

# ioLogik E2200 Series

*Smart Ethernet remote I/O with Click&GO Logic*



- > Front-end intelligence with patented Click&Go control logic, up to 24 rules
- > Active communication with MX-AOPC UA Server
- > Save time and wiring cost with peer-to-peer communication
- > Supports SNMPv1/v2c/v3
- > Friendly configuration via web browser
- > Simplify I/O management with MXIO library for Windows or Linux platforms
- > Wide operating temperature range of -40 to 75°C (-40 to 167°F)



## Introduction

Moxa's ioLogik E2200 Ethernet Remote I/O features the Click&Go programming interface. The ioLogik E2200 is a PC-based data acquisition and control device that uses proactive, event-based reporting to control I/O devices. Unlike traditional PLCs, which are passive and must poll for data, Moxa's ioLogik E2200 series will, when paired with our MX-AOPC UA Server, communicate with SCADA systems using active messaging that is pushed to the server only

when state changes or configured events occur. Additionally, the ioLogik E2200 features SNMP for communications and control using an NMS (Network Management System), allowing IT professionals to configure the device to push I/O status reports according to configured specifications. This report-by-exception approach, which is new to PC-based monitoring, requires far less bandwidth than traditional polling methods.

## PC-Free Alarm and Control Intelligence

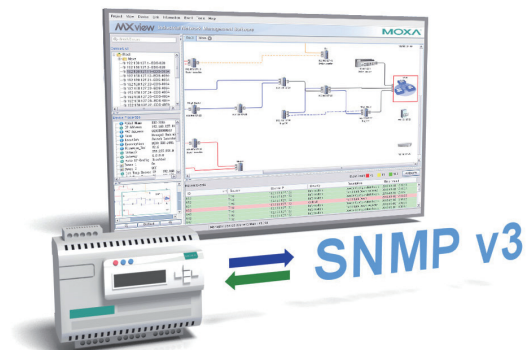
The ioLogik E2200 supports simple and powerful Click&Go™ technology to configure event-driven reports and alarms delivered over email, TCP/UDP, or SNMP traps, giving you a powerful effective, tool for delivering time-stamped status updates in real time.

With built-in Click&Go™ intelligence, the ioLogik E2200 can be configured for simple outputs paired up with simple input triggers without the need for a PC controller. This allows the ioLogik E2200 to be configured to automatically report I/O events according to user-specified conditions.



## SNMP Protocol for Ethernet Device Management

In addition to Modbus/TCP, the ioLogik E2200 supports both SNMP and CGI scripting, giving IT engineers familiar tools for controlling and monitoring I/O systems. By using SNMP, IT engineers can configure the ioLogik E2200 to deliver alarms (traps) for specific I/O events, or use it to read or write directly to the I/O registers. For the strongest security, the ioLogik E2200 features SNMP v3, with authentication and encryption. With Moxa's SNMP-capable ioLogik E2200, even IT professionals can easily integrate industrial sensors and servos over an Ethernet backbone, and with its strong network management tools the ioLogik E2200 is ideal for a wide variety of industrial applications, whether in environmental monitoring, telecommunications, power production and delivery, or transportation.



## Push Technology for Events and Alarms

The ioLogik E2200 series is designed for use with the Moxa's MX-AOPC UA server. When used with MX-AOPC UA Server, the E2200 is upgraded to use active push communications when communicating state changes and/or events to the SCADA system. Unlike a polling system, when using a push architecture for communications with the SCADA messages will only be delivered when state changes or configured events occur. Active messaging thus allows for big increases in data acquisition and control throughput while also delivering big reductions in network overhead.



## ioLogik E2210 Specifications

### Inputs and Outputs

**Digital Inputs:** 12 channels

**Digital Outputs:** 8 channels

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

### Digital Input

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

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

#### Dry Contact:

- On: short to GND
- Off: open

#### Wet Contact (DI to GND):

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

**Common Type:** 12 points per COM

**Counter Frequency:** 900 Hz

**Digital Filtering Time Interval:** Software Configurable

### Digital Output

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Pulse Output Frequency:** 1 kHz

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A (4 channels @ 650 mA)

**Over-Temperature Shutdown:** 175°C (min.)

**Current Rating:** 200 mA per channel

### Power Requirements

**Input Voltage:** 12 to 36 VDC

**Input Current:** 190 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 213,673 hrs

**Database:** Telcordia SR332

## ioLogik E2212 Specifications

### Inputs and Outputs

**Digital Inputs:** 8 channels

**Digital Outputs:** 8 channels

**Configurable DIOs:** 4 channels

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

### Digital Input

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

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

#### Dry Contact:

- On: short to GND
- Off: open

#### Wet Contact (DI to GND):

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

**Common Type:** 6 points per COM

**Counter Frequency:** 900 Hz

**Digital Filtering Time Interval:** Software Configurable

### Digital Output

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Pulse Output Frequency:** 1 kHz

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A (4 channels @ 650 mA)

**Over-Temperature Shutdown:** 175°C (min.)

**Current Rating:** 200 mA per channel

### Power Requirements

**Input Voltage:** 12 to 36 VDC

**Input Current:** 136 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 217,722 hrs

**Database:** Telcordia SR332

## ioLogik E2214 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) and Dry Contact

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

### Dry Contact:

- On: short to GND
- Off: open

### Wet Contact (DI to GND):

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

**Common Type:** 3 points per COM

**Counter Frequency:** 900 Hz

**Digital Filtering Time Interval:** Software Configurable

### Relay Output

**Type:** Form A (N.O.) power relay

### Contact Current Rating:

- Inductive Load: 2 A @ 30 VDC, 250 VAC, 110 VAC
- Resistive Load: 5 A @ 30 VDC, 250 VAC, 110 VAC

**Minimum permitted load:** 1 A @ 5 VDC

**Initial Insulation Resistance:** 1000 mega-ohms (min.) @ 500 VDC

**Mechanical Endurance:** 1,000,000 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 E2214 may malfunction when operating in high condensation environments below 0° Celsius.

### Power Requirements

**Input Voltage:** 12 to 36 VDC

**Input Current:** 170 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 307,239 hrs

**Database:** Telcordia SR332

## ioLogik E2240 Specifications

### Inputs and Outputs

**Analog Inputs:** 8 channels

**Analog Outputs:** 2 channels

### Analog Input

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

**Type:** Differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage/Current (software selectable)

**Input Range:** ±150 mV, ±500 mV, ±5 V, ±10 V, 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:

- 10 samples/sec for voltage
- 6 samples/sec for current

Per channel:

- 1.25 samples/sec for voltage
- 0.75 samples/sec for current

Single channel:

- 1.25 samples/sec for voltage
- 0.75 samples/sec for current

**Input Impedance:** 900 kilo-ohms ohms (min.)

**Built-in Resistor for Current Input:** 120 ohms

### Analog Output

**Resolution:** 12 bits

**Output Range:** 0 to 10 V, 4 to 20 mA

**Drive Voltage:** 15 VDC for current output

### Accuracy:

- ±0.1% FSR @ 25°C
- ±0.3% FSR @ -10 and 60°C
- ±0.5% FSR @ -40 and 75°C

**Load Resistor:** Less than 250 ohms

### Power Requirements

**Input Voltage:** 12 to 36 VDC

**Input Current:** 190 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 155,941 hrs

**Standard:** Telcordia SR332

## ioLogik E2242 Specifications

### Inputs and Outputs

**Configurable DI/Os (by software):** 12 channels

**Analog Inputs:** 4 channels

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

### Digital Input

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

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

### Dry Contact:

- On: short to GND
- Off: Open

### Wet Contact (DI to GND):

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

**Common Type:** 6 points per COM

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

**Counter Frequency:** 900 Hz

**Digital Filtering Time Interval:** Software selectable

### Digital Output

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Pulse Output Frequency:** 1 kHz

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A (4 channels @ 650 mA)

**Over-Temperature Shutdown:** 175°C (min.)

**Current Rating:** 200 mA per channel

### Analog Input

**Type:** Differential input

**Resolution:** 16 bits

**I/O Mode:** Voltage / Current (software selectable)

**Input Range:** ±150 mV, 0 to 150 mV, ±500 mV, 0 to 500 mV, ±5 V, 0 to 5 V, ±10 V, 0 to 10 V, 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: 32 samples/sec  
 Per channel: 8 samples/sec  
 Single channel: 100 samples/sec

**Input Impedance:** 200 kilo-ohms ohms (min.)

**Built-in Resistor for Current Input:** 120 ohms

**Power Requirements**

**Input Voltage:** 12 to 36 VDC

**Input Current:** 178 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 204,391 hrs

**Database:** Telcordia SR332

**: ioLogik E2260 Specifications**

**Inputs and Outputs**

**Digital Outputs:** 4 channels

**RTDs:** 6 channels

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

**Digital Output**

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Pulse Output Frequency:** 100 Hz

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A (4 channels @ 650 mA)

**Over-Temperature Shutdown:** 175°C

**Current Rating:** 200 mA per channel

**RTD**

**Sensor Type:** PT50, PT100, PT200, PT500, PT1000; JPT100, JPT200, JPT500, JPT1000; NI100, NI120, NI200, NI500, NI1000; 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

**Resolution:** 0.1°C or 0.1 ohm

**Accuracy:**

±0.1% FSR @ 25°C

±0.3% FSR @ -10 and 60°C

±0.5% FSR @ -40 and 75°C

**Input Impedance:** 625 kilo-ohms ohms

**Power Requirements**

**Input Voltage:** 12 to 36 VDC

**Input Current:** 95 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 327,282 hrs

**Standard:** Telcordia SR332

**: ioLogik E2262 Specifications**

**Inputs and Outputs**

**Digital Outputs:** 4 channels

**Thermocouples:** 8 channels

**Digital Output**

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

**Type:** Sink

**I/O Mode:** DO or Pulse Output

**Pulse Output Frequency:** 100 Hz

**Over-Voltage Protection:** 45 VDC

**Over-Current Protection:** 2.6 A (4 channels @ 650 mA)

**Over-Temperature Shutdown:** 175°C

**Current Rating:** 200 mA per channel

**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

**Resolution:** 16 bits

**Accuracy:**

±0.1% FSR @ 25°C

±0.3% FSR @ -10 and 60°C

±0.5% FSR @ -40 and 75°C

**Input Impedance:** 1 mega-ohm ohms

**Power Requirements**

**Input Voltage:** 12 to 36 VDC

**Input Current:** 160 mA @ 24 VDC

**MTBF (mean time between failures)**

**Time:** 341,063 hrs

**Database:** Telcordia SR332

**: Common Specifications**

**LAN**

**Ethernet:** 1 10/100 Mbps RJ45 port

**Protection:** 1.5 kV magnetic isolation

**Protocols:** Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, Sntp, SMTP

**Serial**

**Interface:** 1 RS-485-2w terminal block port

**Parity:** None

**Data Bits:** 8

**Stop Bits:** 1

**Flow Control:** None

**Baudrate:** 1200 to 115200 bps

**Protocols:** Modbus RTU (gateway)

**Physical Characteristics**

**Wiring:** I/O cable max. 14 AWG

**Dimensions:** 115 x 79 x 45.6 mm (4.53 x 3.11 x 1.80 in)

**Weight:** under 250 g (0.55 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 61000-6-2/6-4

**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: 10 V/m

1.4 GHz to 2 GHz: 3 V/m

2 GHz to 2.7 GHz: 1 V/m

IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV

IEC 61000-4-5 Surge: Power: 1 kV

IEC 61000-4-6 CS: 10 V

IEC 61000-4-8

**Green Product:** RoHS, CRoHS, WEEE

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

### Warranty

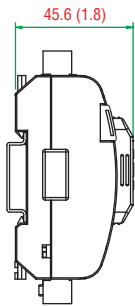
**Warranty Period:** 5 years (excluding ioLogik E2214\*)

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

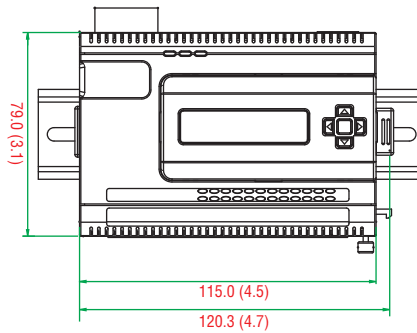
\*Because of the limited lifetime of power relays, products that use that component are covered by a 2-year warranty.

### Dimensions

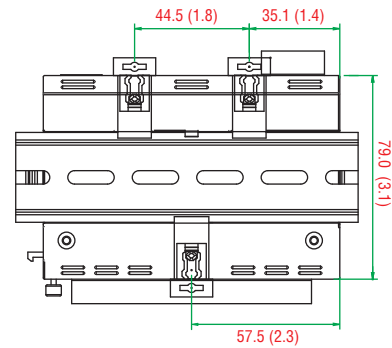
Unit: mm (inch)



Side View



Front View



Rear View

## Ordering Information

### Available Models

- ioLogik E2210:** Smart Ethernet Remote I/O with 12 DIs, 8 DOs, -10 to 60°C operating temperature
- ioLogik E2210-T:** Smart Ethernet Remote I/O with 12 DIs, 8 DOs, -40 to 75°C operating temperature
- ioLogik E2212:** Smart Ethernet Remote I/O with 8 DIs, 8 DOs, 4 DIOs, -10 to 60°C operating temperature
- ioLogik E2212-T:** Smart Ethernet Remote I/O with 8 DIs, 8 DOs, 4 DIOs, -40 to 75°C operating temperature
- ioLogik E2214:** Smart Ethernet Remote I/O with 6 DIs, 6 relays, -10 to 60°C operating temperature
- ioLogik E2214-T:** Smart Ethernet Remote I/O with 6 DIs, 6 relays, -40 to 75°C operating temperature
- ioLogik E2240:** Smart Ethernet Remote I/O with 8 AIs, 2 AOs, -10 to 60°C operating temperature
- ioLogik E2240-T:** Smart Ethernet Remote I/O with 8 AIs, 2 AOs, -40 to 75°C operating temperature
- ioLogik E2242:** Smart Ethernet Remote I/O with 12 DIOs, 4 AIs, -10 to 60°C operating temperature
- ioLogik E2242-T:** Smart Ethernet Remote I/O with 12 DIOs, 4 AIs, -40 to 75°C operating temperature
- ioLogik E2260:** Smart Ethernet Remote I/O with 4 DOs, 6 RTDs, -10 to 60°C operating temperature
- ioLogik E2260-T:** Smart Ethernet Remote I/O with 4 DOs, 6 RTDs, -40 to 75°C operating temperature
- ioLogik E2262:** Smart Ethernet Remote I/O with 4 DOs, 8 TCs, and -10 to 60°C operating temperature
- ioLogik E2262-T:** Smart Ethernet Remote I/O with 4 DOs, 8 TCs, and -40 to 75°C operating temperature

### Optional Accessories (can be purchased separately)

**LDP1602:** LCD module with 16 x 2 text and 5 buttons, 0 to 55°C operating temperature

### Package Checklist

- ioLogik E2200
- Documentation and software CD