

# ioLogik E1200 Series

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



- > User-definable Modbus/TCP Slave addressing
- > 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)

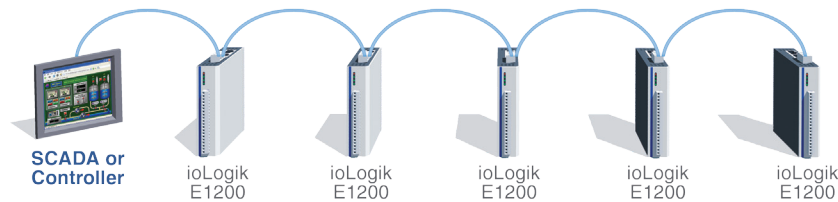


### Introduction

#### Daisy-Chain 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 tunneled 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

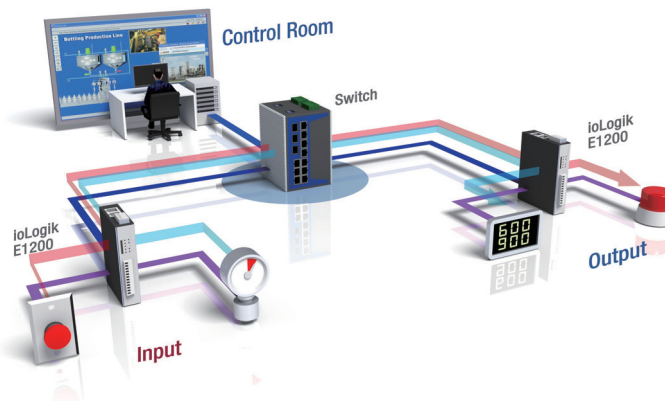
most typically used in fieldbus solutions. The daisy-chain capabilities supported by ioLogik E1200 Ethernet remote I/O units not only increase the extensibility and installation possibilities for your remote I/O applications, but also lower overall costs by reducing the need for separate Ethernet switches.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



#### 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

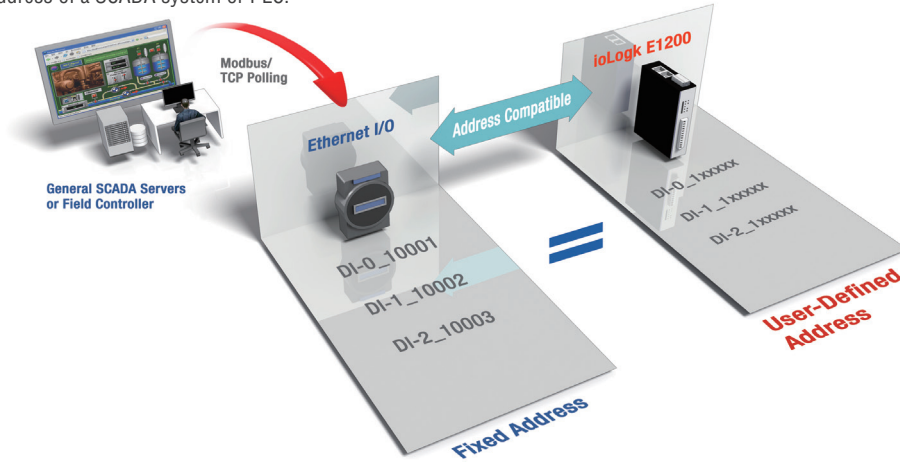
of ioLogik E1200 series modules so that input values will be directly transferred to output channels, greatly simplifying the wiring process and reducing wiring costs.



## 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

**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

**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

**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.

### 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), TCP/IP, UDP, DHCP, BOOTP, HTTP

### 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 55022, EN 55024

**EMI:** CISPR 22, 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.*

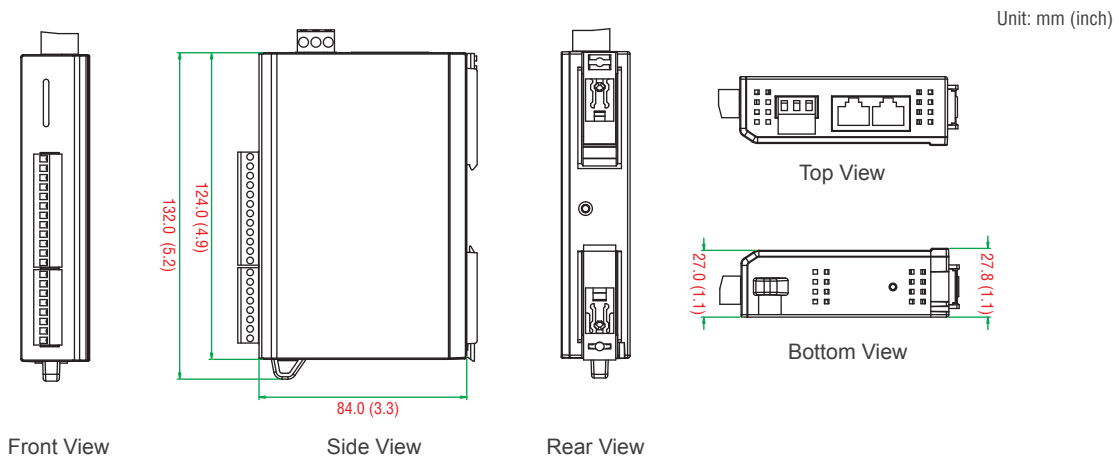
### Warranty

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

**Details:** See [www.moxa.com/warranty](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 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 DI/Os, -10 to 60°C operating temperature

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

**ioLogik E1213:** Ethernet remote I/O with 2-port Ethernet switch, 8 DIs, 4 DOs, 4 DI/Os, 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 DI/Os, 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 DI/Os, 4 AIs, -10 to 60°C operating temperature

**ioLogik E1242-T:** Ethernet remote I/O with 2-port Ethernet switch, 4 DIs, 4 DI/Os, 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
- Documentation and software CD
- Quick installation guide (printed)