## ioLogik W5300 Series

### Cellular micro RTU controllers

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 32GB, 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.

### Introduction

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 & Gas
- Pump Station Monitoring / Lift Station Monitoring
- Environmental Monitoring
- Security & Surveillance

### ioLogik W5300 Series Selection Table

<table>
<thead>
<tr>
<th>Models</th>
<th>I/O Combinations</th>
<th>Configurable DIOs</th>
<th>Programming</th>
</tr>
</thead>
<tbody>
<tr>
<td>ioLogik W5312</td>
<td>8 Digital Inputs, 8 Digital Outputs, – Analog Inputs, – Relay Outputs</td>
<td>4</td>
<td>Click&amp;Go</td>
</tr>
<tr>
<td>ioLogik W5312-T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ioLogik W5340</td>
<td>4 Digital Outputs, 2 Relay Outputs</td>
<td>8</td>
<td>Click&amp;Go</td>
</tr>
<tr>
<td>ioLogik W5340-T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ioLogik W5340-HSDPA</td>
<td>4 Digital Outputs, 2 Relay Outputs</td>
<td>8</td>
<td>Click&amp;Go</td>
</tr>
<tr>
<td>ioLogik W5340-HSDPA-T</td>
<td>– Analog Inputs, 4 Relay Outputs</td>
<td>8</td>
<td>C/C++</td>
</tr>
<tr>
<td>ioLogik W5348-HSDPA-C</td>
<td>- Digital Inputs, 4 Digital Outputs, 2 Relay Outputs</td>
<td>8</td>
<td>C/C++</td>
</tr>
</tbody>
</table>

*Note: The models listed above are for reference only. Additional models and specifications may be available.*
### 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

### Inputs and Outputs

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Configurable DIOs</td>
<td>4 channels</td>
</tr>
<tr>
<td>Isolation</td>
<td>3K VDC or 2K Vrms</td>
</tr>
</tbody>
</table>

**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 (all channels):**
  - W5340: 100 samples/sec
  - W5348: 5 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: 250 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: 500 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)
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
- Tri-band UMTS/HSDPA 850/900/1900 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)

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

Front View
Side View
Rear View
Top View

Unit: mm (inch)
### 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 WS300 Series Device  
- Quad-band antenna with GSM/GPRS, omnidirectional, 0 dBi, magnetic SMA, 3M (W5312/W5340 only)  
- Five-band antenna with GSM/GPRS/UMTS/HSDPA, omnidirectional, 4 dBi, magnetic SMA, 2.5M (W5340-HSDPA/W5348-HSDPA-C only)  
- Documentation and software CD  
- Serial console cable x1 (W5348-HSDPA-C only)