

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

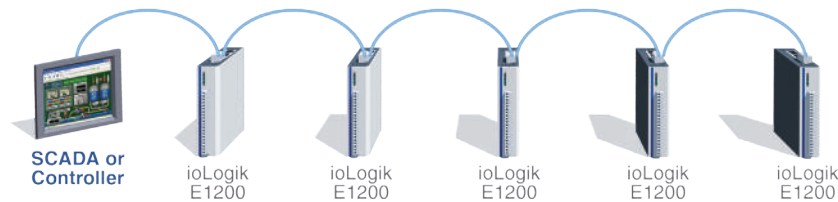


Introduction

Daisy-chained Ethernet I/O Connection

A new era of 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 multi-drop I/O networks over standard Ethernet cables. Many industrial automation users are familiar with multi-drop as the configuration

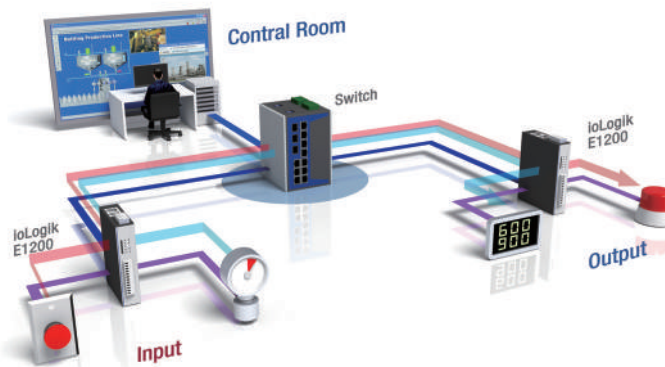
most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik E1200 Ethernet remote I/O units not only increase the extensibility and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches. 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

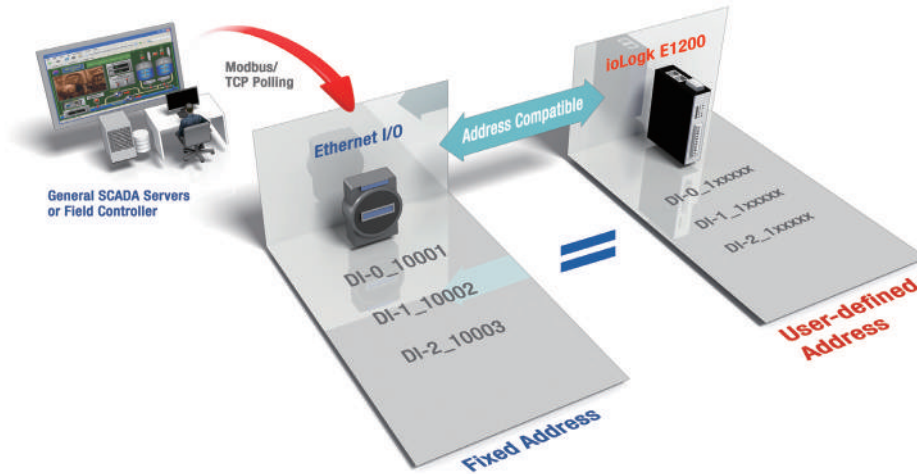
of ioLogik E1200 series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



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 Division 2, ATEX Zone 2

Warranty

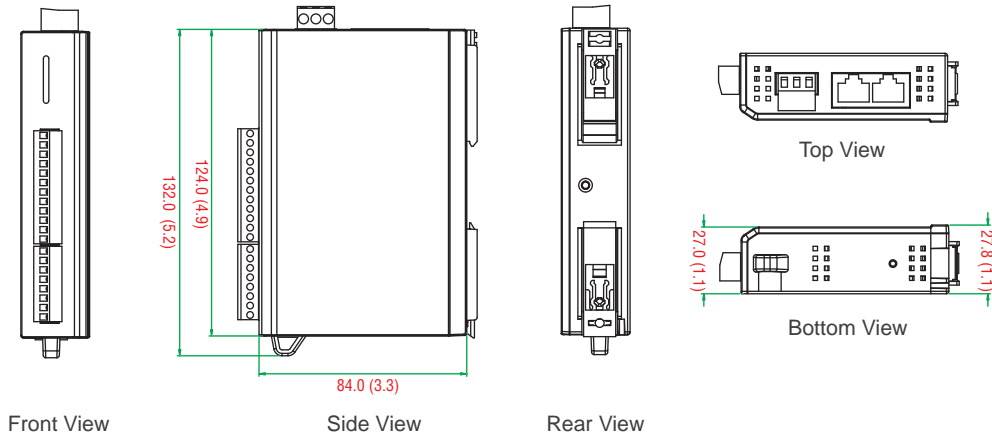
Warranty Period: 5 years (excluding ioLogik E1214)

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)