

Smart Remote I/O with Click&Go Plus Logic



	ioLogik 2542-HSPA	ioLogik 2542-GPRS	ioLogik 2542-WL1	ioLogik 2542	ioLogik 2512-HSPA	ioLogik 2512-GPRS	ioLogik 2512-WL1	ioLogik 2512
Inputs/Outputs								
Digital Inputs	–	–	–	–	8	8	8	8
Configurable DIOs	12	12	12	12	8	8	8	8
Analog Inputs	4	4	4	4	–	–	–	–
Cellular								
Band Options	UMTS/HSPA+: five-band 800/850/900/1900/2100 MHz GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	–	–	UMTS/HSPA+: five-band 800/850/900/1900/2100 MHz GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz	–	–
WLAN								
Standard	–	–	IEEE 802.11a/b/g for Wireless LAN IEEE 802.11i for Wireless Security	–	–	–	IEEE 802.11a/b/g for Wireless LAN IEEE 802.11i for Wireless Security	–
Ethernet								
Ports (Connector)	4 switched ports, with 1 optimized port for faster downstream communications with up to 8 daisy-chained ioLogik E1200 units (RJ45)							
Speed	10/100 Mbps							
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNTP, SMTP							
Serial								
Ports (Connector)	2 (RJ45)							
Interface	RS-232/422/485 software-selectable							
Protocols	Modbus/RTU (master/gateway), serial tunnel mode (client/server)							
Environmental Limits								
Standard Operating Temp.	-10 to 60°C (14 to 140°F)							
Wide Operating Temp.	-30 to 70°C (-22 to 158°F)			-40 to 75°C (-40 to 167°F)	-30 to 70°C (-22 to 158°F)			-40 to 75°C (-40 to 167°F)
Storage Temp.	-40 to 85°C (-40 to 185°F)							
Ambient Relative Humidity	5 to 95% (non-condensing)							
Software								
Click&Go Plus	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓
MX-AOPC UA Logger (Data Complement)	✓	✓	✓	✓	✓	✓	✓	✓
MXIO	✓	✓	✓	✓	✓	✓	✓	✓
IOxpress	✓	✓	✓	✓	✓	✓	✓	✓
Standards and Certifications								
Safety	UL 508							
EMC	EN 55022; EN 55024; EN 61000-6-2; EN 61000-6-4							
EMI	CISPR 22, FCC Part 15B 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							
Shock	IEC 60068-2-27							
Vibration	IEC 60068-2-6							
Radio	R&TTE; NCC		R&TTE; NCC; VCCI	–	R&TTE; NCC		R&TTE; NCC; VCCI	–
Hazardous Location	Class I Division 2, ATEX Zone 2							
Green Product	RoHS, CRoHS, WEEE							
Reliability								
Warranty	5 years							
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Smart Remote I/O with Click&Go Logic



	ioLogik E2210	ioLogik E2212	ioLogik E2214	ioLogik E2240	ioLogik E2242	ioLogik E2260	ioLogik E2262	ioLogik W5340-HSPA	
Inputs/Outputs									
Digital Inputs	12	8	6	–	–	–	–	–	
Digital Outputs	8	8	–	–	–	4	4	–	
Relays	–	–	6	–	–	–	–	2	
Configurable DIOs	–	4	–	–	12	–	–	8	
Analog Inputs	–	–	–	8	4	–	–	4	
Analog Outputs	–	–	–	2	–	–	–	–	
RTDs	–	–	–	–	–	6	–	–	
Thermocouples	–	–	–	–	–	–	8	–	
Ethernet									
Ports (Connector)	1 (RJ45)							1, with up to 3 ioLogik E1200 units daisy-chained (RJ45)	
Speed	10/100 Mbps								
Protocols	Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, HTTP, CGI, SNMP, SMTP							Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, SNTP, SMTP	
Serial									
Ports (Connector)	1 (Euroblock terminal)							1 (DB9 male or Euroblock terminal)	
Interface	RS-485							RS-232/422/485 software-selectable	
Protocols	Modbus/RTU (gateway)							Modbus/RTU (master/gateway), serial tunnel mode (client/server)	
Environmental Limits									
Standard Operating Temp.	-10 to 60°C (14 to 140°F)							-10 to 55°C (14 to 131°F)	
Wide Operating Temp.	-40 to 75°C (-40 to 167°F)							-30 to 70°C (-22 to 158°F)	
Storage Temperature	-40 to 85°C (-40 to 185°F)								
Ambient Relative Humidity	5 to 95% RH (non-condensing)								
Software									
Click&Go	✓	✓	✓	✓	✓	✓	✓	✓	
Active OPC Server	✓	✓	✓	✓	✓	✓	✓	✓	
MX-ADPC UA Server	✓	✓	✓	✓	✓	✓	✓	✓	
DA-Center (Data Complement)	–	–	–	–	–	–	–	–	
MXIO	✓	✓	✓	✓	✓	✓	✓	✓	
ioAdmin	✓	✓	✓	✓	✓	✓	✓	✓	
Standards and Certifications									
Safety	UL 508								
EMC	EN 61000-6-2; EN 61000-6-4								
EMI	CISPR 22, FCC Part 15B 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								
Shock	IEC 60068-2-27								
Vibration	IEC 60068-2-6								
Radio	–	–	–	–	–	–	–	R&TTE; NCC	
Green Product	RoHS, CRoHS, WEEE								
Reliability									
Warranty	5 years	5 years	2 years*	5 years	5 years	5 years	5 years	2 years*	
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*Because of the limited lifetime of power relays, products using that component are covered by a 2-year warranty.

ioLogik 2500 HSPA/GPRS/WLAN Series

Smart wireless remote I/O with Click&Go Plus Logic



- > Front-end intelligence with Click&Go Plus control logic, up to 48 rules
- > Using Cellular Data Access software, SCADA systems can directly communicate with cellular devices hidden behind private IP addresses
- > Active communication with MX-AOPC UA Server
- > Automatically complement disconnection period data with MX-AOPC UA Logger software
- > 4-port unmanaged switch built in for linking to Ethernet devices
- > I/O expansion port for daisy chaining up to 8 ioLogik E1200 units
- > 3-in-1 RS-232/422/485 serial port for connecting to serial devices in the field
- > Simplify I/O management with MXIO library for Windows or Linux
- > Wide operating temperature range of -30 to 70°C (-22 to 158°F)



Introduction

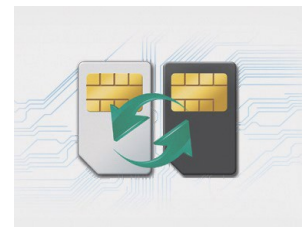
The ioLogik 2500 is a smart remote I/O product with unique hardware and software designs, making it an ideal solution for a variety of industrial data acquisition applications.

The ioLogik 2500 HSPA/GPRS series features dual SIM failover, 3-step cellular reconnection, and dynamic IP access. The WLAN series features 802.11a/b/g reliable wireless communication.

The ioLogik 2500's hardware design includes a 4-port unmanaged Ethernet switch and 2 serial ports, enabling the ioLogik 2500 to seamlessly connect to a variety of field devices. One of the Ethernet ports can be used to link to 8 daisy-chained ioLogik E1200 expansion modules to provide more than 100 channels. The ioLogik 2500 acts as the "head" unit, with Click&Go Plus logic used to control the entire I/O array. Most importantly, the ioLogik 2500's single IP is all that's required to connect the entire I/O array to your network, providing the perfect solution for industrial field sites that have an insufficient number of IP addresses.

Dual SIM Failover

The ioLogik 2500 HSPA/GPRS series has dual SIM slots for inserting SIM cards from different carriers. It can switch over to a different carrier automatically when one of the cellular networks gets disconnected, ensuring that your device will always be online.



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Smart Remote I/O > ioLogik 2500 HSPA/GPRS/WLAN Series

3-step Cellular Reconnection

If the cellular network is still disconnected after dual SIM failover, the ioLogik 2500 series will first try to reset the cellular modem, then reset the system software if it is still not working, and lastly reboot the entire system after being disconnected for a user-defined period of time.

Based on Moxa's experience, 90% of cellular connection issues can be solved by resetting the cellular modem. 3-step cellular reconnection not only helps prevent data and control loss, but also reduces your cost since your engineers won't need to make as many service calls to reboot devices located at remote sites.

Dynamic IP Access

Most carriers provide dynamic and private IP address SIM cards, and although private IP cards are cheaper, they cannot be used to provide direct access to the cloud. Moxa's Cellular Data Access software enables this type of connection by establishing a special data route between the ioLogik 2500 HSPA/GPRS series and the cloud. Only one public IP address is needed to use Moxa's Cellular Data Access software, allowing you to easily update internal register values, change output channel status, and modify the configurations of devices connected to an ioLogik 2500, all through the cloud.



VPN—Build a Reliable and Secure Cellular Communication Network

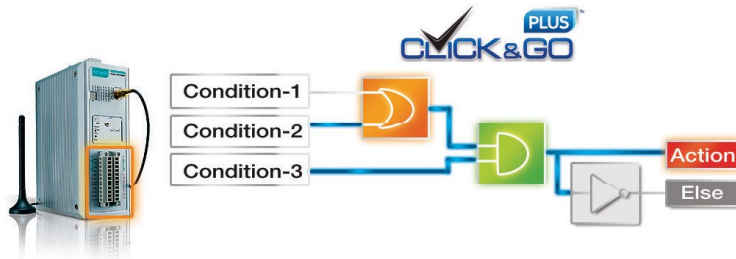
For security purposes, the ioLogik 2500-GPRS/HSPA also supports IPSec for building a secure VPN tunnel to the host station. With the help of VPNs, cellular devices acting as a VPN client can initiate a

connection with a VPN server. Once the connection is established, cellular devices can communicate with other network devices on the same private network.

Powerful Control Logic from the New Click&Go Plus™

The new Click&Go Plus™ control logic now supports up to 48 rules with further upgrades to 8 conditions/actions. In addition, its graphical user interface provides 3 logic gates and 3 multi-layers, helping you build more powerful and efficient IO solutions.

Once you finish setting up your Click&Go Plus™ logic rules, IOxpress's easy-to-use simulation function can be used to find potential errors in your Click&Go Plus™ rules before uploading them to your online devices.



One IP for Multiple Expansion I/Os Gives You a Smarter Data Acquisition Solution

The ioLogik 2500's unique IO expansion hardware design lets you link up to 8 ioLogik E1200 modules into a versatile I/O array with 100+ different I/O channels. The ioLogik 2500 acts as the perfect "head"

unit, using Click&Go Plus logic to control the entire I/O array, and providing a single IP to connect the entire I/O array to your network.



ioLogik 2512 Specifications

Inputs and Outputs

Digital Inputs: 8 channels

Configurable DIOs (by software): 8 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 COM):

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

Common Type: 8 points per COM

Counter Frequency: 2.5 kHz

Digital Filtering Time Interval: Software configurable

Digital Output

Type: Sink

I/O Mode: DO or Pulse Output

Pulse Output Frequency: 5 kHz

Over-Voltage Protection: 45 VDC

Over-Current Protection: 1.5 A per channel @ 25°C

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

Current Rating: 500 mA per channel @ 25°C

DIO Output Leakage Current: < 1 mA @ 30 VDC

Power Requirements

Input Voltage: 9 to 48 VDC

Input Current:

- HSPA Model: 390 mA @ 24 VDC
- GPRS Model: 416 mA @ 24 VDC
- WL1 Model: 328 mA @ 24 VDC

MTBF (mean time between failures)

Time:

- HSPA model: 378,154 hrs
 - GPRS model: 403,452 hrs
 - WL1 model: 400,469 hrs
- Standard:** Telcordia SR332

ioLogik 2542 Specifications

Inputs and Outputs

Configurable DIOs (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 COM):

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

Common Type: 6 points per COM

Counter Frequency: 2.5 kHz

Digital Filtering Time Interval: Software configurable

Digital Output

Type: Sink

I/O Mode: DO or Pulse Output

Pulse Output Frequency: 5 kHz

Over-Voltage Protection: 45 VDC

Over-Current Protection: 1.5 A per channel @ 25°C

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

Current Rating: 500 mA per channel @ 25°C

DIO Output Leakage Current: < 1 mA @ 30 VDC

Analog Input

Type: Differential input

Resolution: 16 bits

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

Input Range: ±10 V, 0 to 10 V, 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 @ -30 and 70°C

Sampling Rate:

- All channels: 400 samples/sec
- Per channel: 100 samples/sec

Input Impedance: 1M ohms (min.)

Built-in Resistor for Current Input: 120 ohms

Power Requirements

Input Voltage: 9 to 48 VDC

Input Current:

- HSPA Model: 442 mA @ 24 VDC
- GPRS Model: 494 mA @ 24 VDC
- WL1 Model: 406 mA @ 24 VDC

MTBF (mean time between failures)

Time:

- HSPA model: 378,154 hrs
 - GPRS model: 403,087 hrs
 - WL1 model: 331,222 hrs
- Standard:** Telcordia SR332

Common Specifications

Cellular

Standards: GSM/GPRS/EDGE/UMTS/HSPA+

HSPA Model Band Options:

- UMTS/HSPA+: five-band 800/850/900/1900/2100 MHz
- GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz

GPRS Model Band Options: GSM/GPRS/EDGE: quad-band 850/900/1800/1900 MHz

SIM Control Voltage: 3/1.8 V

SIM Format: Full size

WLAN

Standards:

- IEEE 802.11a/b/g for wireless LAN
- IEEE 802.11i for wireless security

Spread Spectrum and Modulation (typical):

- DSSS with DBPSK, DQPSK, CCK
- OFDM with BPSK, QPSK, 16QAM, 64QAM
- 802.11b: CCK @ 11/5.5 Mbps, DQPSK @ 2 Mbps, DBPSK @ 1 Mbps
- 802.11a/g: 64QAM @ 54/48 Mbps, 16QAM @ 36/24 Mbps, QPSK @ 18/12 Mbps, BPSK @ 9/6 Mbps

Operating Channels (central frequency):

- US: 2.412 to 2.462 GHz (11 channels), 5.18 to 5.24 GHz (4 channels)
- EU: 2.412 to 2.472 GHz (13 channels), 5.18 to 5.24 GHz (4 channels)

Security:

- 64-bit and 128-bit WEP encryption
- Full WPA/WPA2 Personal

Transmission Rates:

- 802.11b: 1, 2, 5.5, 11 Mbps
- 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

TX Transmit Power:

- 802.11b: Typ. 18±1.5 dBm @ 1 to 11 Mbps
- 802.11g: Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 17±1.5 dBm @ 36 Mbps, Typ. 16±1.5 dBm @ 48 Mbps, Typ. 16±1.5 dBm @ 54 Mbps
- 802.11a: Typ. 18±1.5 dBm @ 6 to 24 Mbps, Typ. 16±1.5 dBm @ 36 Mbps, Typ. 15±1.5 dBm @ 48 Mbps, Typ. 14±1.5 dBm @ 54 Mbps

RX Sensitivity:

- 802.11b: -97 dBm @ 1 Mbps, -94 dBm @ 2 Mbps, -92 dBm @ 5.5 Mbps, -90 dBm @ 11 Mbps
- 802.11g: -88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -70 dBm @ 54 Mbps
- 802.11a: -88 dBm @ 6 to 24 Mbps, -85 dBm @ 36 Mbps, -75 dBm @ 48 Mbps, -70 dBm @ 54 Mbps

LAN**Ethernet:**

- 4 switched 10/100 Mbps RJ45 ports
- 1 optimized port for faster downstream communications with daisy-chained ioLogik E1200 units

Note: The optimized daisy-chain port is not supported by the ioLogik E1261W-T, E1261H-T, or E1263H-T.

Protection: 1.5 kV magnetic isolation

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

Serial

Interface: 2 RS-232/422/485 (software selectable) RJ45 ports

Parity: None, Odd, Even

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 2

Flow Control: None, RTS/CTS, XON/XOFF

Baudrate: 300 to 115200 bps

Protocols: Modbus/RTU (master/gateway), serial tunnel mode (client/server)

Physical Characteristics

Wiring: I/O cable, 14 AWG (max.)

Dimensions: 61 x 157 x 115 mm (2.4 x 6.18 x 4.53 in)

Weight: Under 1265 g (2.79 lb)

Mounting: DIN rail (standard), wall (optional)

Storage

Expansion Slot: Up to 32 GB microSD™ memory card (SDHC compatible)

Note: For units operating in extreme temperatures, industrial-grade, wide-temperature SD cards are required.

Environmental Limits**Operating Temperature:**

Standard Models: -10 to 60°C (14 to 140°F)

Wide Temp. Models: -30 to 70°C (-22 to 158°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 55022/24, 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: 3 V/m

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power 2 kV

IEC 61000-4-6 CS: 3 V

IEC 61000-4-8

Radio: R&TTE: EN 62311, EN 300 328, EN 301 489-1, EN 301 489-17, EN 301 893; NCC; VCCI

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.

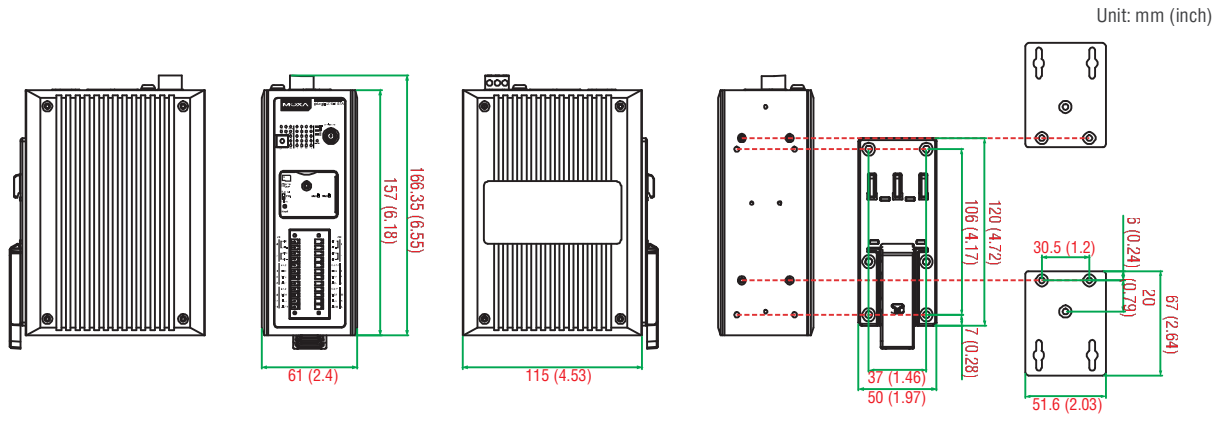
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

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Dimensions



Ordering Information

Available Models

ioLogik 2512-GPRS: Smart GPRS remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -10 to 60°C operating temperature

ioLogik 2512-GPRS-T: Smart GPRS remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -30 to 70°C operating temperature

ioLogik 2512-HSPA: Smart HSPA remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -10 to 60°C operating temperature

ioLogik 2512-HSPA-T: Smart HSPA remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -30 to 70°C operating temperature

ioLogik 2512-WL1: Smart WLAN remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -10 to 60°C operating temperature

ioLogik 2512-WL1-T: Smart WLAN remote I/O with Click&Go Plus, 8 DIs, 8 DIOs, -30 to 70°C operating temperature

ioLogik 2542-GPRS: Smart GPRS remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -10 to 60°C operating temperature

ioLogik 2542-GPRS-T: Smart GPRS remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -30 to 70°C operating temperature

ioLogik 2542-HSPA: Smart HSPA remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -10 to 60°C operating temperature

ioLogik 2542-HSPA-T: Smart HSPA remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -30 to 70°C operating temperature

ioLogik 2542-WL1: Smart WLAN remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -10 to 60°C operating temperature

ioLogik 2542-WL1-T: Smart WLAN remote I/O with Click&Go Plus, 12 DIOs, 4 AIs, -30 to 70°C operating temperature

Optional Accessories (can be purchased separately)

WK-51-01: DIN-rail/wall-mounting kit, 2 plates with 6 screws

Package Checklist

- ioLogik 2500
- RJ45-to-DB9 connection cables x 2
- Documentation and software CD
- Antennas x 1
- Hardware installation guide

ioLogik W5340-HSPA

Smart HSPA remote I/O with Click&Go Logic



- > Front-end intelligence with patented Click&Go control logic, up to 24 rules
- > Using Active OPC Server software, SCADA systems can directly communicate with cellular devices hidden behind private IP addresses
- > Active communication with Active OPC Server
- > Automatically complement disconnection period data with DA-Center software
- > Daisy chain up to 3 ioLogik E1200 units
- > 3-in-1 RS-232/422/485 serial port for connecting to serial devices in the field
- > Supports SNMPv1/v2c
- > Simplify I/O management with MXIO library for Windows or Linux platforms
- > Wide operating temperature range of -30 to 70°C (-22 to 158°F)



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Smart Remote I/O > ioLogik W5340-HSPA

Introduction

The ioLogik W5340-HSPA is a hardy, metal-encased remote I/O unit that combines an HSPA cellular modem, a remote I/O module, and a data logger for use in a wide variety of innovative I/O applications. The ioLogik W5340-HSPA also supports Moxa's patented Click&Go programming interface, giving engineers a powerful, simple tool that streamlines installation and setup into a nearly effortless process.

The ioLogik W5340-HSPA delivers local data logging in a storage space expandable up to 32 GB, and comes with Moxa's innovative, patented MX-AOPC UA Server or Active OPC Server software to transform network communications from centralized polling by the control system to event-based notifications that originate at the edge.

By eliminating constant polling, communications can be brought up to real-time speeds while reducing hardware costs and overall network overhead.

The ioLogik W5340-HSPA provides benefits beyond mere cellular connectivity and remote input/output management; it is an ideal solution for any number of industrial applications, including:

- Pipeline monitoring for water, oil, and gas facilities
- Pump station and lift station monitoring
- Environmental monitoring
- Security and surveillance

Automatic Data Updates from SD Cards Following Network Failures

When Active OPC Server is used in combination with DA-Center, then following any network failure an ioLogik W5340-HSPA remote client will, upon reconnecting, restore to the central database any data that was accumulated during the downtime. Following a network failure,

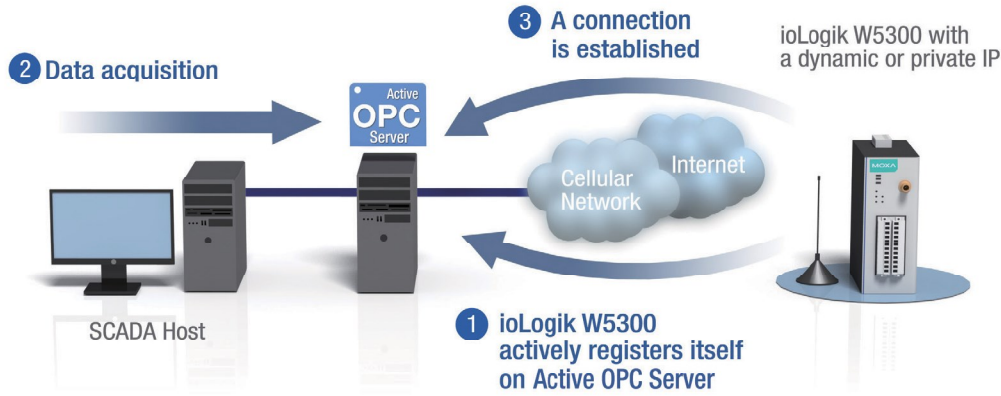
DA-Center will compare received data stored in the database with the historical data stored locally on the ioLogik W5340-HSPA. If there are any gaps in the database record, DA-Center will restore the missing data by requesting re-transmission from the remote ioLogik client.



Dynamic IP Assignments

For most cellular solutions, each remote modem is assigned a static public IP when it first associates with a network, and this often causes big headaches when automating devices over cellular connections. Cellular network carriers charge higher monthly fees for static, public IPs than they do for dynamic, private IPs. Moxa's ioLogik W5340-HSPA and patented Active OPC Server allow users to implement

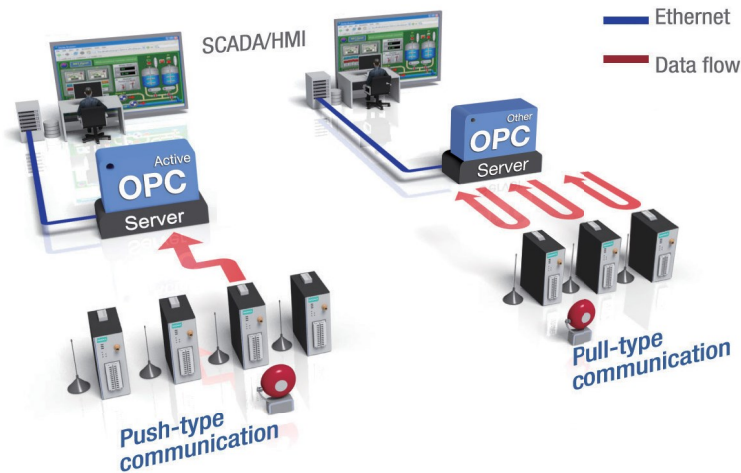
dynamic IP assignments for the ioLogik W5340-HSPA. The ioLogik W5340-HSPA can automatically establish communications with the ioLogik W5340-HSPA Server using a fixed IP, and the Active OPC Server will receive and register the ioLogik W5300's IP address and receive or record tag updates accordingly.



Faster, More Accurate Serial Data Collection than Traditional Polling Architectures

The ioLogik W5340-HSPA is equipped with a 3-in-1 serial port that supports RS-232, RS-422, and RS-485, making it more convenient than ever (and saving users money) when connecting field serial devices. ioLogik W5340-HSPA remote I/O units can also create user-defined Modbus tags for conveniently ordering and storing data from remote meters and flow sensors, and then take the initiative to actively update the central MX-AOPC UA Server with the latest tagged

data. This results in faster I/O response times and more accurate data collection. Finally, the ioLogik W5340-HSPA uses remote I/O methodology to build transparent serial tunnels for Modbus RTU communications over TCP/IP, allowing for direct connectivity between field devices and central control systems over either cellular wireless or wired Ethernet interfaces.



I/O Expandability

The ioLogik W5340-HSPA comes with a single RJ45 Ethernet port so that it can be linked together with Moxa's ioLogik E1200 units in a daisy-chain network, giving engineers a simple, cost-effective means of extending their I/O capabilities with full peer-to-peer communications. The ioLogik W5340-HSPA can support up to three ioLogik E1200 series I/O devices, which can then be installed to whichever locations are most convenient and effective for the needs of the local station.



Specifications

LAN

Ethernet: 1 10/100 Mbps RJ45 port, with up to 3 ioLogik E1200 units daisy-chained

Protection: 1.5 kV magnetic isolation

Protocols: Modbus/TCP (slave), TCP/IP, UDP, DHCP, BOOTP, SNMP, SNTP

Serial

Interface: 1 RS-232/422/485 (software selectable) DB9 male or terminal block port

Parity: None, Odd, Even, Space, Mark

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 2

Flow Control: None, Hardware, XON/XOFF

Baudrate: 300 to 115200 bps

Protocols: Modbus/RTU (master/gateway), serial tunnel mode (client/server)

Inputs and Outputs

Configurable DIOs (by software): 8 channels

Relays: 2 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 GND):

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

Common Type: 4 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: 160°C (min.)

Current Rating: 200 mA per channel

DIO Output Leakage Current: 3.6 mA @ 24 VDC

Relay

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

Contact Current Rating: Resistive Load: 1 A @ 30 VDC, 250 VAC, 110 VAC

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

Mechanical Endurance: 5,000,000 operations

Electrical Endurance: 600,000 operations @ 1 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 W5340-HSPA may malfunction when operating in high condensation environments below 0° Celsius.

Analog Input

Type: Differential input

Resolution: 16 bits

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

Input Range: 0 to 10 V, ±10 V, ±5 V, 0 to 20 mA, 4 to 20 mA

Accuracy:

- ±0.1% FSR @ 25°C
- ±0.3% FSR @ -30 and 70°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

Power Requirements

Input Voltage: 12 to 36 VDC

Input Current: 196 mA @ 24 VDC

Physical Characteristics

Wiring: I/O cable, 14 AWG (max.)

Dimensions: 46.8 x 135 x 105 mm (1.84 x 5.31 x 4.13 in)

Weight: 495 g (1.09 lb)

Mounting: DIN rail (standard), wall (optional)

Storage

Expansion Slot: Up to 32 GB SD™ memory card (SD 2.0 compatible)

Note: For units operating in extreme temperatures, industrial-grade, wide temperature SD cards are required.

Environmental Limits

Operating Temperature:

Standard Models: -10 to 55°C (14 to 131°F)

Wide Temp. Models: -30 to 70°C (-22 to 158°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, EN 60950-1

EMC: EN 55022/24

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: 1 kV; Signal: 0.5 kV

IEC 61000-4-5 Surge: Power: 2 kV

IEC 61000-4-6 CS: Signal: 3 V/m

IEC 61000-4-8 Magnetic Field: 1 A/m

Radio: R&TTE: EN 301 489-1, EN 301 489-7, EN 301 489-24, EN 301 511, EN 301 908-1; NCC

Green Product: RoHS, CRoHS, WEEE

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

MTBF (mean time between failures)

Time: 280,739 hrs

Standard: Telcordia SR332

Warranty

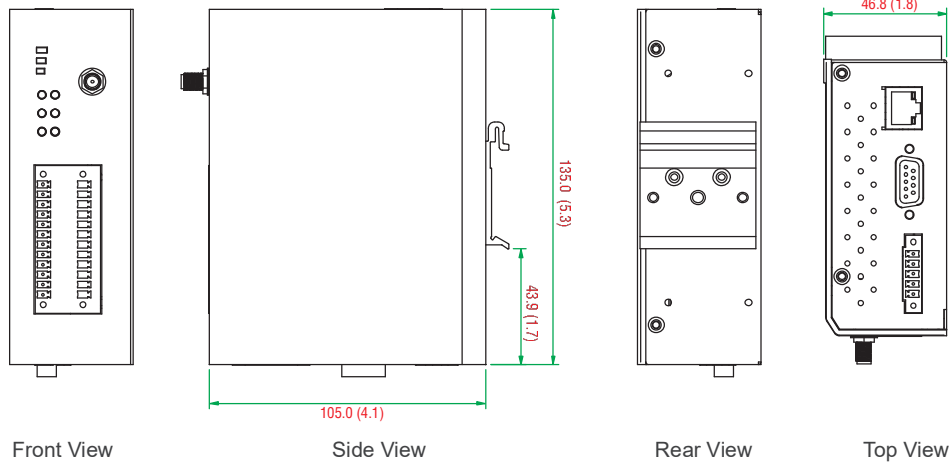
Warranty Period: 2 years*

Details: See 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)



: Ordering Information

Available Models

ioLogik W5340-HSPA: Smart HSPA remote I/O with 8 DIOs, 2 relays, 4 AIs, -10 to 55°C operating temperature

ioLogik W5340-HSPA-T: Smart HSPA remote I/O with 8 DIOs, 2 relays, 4 AIs, -30 to 70°C operating temperature

Optional Accessories (can be purchased separately)

WK-46: DIN-rail/wall-mounting kit, 2 plates with 6 screws

Package Checklist

- ioLogik W5340-HSPA
- Five-band omnidirectional antenna for GSM/GPRS/UMTS/ HSPA/HSPA+, 4 dBi, magnetic SMA, 2.5 meters
- Documentation and software CD

ioLogik 2500 Ethernet Series

Smart Ethernet remote I/O with Click&Go Plus Logic



- > Front-end intelligence with Click&Go Plus control logic, up to 48 rules
- > Active communication with MX-AOPC UA Server
- > Automatically complement disconnection period data with MX-AOPC UA Logger software
- > 4-port unmanaged switch built in for linking to Ethernet devices
- > I/O expansion port for daisy chaining up to 8 ioLogik E1200 units
- > 3-in-1 RS-232/422/485 serial port for connecting to serial devices in the field
- > Supports SNMPv1/v2c/v3
- > 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

The ioLogik 2500 is a smart remote I/O product with unique hardware and software designs, making it an ideal solution for a variety of industrial data acquisition applications.

The ioLogik 2500's hardware design includes a 4-port unmanaged Ethernet switch and 2 serial ports, enabling the ioLogik 2500 to seamlessly connect to a variety of field devices. One of the Ethernet

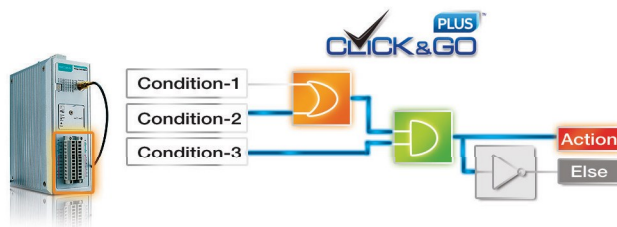
ports can be used to link to 8 daisy-chained ioLogik E1200 expansion modules to provide more than 100 channels. The ioLogik 2500 acts as the "head" unit, with Click&Go Plus logic used to control the entire I/O array. Most importantly, the ioLogik 2500's single IP is all that's required to connect the entire I/O array to your network, providing the perfect solution for industrial field sites that have an insufficient number of IP addresses.

Powerful Control Logic from the New Click&Go Plus™

The new Click&Go Plus™ control logic now supports up to 48 rules with further upgrades to 8 conditions/actions. In addition, its graphical user interface provides 3 logic gates and 3 multi-layers, helping you build more powerful and efficient IO solutions.

Once you finish setting up your Click&Go Plus™ logic rules, IOxpress's easy-to-use simulation function can be used to find potential errors in your Click&Go Plus™ rules before uploading them to your online devices.

Peer-to-peer (P2P) mode is widely used for industrial applications. Traditionally, you would need to use P2P devices on both sides of the connection. However, if a configuration mismatch occurred between the P2P devices, the P2P connection would fail, after which you would need to spend extra time and effort to check the P2P settings. With IOxpress, all you need to do is set up the output device, and the P2P connection will be established automatically.



One IP for Multiple Expansion I/Os Gives You a Smarter Data Acquisition Solution

The ioLogik 2500's unique IO expansion hardware design lets you link up to 8 ioLogik E1200 modules into a versatile I/O array with 100+ different I/O channels. The ioLogik 2500 acts as the perfect "head" unit, using Click&Go Plus logic to control the entire I/O array, and providing a single IP to connect the entire I/O array to your network.



Powerful Datalogger and Value-added MODBUS Gateway

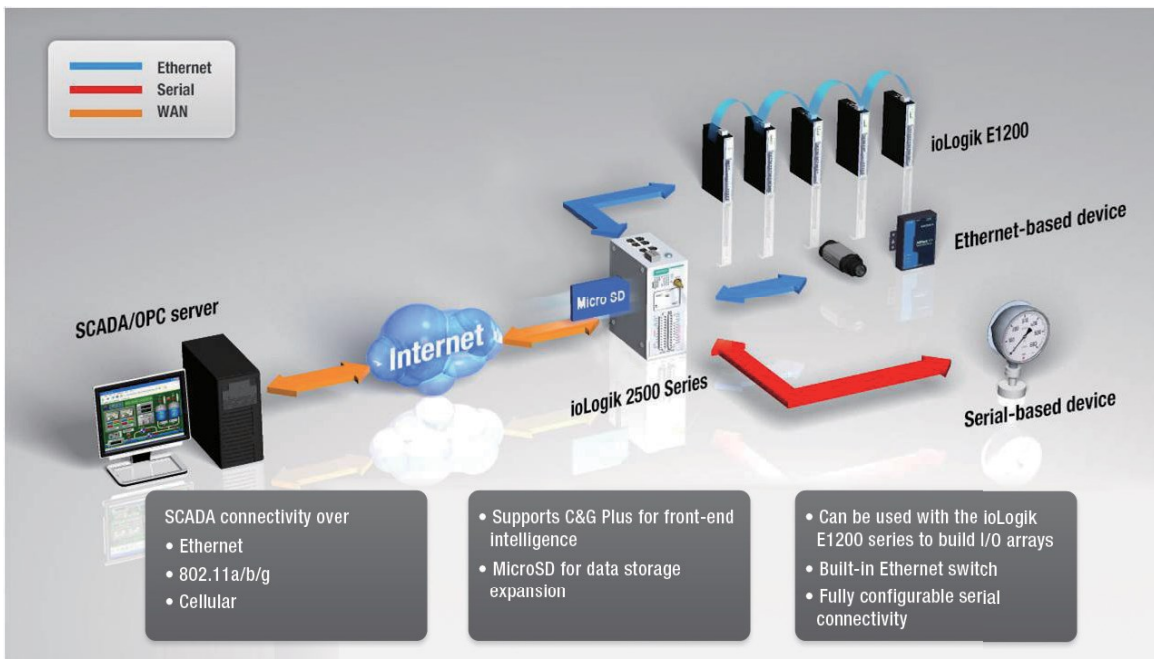
The ioLogik 2500 Series supports micro SD cards with up to 32 GB of memory, turning the ioLogik into a powerful datalogger for storing valuable data. And with a built-in FTP server, important data from field sites can be accessed remotely by different systems. In addition, the 2 serial communication ports can be used to input data from devices using the Modbus RTU protocol, and then transform the data into Modbus TCP or AOPC tag format before sending it out over the Ethernet network.



New MX-AOPC UA Server Efficiently Reduces System Response Time

The new MX-AOPC UA supports both UA server and DA server types. MX-AOPC UA server has a number of strengths. UA server provides a standard, state of the art security model, assuring your system's security, and supports communication channels via the standard UA TCP port. This means that messages can be relayed through third party proxies. In addition, configuring the firewall is easier, since you won't need to worry about DCOM settings.

In addition, MX-AOPC supports both the traditional Modbus protocol and Moxa's patented Push type communication. Unlike the traditional passive "pull" method, "active" messages are automatically "pushed" from the ioLogik 2500 to the SCADA system when the I/O state changes or pre-configured events occur. In this way, information can be accurately and efficiently pushed to the SCADA system as it becomes available.



ioLogik 2512 Specifications

Inputs and Outputs

Digital Inputs: 8 channels
Configurable DIOs (by software): 8 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 COM):

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

Common Type: 8 points per COM

Counter Frequency: 2.5 kHz

Digital Filtering Time Interval: Software configurable

Digital Output

Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency: 5 kHz
Over-Voltage Protection: 45 VDC
Over-Current Protection: 1.5 A per channel @ 25°C
Over-Temperature Shutdown: 175°C (min.)
Current Rating: 500 mA per channel @ 25°C
DIO Output Leakage Current: < 1 mA @ 30 VDC

Power Requirements

Input Voltage: 9 to 48 VDC
Input Current: 274 mA @ 24 VDC

MTBF (mean time between failures)

Time: 467,032 hrs

Standard: Telcordia SR332

ioLogik 2542 Specifications

Inputs and Outputs

Configurable DIOs (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 COM):

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

Common Type: 6 points per COM

Counter Frequency: 2.5 kHz

Digital Filtering Time Interval: Software configurable

Digital Output

Type: Sink

I/O Mode: DO or Pulse Output

Pulse Output Frequency: 5 kHz

Over-Voltage Protection: 45 VDC

Over-Current Protection: 1.5 A per channel @ 25°C

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

Current Rating: 500 mA per channel @ 25°C

DIO Output Leakage Current: < 1 mA @ 30 VDC

Analog Input

Type: Differential input

Resolution: 16 bits

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

Input Range: ±10 V, 0 to 10 V, 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 @ -30 and 70°C

Sampling Rate:

- All channels: 400 samples/sec
- Per channel: 100 samples/sec

Input Impedance: 1 mega-ohm (min.)

Built-in Resistor for Current Input: 120 ohms

Power Requirements

Input Voltage: 9 to 48 VDC

Input Current: 358 mA @ 24 VDC

MTBF (mean time between failures)

Time: 375,439 hrs

Standard: Telcordia SR332

Common Specifications

LAN

Ethernet:

- 4 switched 10/100 Mbps RJ45 ports
- 1 optimized port for faster downstream communications with daisy-chained ioLogik E1200 units

Note: The optimized daisy-chain port is not supported by the ioLogik E1261W-T, E1261H-T, or E1263H-T.

Protection: 1.5 kV magnetic isolation

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

Serial

Interface: 2 RS-232/422/485 (software selectable) RJ45 ports

Parity: None, Odd, Even

Data Bits: 5, 6, 7, 8

Stop Bits: 1, 2

Flow Control: None, RTS/CTS, XON/XOFF

Baudrate: 300 to 115200 bps

Protocols: Modbus/RTU (master/gateway), serial tunnel mode (client/server)

Physical Characteristics

Wiring: I/O cable max. 14 AWG

Dimensions: 61 x 157 x 115 mm (2.4 x 6.18 x 4.53 in)

Weight: Under 1265 g (2.79 lb)

Mounting: DIN-rail (standard), wall (with optional kit)

Storage

Expansion Slot: Up to 32 GB microSD™ memory card (SDHC compatible)

Note: For units operating in extreme temperatures, industrial-grade, wide-temperature SD cards are required.

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 55022/24, 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

IEC 61000-4-4 EFT: Power: 1 kV; Signal: 0.5 kV

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

IEC 61000-4-6 CS: 3 V

IEC 61000-4-8

Hazardous Location: Class 1 Division 2; ATEX Zone 2

Green Product: RoHS, CRoHS, WEEE

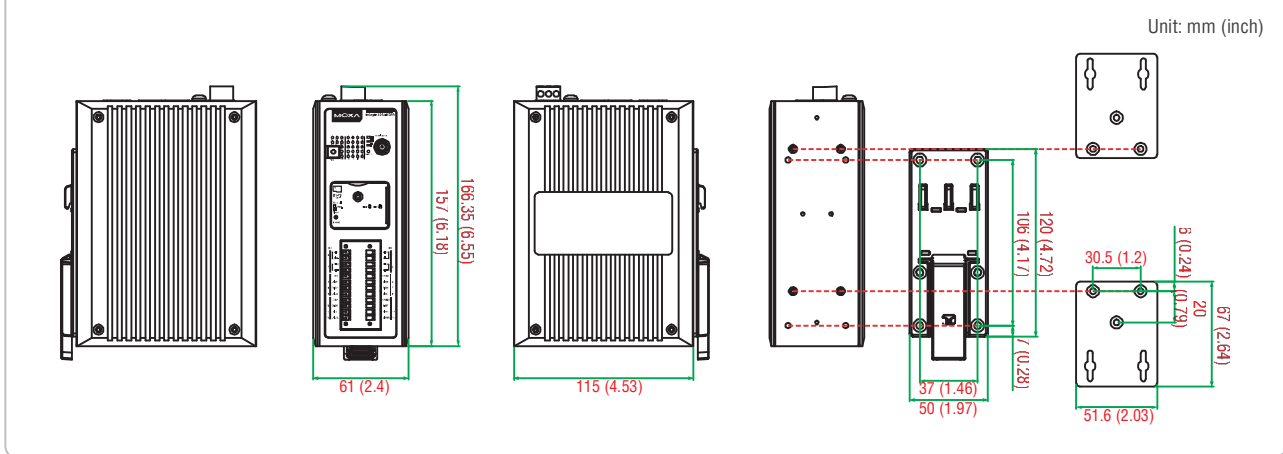
Note: Please check Moxa's website for the most up-to-date certification status.

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions



Ordering Information

Available Models

ioLogik 2512: Smart Ethernet remote I/O with Click&Go Plus, 8 DIs, 8 DI0s, -10 to 60°C operating temperature

ioLogik 2512-T: Smart Ethernet remote I/O with Click&Go Plus, 8 DIs, 8 DI0s, -40 to 75°C operating temperature

ioLogik 2542: Smart Ethernet remote I/O with Click&Go Plus, 12 DI0s, 4 AIs, -10 to 60°C operating temperature

ioLogik 2542-T: Smart Ethernet remote I/O with Click&Go Plus, 12 DI0s, 4 AIs, -40 to 75°C operating temperature

Optional Accessories (can be purchased separately)

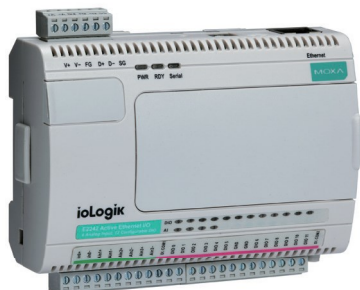
WK-51-01: DIN-rail/wall-mounting kit, 2 plates with 6 screws

Package Checklist

- ioLogik 2500
- RJ45-to-DB9 connection cables x 2
- Documentation and software CD
- Hardware installation guide

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

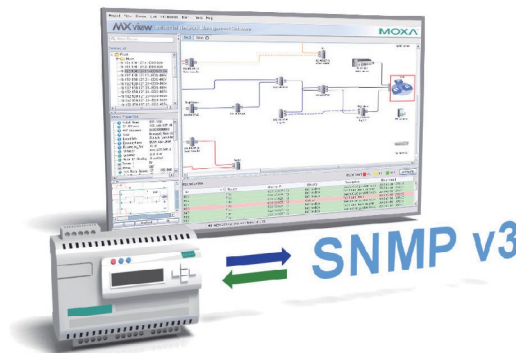
The ioLogik E2200 supports simple and powerful Click&Go™ technology to configure event-driven reports and alarms delivered over email, TCP/UDP, or SNMP traps, giving you a powerful effective, tool for delivering time-stamped status updates in real time.

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, SNMP, 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.

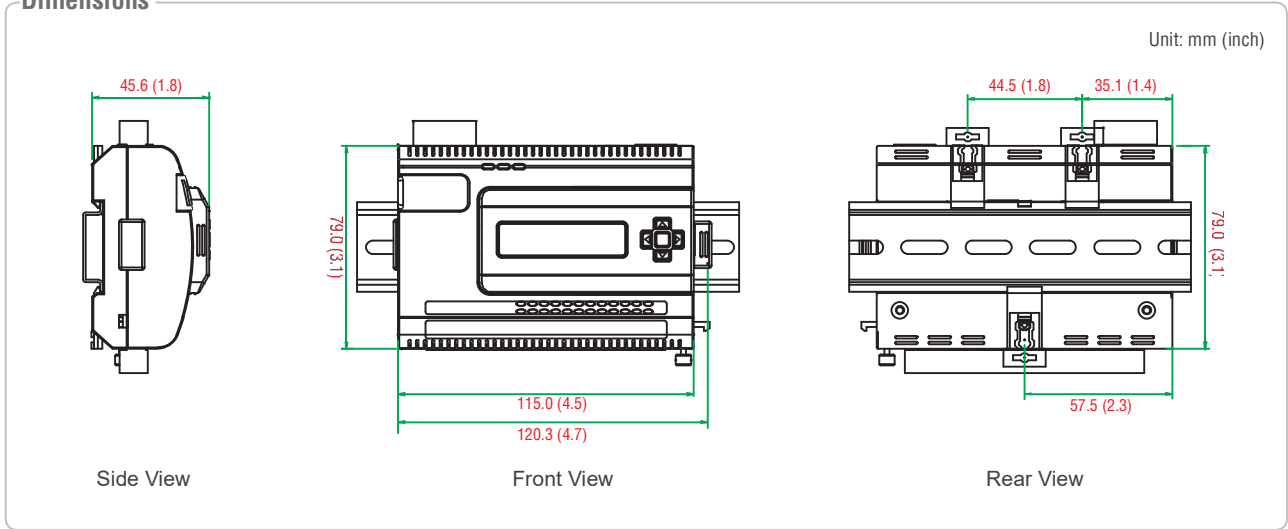
Warranty

Warranty Period: 5 years (excluding ioLogik E2214*)

Details: See www.moxa.com/warranty

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

Dimensions



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