

# ioLogik E1200 Series

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



- > Built-in 2-port Ethernet switch for daisy-chain topologies
- > Free support of Moxa's push-based Active OPC Server Lite
  - Seamlessly connect to any SCADA system
  - Save 80% on network bandwidth
  - I/O response that's 7 times faster
- > User-defined Modbus/TCP addressing
- > I/O peer-to-peer function
- > MXIO programming library for Windows and WinCE VB/VC.NET and Linux C APIs
- > Web configuration with Import/Export function

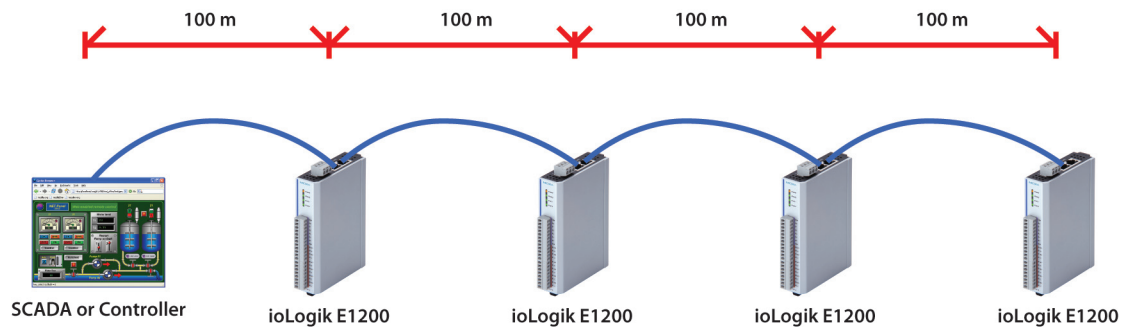


### Introduction

#### 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 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 the multi-drop configuration

typically used in fieldbus applications. The daisy-chain function on the Ethernet remote I/O ioLogik E1200 not only increases the connection 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 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

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP), Dry Contact

**I/O Mode:** DI or Event Counter

### Dry Contact:

- Logic 0 (On): short to GND
- Logic 1 (Off): open

### Wet Contact:

• Logic 0 (On): 0 to 3 VDC

• Logic 1 (Off): 10 to 30 VDC

**Isolation:** 3K VDC or 2K Vrms

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

### 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

### Digital Output

**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

**Isolation:** 3K VDC or 2K Vrms

### Power Requirements

**Power Consumption:** 208 mA @ 24 VDC

**MTBF** (mean time between failures)

**Time:** 221,662 hrs

**Database:** Telcordia (Bellcore)

## ioLogik E1212 Specifications

### Inputs and Outputs

**Digital Inputs:** 8 channels

**Configurable DIOs:** 8 channels

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP), Dry Contact

**I/O Mode:** DI or Event Counter

### Dry Contact:

- Logic 0 (On): short to GND
- Logic 1 (Off): open

### Wet Contact:

- Logic 0 (On): 0 to 3 VDC
- Logic 1 (Off): 10 to 30 VDC

**Isolation:** 3K VDC or 2K Vrms

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

### Digital Output

**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

**Isolation:** 3K VDC or 2K Vrms

### Power Requirements

**Power Consumption:** 155 mA @ 24 VDC

**MTBF** (mean time between failures)

**Time:** 179,098 hrs

**Database:** Telcordia (Bellcore)

## ioLogik E1214 Specifications

### Inputs and Outputs

**Digital Inputs:** 6 channels

**Digital Outputs:** 6 channels

### Digital Input

**Sensor Type:** Wet Contact (NPN or PNP), Dry Contact

**I/O Mode:** DI or Event Counter

### Dry Contact:

- Logic 0 (On): short to GND
- Logic 1 (Off): open

### Wet Contact:

- Logic 0 (On): 0 to 3 VDC
- Logic 1 (Off): 10 to 30 VDC

**Isolation:** 3K VDC or 2K Vrms

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

### Relay Output

**Type:** Form A (N.O.) relay outputs, 5A

**Contact Rating:** 5 A @ 30 VDC, 5 A @ 250 VAC, 5 A @ 110 VAC

**Inductance Load:** 2 A

**Resistance Load:** 5 A

**Breakdown Voltage:** 500 VAC

**Relay On/Off Time:** 1500 ms (Max.)

**Initial Insulation Resistance:** 1G min. @ 500 VDC

**Expected Life:** 100,000 times (Typical)

**Initial Contact Resistance:** 30 milli-ohms (Max.)

**Pulse Output:** 0.3 Hz at rated load

### 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

### Analog Input

**Type:** Differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current

**Input Range:** 0 to 10 VDC, 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

**Input Impedance:** 10M ohms (minimum)

**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

### 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 power: 400 ohms

- External 24V power: 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 DI0s:** 4 channels

### Analog Input

**Type:** Differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current

**Input Range:** 0 to 10 VDC, 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

**Input Impedance:** 10M ohms (minimum)

**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:**

- Logic 0 (On): short to GND

- Logic 1 (Off): open

**Wet Contact:**

- Logic 0 (On): 0 to 3 VDC

- Logic 1 (Off): 10 to 30 VDC

**Isolation:** 3K VDC or 2K Vrms

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

### Digital Output

**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

**Isolation:** 3K VDC or 2K Vrms

### 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

### RTD Inputs

**Input Type:** PT50, PT100, PT200, PT500, PT1000;

Resistance of 10 ohms, 20 ohms, and 100 ohms

**Sampling Rate:** 12 samples/sec (all channels)

**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

### Thermocouple Input

**Sensor Type:** J, K, T, E, R, S, B, N

**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:** 12 samples/sec (all channels)

**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

### 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)

### Standards and Certifications

**Safety:** UL 508

**EMI:** FCC Part 15 Subpart B Class A

**EMS:** IEC 61000-4, IEC 61000-6

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

*Note: Please check Moxa's website for the most up-to-date certification status.*

### Warranty

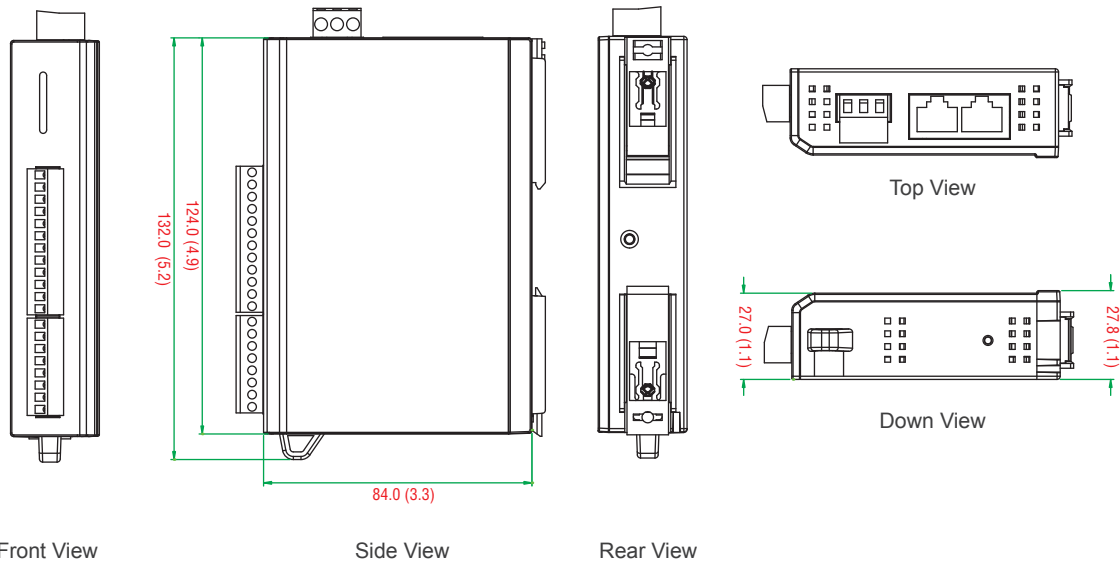
**Warranty Period:** 5 years (excluding ioLogik E1214)

**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

Unit: mm (inch)



## Ordering Information

### Available Models

- ioLogik E1210:** Ethernet remote I/O with 2-port Ethernet switch and 16 DIs
- ioLogik E1211:** Ethernet remote I/O with 2-port Ethernet switch and 16 DOs
- ioLogik E1212:** Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, and 8 DIOs
- ioLogik E1214:** Ethernet remote I/O with 2-port Ethernet switch, 6 DIs, and 6 Relays
- ioLogik E1240:** Ethernet remote I/O with 2-port Ethernet switch and 8 AIs
- ioLogik E1241:** Ethernet remote I/O with 2-port Ethernet switch and 4 AOs
- ioLogik E1242:** Ethernet remote I/O with 2-port Ethernet switch, 4 AIs, 4 DIs, and 4 DIOs
- ioLogik E1260:** Ethernet remote I/O with 2-port Ethernet switch and 6 RTDs
- ioLogik E1262:** Ethernet remote I/O with 2-port Ethernet switch and 8 TCs
- ioLogik E1210-T:** Ethernet remote I/O with 2-port Ethernet switch and 16 DIs, -40 to 75°C operating temperature
- ioLogik E1211-T:** Ethernet remote I/O with 2-port Ethernet switch and 16 DOs, -40 to 75°C operating temperature
- ioLogik E1212-T:** Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, and 8 DIOs, -40 to 75°C operating temperature
- ioLogik E1214-T:** Ethernet remote I/O with 2-port Ethernet switch, 6 DIs, and 6 Relays, -40 to 75°C operating temperature
- ioLogik E1240-T:** Ethernet remote I/O with 2-port Ethernet switch and 8 AIs, -40 to 75°C operating temperature
- ioLogik E1241-T:** Ethernet remote I/O with 2-port Ethernet switch and 4 AOs, -40 to 75°C operating temperature
- ioLogik E1242-T:** Ethernet remote I/O with 2-port Ethernet switch, 4 AIs, 4 DIs, and 4 DIOs, -40 to 75°C operating temperature
- ioLogik E1260-T:** Ethernet remote I/O with 2-port Ethernet switch and 6 RTDs, -40 to 75°C operating temperature
- ioLogik E1262-T:** Ethernet remote I/O with 2-port Ethernet switch and 8 TCs, -40 to 75°C operating temperature

### Package Checklist

- ioLogik E1210(-T) or E1211(-T) or E1212(-T) or E1214(-T) or E1240(-T) or E1241(-T) or E1242(-T) or E1260(-T) or E1262(-T)
- Documentation and software CD
- Quick installation guide (printed)