ioLogik W5300 Series

Cellular micro RTU controllers

> Easily manage device over dynamic/private IP cellular network
> Active communication with patented Active OPC Server
> Automatically complement disconnection period data with DA-Center software
> Front-end intelligence options:
> • Supports C/C++ programming language
> • Supports patented Click&Go control logic, up to 24 rules
> Smart alarm management with SMS, e-mail, SNMP Trap, TCP, UDP
> 3-in-1 RS-232/422/485 serial port for connecting to field serial devices
> Up to 32GB SDHC data logging function
> Simplify I/O management with MXIO library for Windows or Linux

: Introduction

The ioLogik W5300 series are hardy, metal encased all-in-one micro RTU controllers that combine a cellular modem, an I/O controller, and a data logger into a compact device that provides complete communication redundancy with built-in GPRS/HSDPA. Along with a variety of mixed I/O combinations, users can choose Moxa's patented Click&Go for effortless and fast installations, or choose standard C/C++ for more application-oriented and advanced customizations. The ioLogik W5300 supports stand-alone data logging in a storage space expandable up to 32 GB, and comes with the innovative, patented Active OPC Server software, based on push technology. Users can expect many significant value-added benefits that include reductions in data transmission, lowered hardware costs, and reduced deployment and maintenance costs.

These sleek RTUs provide benefits beyond mere RTU performance, and are ideal solutions for any number of industrial applications, such as:

• Pipeline Monitoring for Water, Oil , and Gas
• Pump Station Monitoring and Lift Station Monitoring
• Environmental Monitoring
• Security and Surveillance

ioLogik W5300 Series Selection Table

Models		I/O Combinations					Programming
Standard Temperature (-10 to 55°C)	Wide Temperature (-30 to 70°C)	Digital Inputs	Digital Outputs	Analog Inputs	Relay Outputs	Configurable DIOs	
ioLogik W5312	ioLogik W5312-T (-30 to 70°C)	8	8	–	–	4	Click&Go
ioLogik W5340	ioLogik W5340-T (-30 to 70°C)	–	–	4	2	8	Click&Go
ioLogik W5340-HSDPA	ioLogik W5340-HSDPA-T (-20°C to 70°C)	–	–	4	2	8	Click&Go
ioLogik W5348-HSDPA-C	ioLogik W5348-HSDPA-C-T (-20°C to 70°C)	–	–	4	2	8	C/C++

⦂ ioLogik W5312 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: 160°C (min.)
Current Rating: 200 mA per channel
DIO Output Leakage Current: 3.6 mA @ 24 VDC

Power Requirements
Power Consumption:
• Always on: 156 mA @ 24 VDC
• On demand: 138 mA @ 24 VDC

MTBF (mean time between failure)
Time: 407,406 hrs
Database: Telcordia (Bellcore)

⦂ ioLogik W5340/W5348 Specifications

Inputs and Outputs
Analog Inputs: 4 channels
Configurable DIOs: 8 channels
Relay Outputs: 2 channels
Isolation: 3K VDC or 2K Vrms

Analog Input
Type: Differential input
Resolution: 16 bits
I/O Mode: Voltage / Current
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:
W5340:
• All channels: 25 samples/sec
• Per channel: 6.25 samples/sec
• Only one channel enabled: 100 samples/sec
W5348:
• All channels: 5 samples/sec
• Per channel: 1.25 samples/sec
Input Impedance: 200K ohms (min.)
Built-in Resistor for Current Input: 102 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: 4 points per COM
Counter Frequency:
• W5340: 900 Hz, power off storage
• W5348: 25 Hz
Digital Filtering Time Interval: Software selectable/Programmable

Digital Output
Type: Sink
I/O Mode: DO or Pulse Output
Pulse Output Frequency:
• W5340: 1 kHz
• W5348: 50 Hz
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 Output
Type: Form A (N.O.) power relay
Contact Current Rating:
• Resistive Load: 1 A @ 30 VDC, 250 VAC, 110 VAC
Initial Insulation Resistance: 1000 m ohms (min.) @ 500 VDC
Mechanical endurance: 5,000,000 operations
Electrical endurance: 600,000 operations @ 1 A resistive load
Contact Resistance: 100 m ohms (max.)
Pulse Output: 0.3 Hz at rated load

Power Requirements
Power Consumption:
ioLogik W5340:
• Always on: 195 mA @ 24 VDC
• On demand: 178 mA @ 24 VDC
ioLogik W5340-HSDPA/ioLogik W5348-HSDPA-C:
• Always on: 196 mA @ 24 VDC
• On demand: 189 mA @ 24 VDC

MTBF (mean time between failure)
Time:
ioLogik W5340: 196,561 hrs
ioLogik W5340-HSDPA/W5348-HSDPA-C: 280,739 hrs
Database: Telcordia (Bellcore)

: Common Specifications

Computer
CPU: ARM9 based CPU, 32-bit/160 MHz
SDRAM/Flash:
• ioLogik W5312/W5340: 4 MB / 2 MB
• ioLogik W5348: 64 MB / 32 MB

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.

Cellular
Network:
ioLogik W5312/W5340:
• Quad-band GSM/GPRS/EDGE 850/900/1800/1900 MHz
ioLogik W5340-HSDPA/W5348-HSDPA-C:
• Tri-band UMTS/HSDPA 850/1900/2100 MHz
• Quad-band GSM/GPRS/EDGE 850/900/1800/1900 MHz
Internet:
HSDPA:
• Up to 3.6M bps upload speed.
• Up to 384k bps download speed.
UMTS:
• Up to 384k bps upload/download speed.
GPRS/EDGE:
• Multi-slot class: Class 10
• Coding schemes: CS 1-4, MCS 1-9
• Terminal device class: Class B
SMS: Point-to-Point Text/PDU mode
SIM Control Voltage: 3 V

LAN
Ethernet: 1 x 10/100 Mbps, RJ45
Protection: 1.5 KV magnetic isolation
Protocols: Modbus/TCP, TCP/IP, UDP, DHCP, Bootp, SNMP, SNTP

Serial Communication
Interface:
ioLogik W5312/W5340:
1 x RS-232/422/485, software selectable
(9-pin D-Sub male, or 5-contact terminal block)
ioLogik W5348:
2 x RS-232/422/485, software selectable (9-pin D-Sub male)
Baudrate:
300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps

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

Physical Characteristics
Dimensions: 46.8 x 135 x 105 mm (1.84 x 5.31 x 4.13 in)
Weight: 495 g
Mounting: DIN-rail (standard), wall (optional)

Environmental Limits
Operating Temperature:
Standard Models: -10 to 55°C (14 to 131°F)
Wide Temp. Models:
ioLogik W5312/W5340: -30 to 70°C (-22 to 158°F)
ioLogik W5340-HSDPA/W5348-HSDPA-C: -20 to 70°C (-4 to 158°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, EN 60950-1, NCC
EMI:
EN 55022; EN 61000-3-2; EN 61000-3-3;
FCC Part 15, Subpart B, Class A
EMS: EN 55024, 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
Mobile Network: PTCRB
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.
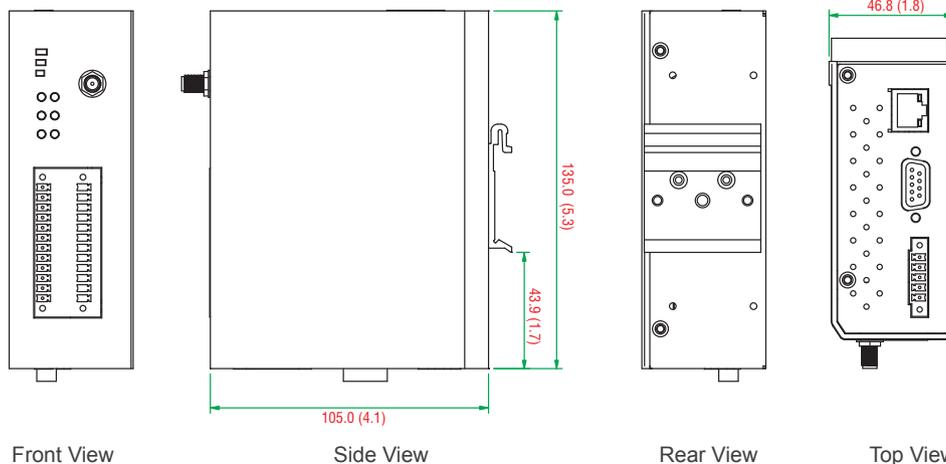
Warranty
Warranty Period:
• ioLogik W5312: 5 years
• ioLogik W5340/W5340-HSDPA/W5348-HSDPA-C: 2 years*
*Because of the limited lifetime of power relays, products that use that component are covered by a 2-year warranty.
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)

Front View   Side View   Rear View   Top View

: Ordering Information

Available Models
ioLogik W5312: GPRS micro RTU controller with 8 DIs, 4 DIOs, 8 DOs, -10 to 55°C operating temperature
ioLogik W5312-T: GPRS micro RTU controller with 8 DIs, 4 DIOs, 8 DOs, -30 to 70°C operating temperature
ioLogik W5340: GPRS micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, -10 to 55°C operating temperature
ioLogik W5340-T: GPRS micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, -30 to 70°C operating temperature
ioLogik W5340-HSDPA: HSDPA micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, -10 to 55°C operating temperature
ioLogik W5340-HSDPA-T: HSDPA micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, -20 to 70°C operating temperature
ioLogik W5348-HSDPA-C: HSDPA micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, C/C++ programming, -10 to 55°C operating temperature
ioLogik W5348-HSDPA-C-T: HSDPA micro RTU controller with 4 AIs, 8 DIOs, 2 Relays, C/C++ programming, -20 to 70°C operating temperature

Optional Accessories (can be purchased separately)
WK-36-02: Wall mount kit for ioLogik W5348 series
WK-46: Wall mount kit for ioLogik W5312/W5340 series

Package Checklist
- ioLogik W5300 Series Device
- Quad-band antenna with GSM/GPRS, omnidirection, 0 dBi, magnetic SMA, 3M (W5312/W5340 only)
- Five-band antenna with GSM/GPRS/UMTS/HSDPA, omnidirection, 4 dBi, magnetic SMA, 2.5M (W5340-HSDPA/W5348-HSDPA-C only)
- Documentation and software CD
- Serial console cable x1 (W5348-HSDPA-C only)