean time between failures)

Time: 671,345 hrs
Database: Telcordia (Bellcore)

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

Power Consumption: 208 mA @ 24 VDC

MTBF (mean time between failures)

Time: 923,027 hrs
Database: Telcordia (Bellcore)

ioLogik E1212 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DI/Os: 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

Power Consumption: 155 mA @ 24 VDC

MTBF (mean time between failures)

Time: 561,930 hrs
Database: Telcordia (Bellcore)

ioLogik E1213 Specifications

Inputs and Outputs
Digital Inputs: 8 channels
Digital Outputs: 4 channels
Digital Input/Output (configurable by jumper): 4 channels
Isolation: 3k VDC or 2k Vrms

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 (DI to COM):
• On: 10 to 30 VDC
• Off: 0 to 3 VDC
Common Type: 12 points per COM
Counter/Frequency: 250 Hz, power off storage

Digital Output
I/O Mode: DO or Pulse Output
I/O Type: Source
Current: 500 mA per channel
Voltage: 15 to 30 VDC (12 or 9 VDC configurable by jumper on the 4 DO channels)
Pulse Wave Width/Frequency: 1 ms/500 Hz
Over-Voltage Protection: 41 VDC
Over-Current Limit: 1.5 A per channel @ 25°C
Over-Temperature Shutdown: 175°C (typical), 150°C (min.)
Output Current Rating: 1.5 A per channel

Power Requirements
Power Input: 24 VDC nominal, 12 to 36 VDC
Power Consumption: 130 mA typical @ 24 VDC

ioLogik E1214 Specifications

Inputs and Outputs
Digital Inputs: 6 channels
Relay Outputs: 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 Output
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 M ohms (min.) @ 500 VDC
Mechanical Endurance: 5,000,000 operations
Electrical Endurance: 100,000 operations @ 5 A resistive load
Contact Resistance: 100 m 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° Celsius.

Power Requirements
Power Consumption: 188 mA @ 24 VDC

MTBF (mean time between failures)
Time: 808,744 hrs
Database: Telcordia (Bellcore)

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
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA
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: 10M ohms (min.)
Built-in Resistor for Current Input: 120 ohms

Power Requirements
Power Consumption: 121 mA @ 24 VDC

MTBF (mean time between failures)
Time: 474,053 hrs
Database: Telcordia (Bellcore)

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
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
Power Consumption: 194 mA @ 24 VDC

MTBF (mean time between failures)
Time: 888,656 hrs
Database: Telcordia (Bellcore)

ioLogik E1242 Specifications

Inputs and Outputs
Analog Inputs: 4 channels
Digital Inputs: 4 channels
Configurable DI/Os: 4 channels
Isolation: 3k VDC or 2k Vrms

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current
Input Range: 0 to 10 VDC, 0 to 20 mA, 4 to 20 mA
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: 10M ohms (min.)
Built-in Resistor for Current Input: 120 ohms

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

Power Requirements
Power Consumption: 139 mA @ 24 VDC

MTBF (mean time between failures)
Time: 502,210 hrs
Database: Telcordia (Bellcore)

ioLogik E1260 Specifications

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

RTD Inputs
Input 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: 625k ohms

Power Requirements
Power Consumption: 110 mA @ 24 VDC

MTBF (mean time between failures)
Time: 660,260 hrs
Database: Telcordia (Bellcore)

ioLogik E1262 Specifications

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

Thermocouple Input
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: 10M ohms

Power Requirements
Power Consumption: 118 mA @ 24 VDC

MTBF (mean time between failures)
Time: 631,418 hrs
Database: Telcordia (Bellcore)

Common Specifications

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

Power Requirements
Power Input: 24 VDC nominal, 12 to 36 VDC

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
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)
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
EMI:
EN 55022; EN 61000-3-2; EN 61000-3-3;
FCC Part 15, Subpart B, Class A

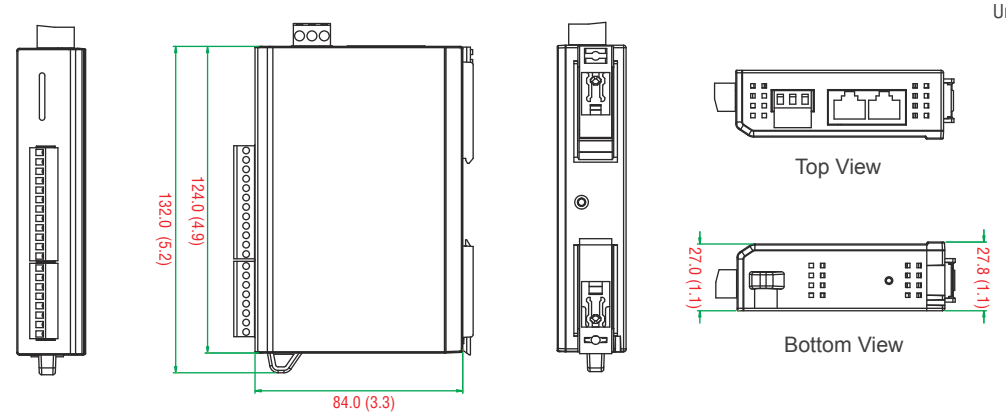
EMS:
EN 55024, EN 61000-4-2, EN 61000-4-3,
EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
EN 61000-4-8, EN 61000-4-11
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Green Product: RoHS, CRoHS, WEEE
Hazardous Location: UL/cUL Class I Diision 2, ATEX Zone 2

Warranty

Warranty Period: 5 years (excluding 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 switches, 16 DIs, -10 to 60°C operating temperature
ioLogik E1210-T: Ethernet remote I/O with 2-port Ethernet switches, 16 DIs, -40 to 75°C operating temperature
ioLogik E1211: Ethernet remote I/O with 2-port Ethernet switches, 16 DOs, -10 to 60°C operating temperature
ioLogik E1211-T: Ethernet remote I/O with 2-port Ethernet switches, 16 DOs, -40 to 75°C operating temperature
ioLogik E1212: Ethernet remote I/O with 2-port Ethernet switches, 8 DIs, 8 DI/Os, -10 to 60°C operating temperature
ioLogik E1212-T: Ethernet remote I/O with 2-port Ethernet switches, 8 DIs, 8 DI/Os, -40 to 75°C operating temperature
ioLogik E1213: Ethernet remote I/O with 2-port Ethernet switches, 8 DIs, 4 source DOs, 4 source DI/Os, -10 to 60°C operating temperature
ioLogik E1213-T: Ethernet remote I/O with 2-port ethernet switches, 8 DIs, 4 source DOs, 4 source DI/Os, -40 to 75°C operating temperature
ioLogik E1214: Ethernet remote I/O with 2-port Ethernet switches, 6 DIs, 6 Relays, -10 to 60°C operating temperature
ioLogik E1214-T: Ethernet remote I/O with 2-port Ethernet switches, 6 DIs, 6 Relays, -40 to 75°C operating temperature
ioLogik E1240: Ethernet remote I/O with 2-port Ethernet switches, 8 AIs, -10 to 60°C operating temperature
ioLogik E1240-T: Ethernet remote I/O with 2-port Ethernet switches, 8 AIs, -40 to 75°C operating temperature
ioLogik E1241: Ethernet remote I/O with 2-port Ethernet switches, 4 AOs, -10 to 60°C operating temperature
ioLogik E1241-T: Ethernet remote I/O with 2-port Ethernet switches, 4 AOs , -40 to 75°C operating temperature
ioLogik E1242: Ethernet remote I/O with 2-port Ethernet switches, 4 AIs, 4 DIs, 4 DI/Os, -10 to 60°C operating temperature
ioLogik E1242-T: Ethernet remote I/O with 2-port Ethernet switches, 4 AIs, 4 DIs, 4 DI/Os, -40 to 75°C operating temperature
ioLogik E1260: Ethernet remote I/O with 2-port Ethernet switches, 6 RTDs, -10 to 60°C operating temperature
ioLogik E1260-T: Ethernet remote I/O with 2-port Ethernet switches, 6 RTDs, -40 to 75°C operating temperature
ioLogik E1262: Ethernet remote I/O with 2-port Ethernet switches, 8 TCs, -10 to 60°C operating temperature
ioLogik E1262-T: Ethernet remote I/O with 2-port Ethernet switches, 8 TCs, -40 to 75°C operating temperature

Package Checklist

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