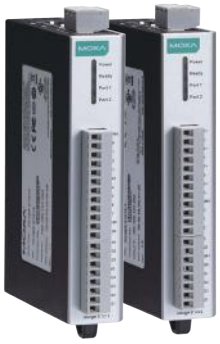
ioLogik E1200 Series

Ethernet remote I/O with 2-port Ethernet switch



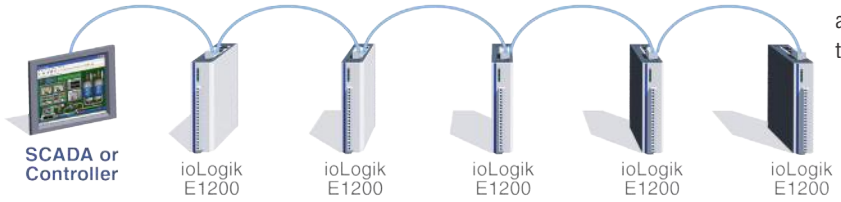
- User-definable Modbus/TCP Slave addressing
- Supports EtherNet/IP* adapter mode
- Supports RESTful API for IIoT applications
- 2-port Ethernet switch for daisy-chain topologies
- Save time and wiring cost with peer-to-peer communications
- Active communications with MX-AOPC UA Server
- Supports SNMPv1/v2c
- 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)

*Requires online registration (available free of charge)

Introduction

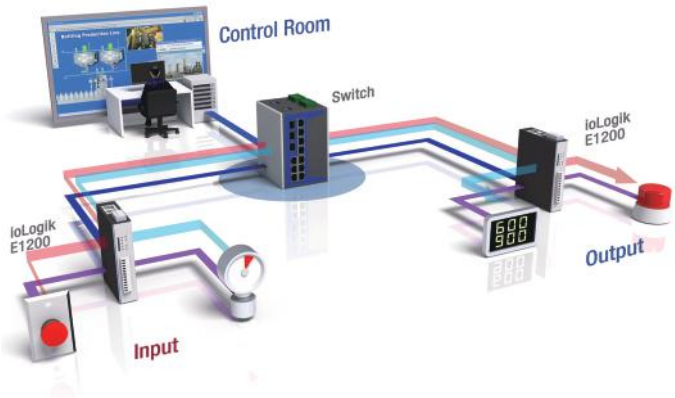
Daisy-Chained Ethernet I/O Connection

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.



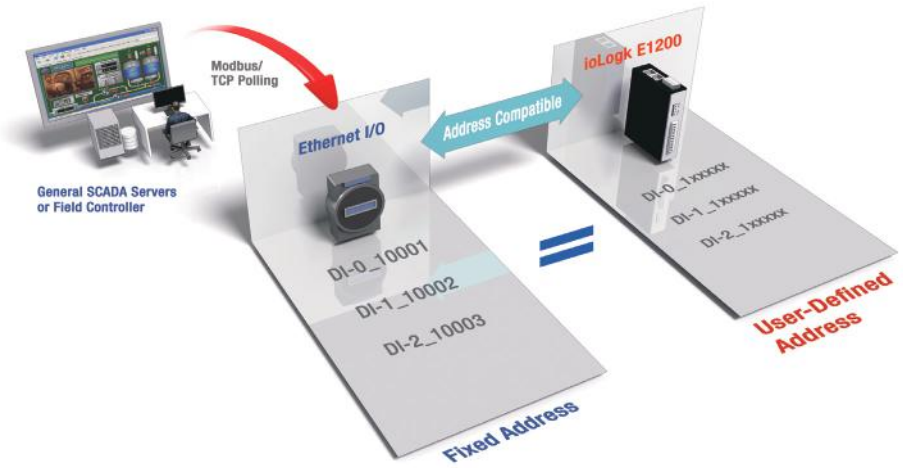
Save Time and Wiring Costs with Peer-to-Peer Communications

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
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.
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

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), EtherNet/IP*, SNMPv1/v2c, RESTful API, TCP/IP, UDP, DHCP, BOOTP, HTTP
*Requires online registration at http://www.moxa.com/Event/DAC/2016/Smart_EIP_IO/index.htm (available free of charge)

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

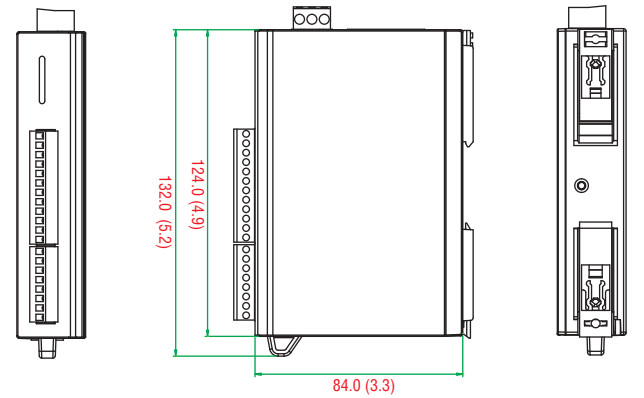
Safety: UL 508
EMC: EN 55032, EN 55024, EN 61000-3-2/3-3, EN 61000-6-2/6-4
EMI: CISPR 32, FCC Part 15B Class A
EMS:
IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m
IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV
IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV
IEC 61000-4-6 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
- Quick installation guide (printed)