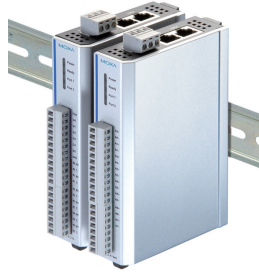


# ioLogik E1200 Series

## Ethernet remote I/O with 2-port Ethernet switches



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

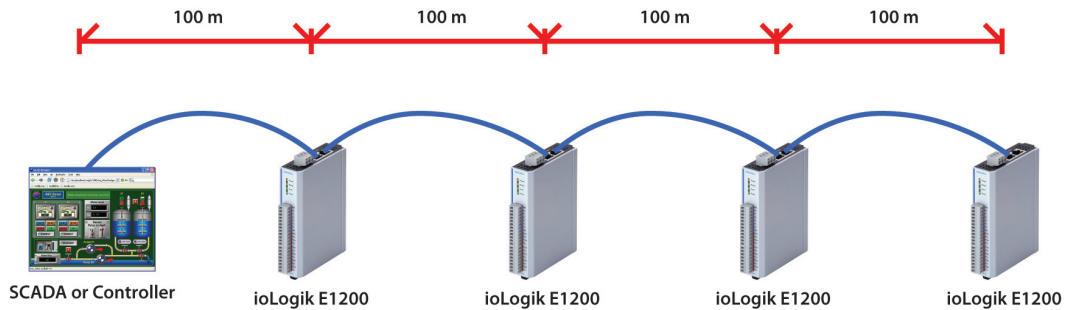


### Introduction

#### Daisy-chained Ethernet I/O Connection

A new daisy-chained Ethernet I/O concept is now available. The ioLogik E1200 industrial Ethernet remote I/O has two embedded Ethernet switch ports that allow information to flow to another local Ethernet switch device or connect to the next ioLogik in the daisy-chain. Applications such as factory automation, security and surveillance systems, and tunnel monitoring, 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

typically used in fieldbus applications. The daisy-chain function on the ioLogik E1200 Ethernet remote I/O not only increases the connections between machines and panels, but also lowers the cost of buying separate Ethernet switches, and at the same time reduces labor fees and cabling by a large percentage. For example, if a production facility contains 700 stations (20 points per station), the wiring cost reduction can reach 15% of the total implementation cost.



#### ioLogik E1200 Series Selection Table

Models	I/O Combinations							
	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs	RTD Inputs	TC Inputs	Relay Outputs	Configurable DIOs
ioLogik E1210	16	–	–	–	–	–	–	–
ioLogik E1211	–	16	–	–	–	–	–	–
ioLogik E1212	8	–	–	–	–	–	–	8
ioLogik E1213	8	4	–	–	–	–	–	4
ioLogik E1214	6	–	–	–	–	–	6	–
ioLogik E1240	–	–	8	–	–	–	–	–
ioLogik E1241	–	–	–	4	–	–	–	–
ioLogik E1242	4	–	4	–	–	–	–	4
ioLogik E1260	–	–	–	–	6	–	–	–
ioLogik E1262	–	–	–	–	–	8	–	–

## 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:

NPN (DI to GND):

- On: 0 to 3 VDC
- Off: 10 to 30 VDC

PNP (DI to GND):

- Off: 0 to 3 VDC
- On: 10 to 30 VDC

**Common Type:** 8 points per COM

**Counter Frequency:** 250 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

### 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 DIOs:** 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:

NPN (DI to GND):

- On: 0 to 3 VDC
- Off: 10 to 30 VDC

PNP (DI to GND):

- Off: 0 to 3 VDC
- On: 10 to 30 VDC

**Common Type:** 8 points per COM

**Counter Frequency:** 250 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

### 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:**

- Logic 0: short to GND

- Logic 1: open

**Wet Contact:**

- Logic 0: 0 to 3 VDC

- Logic 1: 10 to 30 VDC (DI COM to DI)

**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:**

NPN (DI to GND):

- On: 0 to 3 VDC

- Off: 10 to 30 VDC

PNP (DI to GND):

- Off: 0 to 3 VDC

- On: 10 to 30 VDC

**Common Type:** 6 points per COM

**Counter Frequency:** 250 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

### 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 DIOs:** 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:

**NPN (DI to GND):**  
• On: 0 to 3 VDC  
• Off: 10 to 30 VDC  
**PNP (DI to GND):**  
• Off: 0 to 3 VDC  
• On: 10 to 30 VDC

**Common Type:** 4 points per COM

**Counter Frequency:** 250 Hz, power off storage

**Digital Filtering Time Interval:** Software selectable

### 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

**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 x 10/100 Mbps switch ports, RJ45

**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

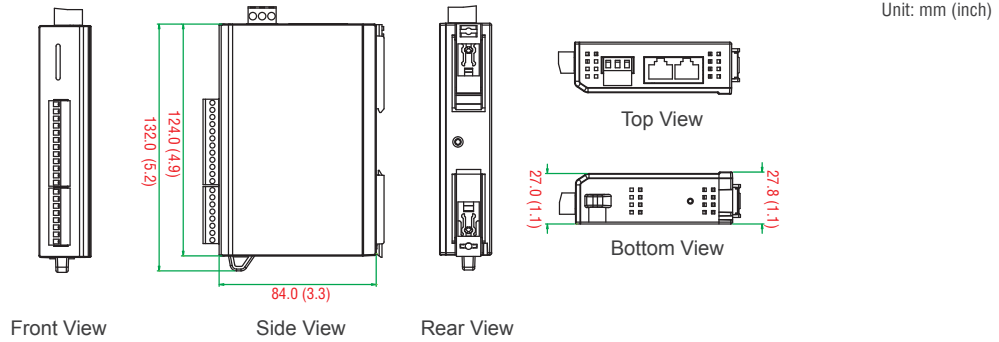
### Warranty

**Warranty Period:** 5 years (excluding ioLogik E1214)

**Details:** See [www.moxa.com/warranty](http://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



## 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 DI0s, -10 to 60°C operating temperature

**ioLogik E1212-T:** Ethernet remote I/O with 2-port Ethernet switches, 8 DIs, 8 DI0s, -40 to 75°C operating temperature

**ioLogik E1213:** Ethernet remote I/O with 2-port Ethernet switches, 8 DIs, 4 source DOs, 4 source DI0s, -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 DI0s, -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 DI0s, -10 to 60°C operating temperature

**ioLogik E1242-T:** Ethernet remote I/O with 2-port Ethernet switches, 4 AIs, 4 DIs, 4 DI0s, -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)