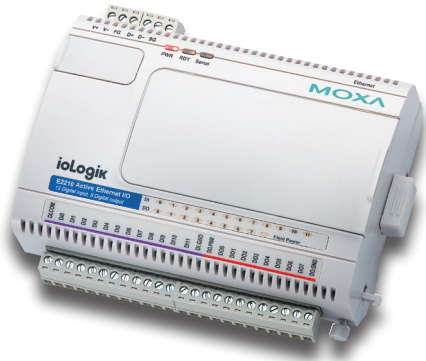# ioLogik E2200 Series

Ethernet micro RTU controllers

> Active communication with patented Active OPC Server
> Smart alarm management with e-mail, SNMP Trap, 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
> Friendly configuration with web browser
> Supports SNMPv1/v2c/v3 protocol

CLICK&GO LOGIC

RoHS · c(UL)us LISTED · CE · FC

: Introduction

Moxa's ioLogik E2200 is a new type of Ethernet micro RTU controller, which is a PC-based data acquisition and control device that uses proactive, event-based reporting to control I/O devices. Unlike traditional RTUs, which are passive and must poll for data, Moxa's ioLogik E2200 series with Active OPC Server makes seamless connection with SCADA systems a reality. In addition, SNMP is used for communicating with an NMS (Network Management System) for IT field users. The I/O status of an Ethernet micro RTU controller can be reported and controlled automatically on-site based on user specified conditions. This report-by-exception approach, which is new to PC-based monitoring, requires far less bandwidth than traditional polling methods.

ioLogik E2200 Series Selection Table

Models	I/O Combinations							
	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs	RTD Inputs	TC Inputs	Relay Outputs	Configurable DIOs
ioLogik E2210	12	8	–	–	–	–	–	–
ioLogik E2212	8	8	–	–	–	–	–	4
ioLogik E2214	6	–	–	–	–	–	6	–
ioLogik E2240	–	–	8	2	–	–	–	–
ioLogik E2242	–	–	4	–	–	–	–	12
ioLogik E2260	–	4	–	–	6	–	–	–
ioLogik E2262	–	4	–	–	–	8	–	–

: 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 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

Power Requirements
Power Consumption: 203 mA @ 24 VDC

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

⠿ 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, power off storage
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
DIO Output Leakage Current: 2.3 mA @ 24 VDC

Power Requirements
Power Consumption: 136 mA @ 24 VDC

MTBF (mean time between failure)
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, 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
Initial Insulation Resistance: 1000 M ohms (min.) @ 500 VDC
Mechanical Endurance: 20,000,000 operations
Electrical Endurance: 50,000 operations @ 5 A resistive load
Contact Resistance: 30 m ohms (max.)
Pulse Output: 0.3 Hz at rated load

Power Requirements
Power Consumption: 170 mA @ 24 VDC

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

⠿ ioLogik E2240 Specifications

Inputs and Outputs
Analog Inputs: 8 channels
Analog Outputs: 2 channels
Isolation: 3K VDC or 2K Vrms

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
Sampling Rate (all channels):
• 10 samples/sec for voltage
• 6 samples/sec for current
Input Impedance: 900K 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
Load Resistor: Less than 250 ohms

Power Requirements
Power Consumption: 198 mA @ 24 VDC

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

⋮ ioLogik E2242 Specifications

Inputs and Outputs
Analog Inputs: 4 channels
Configurable DIOs: 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
Sampling Rate (all channels): 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:
• 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, power off storage
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 failure)
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 (-200 to 850°C)
• PT1000 (-200 to 350°C)
• JPT100, JPT200, JPT500 (-200 to 640°C)
• JPT1000 (-200 to 350°C)
• NI100, NI200, NI500 (-60 to 250°C)
• NI1000 (-60 to 150°C)
• NI120 (-80 to 260°C)
• Resistance of 310, 620, 1250, and 2200
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
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 failure)
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
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 failure)
Time: 341,063 hrs
Database: Telcordia (Bellcore)

: Common Specifications

LAN
Ethernet: 1 x 10/100 Mbps, RJ45
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: -10 to 60°C (14 to 140°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:
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.
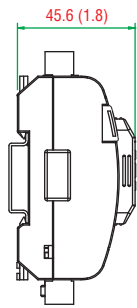
Warranty
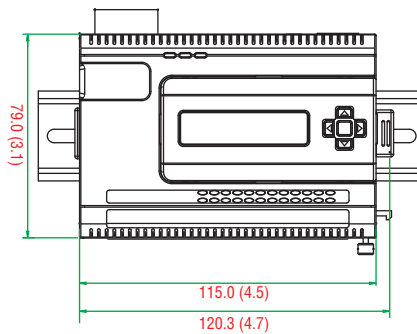**Warranty Period:** 5 years (excluding ioLogik E2214*)
*Because of the limited lifetime of power relays, products that use that component are covered by a 2-year warranty.
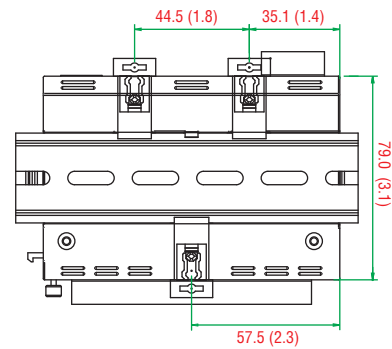**Details:** See www.moxa.com/warranty

Dimensions

Unit: mm (inch)

45.6 (1.8)

79.0 (3.1)

115.0 (4.5)

120.3 (4.7)

Side View

Front View

44.5 (1.8)   35.1 (1.4)

79.0 (3.1)

57.5 (2.3)

Rear View

: Ordering Information

Available Models
ioLogik E2210: Ethernet micro RTU controller with 12 DIs, 8 DOs, -10 to 60°C operating temperature
ioLogik E2212: Ethernet micro RTU controller with 8 DIs, 8 DOs, 4 DIOs, -10 to 60°C operating temperature
ioLogik E2214: Ethernet micro RTU controller with 6 DIs, 6 Relays, -10 to 60°C operating temperature
ioLogik E2240: Ethernet micro RTU controller with 8 AIs, 2 AOs, -10 to 60°C operating temperature
ioLogik E2242: Ethernet micro RTU controller with 4 AIs, 12 DIOs, -10 to 60°C operating temperature
ioLogik E2242-T: Ethernet micro RTU controller with 4 AIs, 12 DIOs, -40 to 75°C operating temperature
ioLogik E2260: Ethernet micro RTU controller with 6 RTDs, 4 DOs, -10 to 60°C operating temperature
ioLogik E2262: Ethernet micro RTU controller with 8 TCs and 4 DOs, -10 to 60°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