ioLogik E2200 Series

Smart Ethernet remote I/O with Click&GO Logic



- Active communication with patented MX-AOPC UA Server and Active OPC server
- Smart alarm management with email, SNMP traps, TCP, UDP
- Save time and wiring costs with peer-to-peer communication
- Front-end intelligence with patented Click&Go control logic, up to 24 rules
- Simplify I/O management with MXIO library for Windows or Linux
- Web browser configurations over HTTP
- Supports SNMP v1/2c/3
- 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

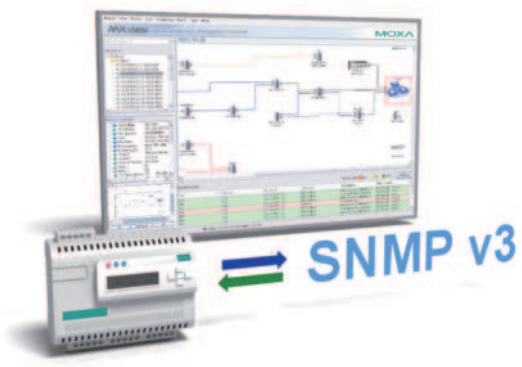
The ioLogik E2200 supports simple and powerful Click&Go™ technology to configure event-driven reports and alarms delivered over email, TCP/UDP, or SNMP traps, giving you a powerful effective, tool for delivering time-stamped status updates in real time.

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. 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
Power Consumption: 203 mA @ 24 VDC

MTBF (mean time between failures)
Time: 213,673 hrs
Database: Telcordia (Bellcore)

ioLogik E2212 Specifications

Inputs and Outputs
Digital Inputs: 8 channels
Digital Outputs: 8 channels
Configurable DI/Os: 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
Power Consumption: 136 mA @ 24 VDC

MTBF (mean time between failures)
Time: 217,722 hrs
Database: Telcordia (Bellcore)

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 M ohms (min.) @ 500 VDC
Mechanical endurance: 1,000,000 operations
Electrical endurance: 100,000 operations @ 5 A resistive load
Contact Resistance: 100 m ohms (max.)
Pulse Output: 0.3 Hz at rated load

Power Requirements
Power Consumption: 170 mA @ 24 VDC

MTBF (mean time between failures)
Time: 307,239 hrs
Database: Telcordia (Bellcore)

ioLogik E2240 Specifications

Inputs and Outputs
Analog Inputs: 8 channels
Analog Outputs: 2 channels

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current
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: 900k ohms (min.)
Built-in Resistor for Current Input: 120 ohms
Isolation: 3k VDC or 2k Vrms

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
Power Consumption: 198 mA @ 24 VDC

MTBF (mean time between failures)
Time: 155,941 hrs
Database: Telcordia (Bellcore)

ioLogik E2242 Specifications

Inputs and Outputs
Analog Inputs: 4 channels
Configurable DI/Os: 12 channels

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current
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: 200k ohms (min.)
Built-in Resistor for Current Input: 120 ohms

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
Isolation: 3k VDC or 2k Vrms

Power Requirements
Power Consumption: 178 mA @ 24 VDC
MTBF (mean time between failures)
Time: 204,391 hrs
Database: Telcordia (Bellcore)

ioLogik E2260 Specifications

Inputs and Outputs
RTD Inputs: 6 channels
Digital Outputs: 4 channels
Isolation: 3k VDC or 2k Vrms
RTD Inputs
Input 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: 12 samples/sec (all channels)
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: 625k ohms

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
Power Requirements
Power Consumption: 95 mA @ 24 VDC
MTBF (mean time between failures)
Time: 327,282 hrs
Database: Telcordia (Bellcore)

ioLogik E2262 Specifications

Inputs and Outputs
Thermocouple Inputs: 8 channels
Digital Outputs: 4 channels
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: 12 samples/sec (all channels)
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 M ohms

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
Isolation: 3k VDC or 2k Vrms
Power Requirements
Power Consumption: 160 mA @ 24 VDC
MTBF (mean time between failures)
Time: 341,063 hrs
Database: Telcordia (Bellcore)

Common Specifications

LAN
Ethernet: 1 10/100 Mbps RJ45 port
Protection: 1.5 kV magnetic isolation
Protocols: Modbus/TCP, TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP
Serial Communication
Interface: RS-485-2w: Data+, Data-, GND (3-contact terminal block)
Serial Line Protection: 15 kV ESD for all signals
Serial Communication Parameters
Parity: None
Data Bits: 8
Stop Bits: 1
Flow Control: None
Baudrate: 1200 to 115200 bps
Protocol: Modbus/RTU

Power Requirements
Power Input: 24 VDC nominal, 12 to 36 VDC
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
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

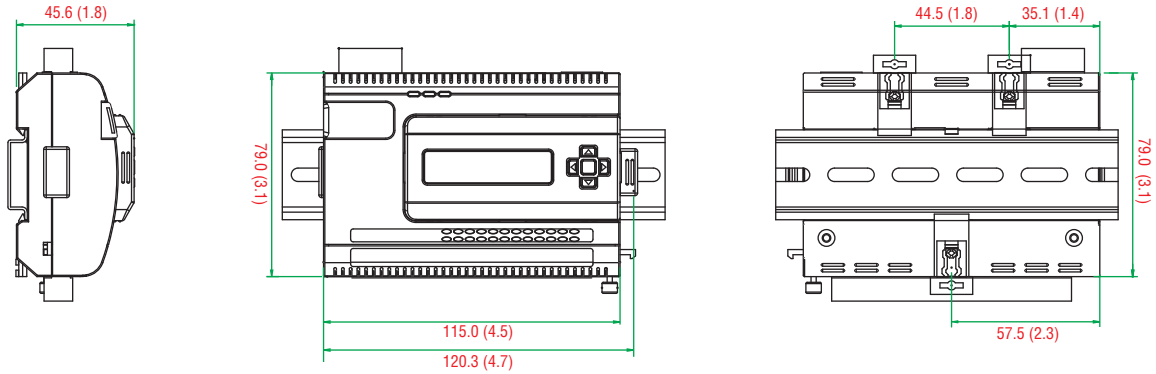
Safety: UL 508
EMI:
EN 61000-3-2; EN 61000-3-3; EN 61000-6-4;
FCC Part 15, Subpart B, Class A
EMS:
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,
EN 61000-4-5, EN 61000-4-6, EN 61000-4-8,
EN 61000-4-11, EN 61000-6-2
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Green Product: RoHS, CRoHS, WEEE
Note: Please check Moxa's website for the most up-to-date certification status.

Warranty

Warranty Period: 5 years (excluding ioLogik E2214*)
*Because of the limited lifetime of power relays, products that use that component are covered by a 2-year warranty.
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View

Ordering Information

Available Models

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

Optional Accessories (can be purchased separately)

LDP1602: LCD module with 16 x 2 text and 5 buttons

Package Checklist

- ioLogik E2200 series device
- Documentation and software CD

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