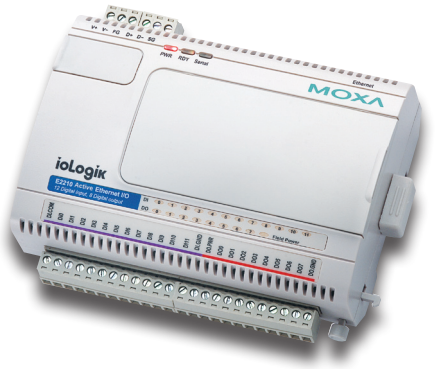
ioLogik E2200 Series

Ethernet micro RTU controllers



- Front-end intelligence that supports 24 Click&Go rules
- Active Messaging with real-time stamp, including SMS, SNMP Trap with I/O status, TCP, and email
- Supports SNMPv1/v2c/v3 protocol
- I/O peer-to-peer function
- Built-in web console
- PC utility: auto detection of installed modules
- MXIO programming library for Windows, WinCE VB/VC.NET, and Linux C APIs
- -40 to 75°C operating temperature range (T models)

CLICK&GO™ LOGIC

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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 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

Digital Input

Sensor Type: Wet Contact (NPN), Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• Logic 0 (On): short to GND
• Logic 1 (Off): open
Wet Contact: (source type)
• Logic 0 (On): 0 to 3 VDC
• Logic 1 (Off): 10 to 30 VDC
Common Type: 12 points per COM
Isolation: 3K VDC or 2K Vrms
Counter Frequency: 900 Hz
Digital Filtering Time Interval: Software selectable
Over-voltage Protection: 36 VDC

Digital Output

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: 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

Digital Input
Sensor Type: Wet Contact (NPN or PNP) and Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• Logic 0 (On): short to GND
• Logic 1 (Off): open
Wet Contact:

DI Type / Status	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 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
Over-voltage Protection: 36 VDC
Poweroff Counter: Supports poweroff counter storage function

Digital Output
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: 2K Vrms or 3K VDC (Magnetic)

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

Digital Input
Sensor Type: Wet Contact (NPN or PNP) and Dry Contact
I/O Mode: DI or Event Counter
Dry Contact:
• Logic 0 (On): short to GND
• Logic 1 (Off): open
Wet Contact:

DI Type / Status	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 VDC

Common Type: 3 points per COM
Isolation: 3K VDC or 2K Vrms
Counter Frequency: 900 Hz, power off storage
Digital Filtering Time Interval: Software selectable
Over-voltage Protection: 36 VDC
Poweroff Counter: Supports poweroff counter storage function
Relay Counter: Supports relay counter storage function

Relay Output
Type: Form A (N.O.) relay outputs, 5 A
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: 10 ms, 5 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: 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

Analog 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
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
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 V, 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:
• Logic 0 (On): short to GND
• Logic 1 (Off): Open
Wet Contact:

DI Type / Status	Source	Sink
ON	0 to 3 VDC	10 to 30 VDC
OFF	10 to 30 VDC	0 to 3 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
Over-voltage Protection: 36 VDC
Poweroff Counter: Supports poweroff counter storage function

Digital Output
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: 2K Vrms or 3K VDC (Magnetic)

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

RTD Inputs
Input Type: Pt, JPt, Ni, RTD sensor, resistor
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 (min.)

Digital Output
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: 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, K, T, E, R, S, B, N, and mV modes
Conversion Time: Less than 90 ms
Sampling Rate: 12 samples/sec (all channels)
Effective Resolution: 16 bits
Accuracy:
±0.1% FSR @ 25°C
±0.3% FSR @ -10 and 60°C
Input Impedance: 1 M ohm or better

Digital Output
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

Serial Communication
Interface: RS-485-2w: Data+, Data-, GND
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

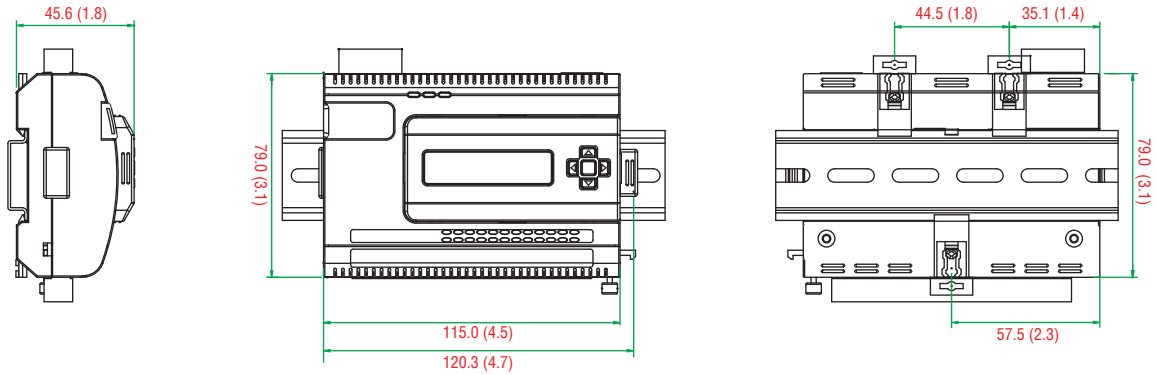
Physical Characteristics
Wiring: I/O cable max. 14 AWG
Dimensions: 115 x 79 x 45.6 mm (4.53 x 3.11 x 1.80 in)
Weight: under 250 g

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: FCC Part 15 Subpart B Class A, EN 55022 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 E2214*)
*Because of the limited lifetime of power relays, products that use this component are covered by a 2-year warranty.

Dimensions
Unit: mm (inch)



Side View | Front View | Rear View

Ordering Information

Available Models
ioLogik E2210: Ethernet micro RTU controller with 12 digital inputs and 8 digital outputs, -10 to 60°C operating temperature
ioLogik E2212: Ethernet micro RTU controller with 8 digital inputs, 8 digital outputs, and 4 DIOs, -10 to 60°C operating temperature
ioLogik E2214: Ethernet micro RTU controller with 6 digital inputs and 6 relay outputs, -10 to 60°C operating temperature
ioLogik E2240: Ethernet micro RTU controller with 8 analog inputs and 2 analog outputs, -10 to 60°C operating temperature
ioLogik E2242: Ethernet micro RTU controller with 4 analog inputs and 12 configurable DIOs, -10 to 60°C operating temperature
ioLogik E2260: Ethernet micro RTU controller with 6 RTD inputs and 4 digital outputs, -10 to 60°C operating temperature
ioLogik E2262: Ethernet micro RTU controller with 8 thermocouple inputs and 4 digital outputs, -10 to 60°C operating temperature
ioLogik E2242-T: Ethernet micro RTU controller with 4 analog inputs and 12 configurable DIOs, -40 to 75°C operating temperature

Accessories (can be purchased separately)
LDP1602: LCD module with 16 x 2 text and 5 buttons

Package Checklist
- 1 ioLogik E2200 series RTU controller
- Document and software CD