The W600 series controllers provide reliable, flexible and powerful control for your water treatment program.

Summary of Key Benefits

- Large touchscreen display with icon based programming makes setup easy
- Universal sensor input provides extraordinary flexibility; the same controller can be used with almost any type of sensor needed
- Combination Sensor input and Analog input board that add even more flexibility
- Lead/Lag control of up to 8 relays
- Optional dual analog (4-20 mA) input for Fluorometers or nearly any other process value
- Multiple language support allows simple setup no matter where your business takes you
- Six control outputs allow the controller to be used in more applications
- Economical wall-mount package for easy installation

The W600 with an optional chlorine sensors can be used for reporting chlorine residual measurements in accordance with EPA Method 334.0.

- Complete flexibility in the function of each relay
  - On/OFF Setpoint
  - Time Proportional Control
  - Pulse Propotional Control (when purchased with 4-20mA or pulse solid state opto outputs)
  - PID Control (when purchased with 4-20mA or pulse solid state opto outputs)
  - In-Range or Out-Of-Range activation
  - Probe wash
  - Timer-based activation
  - Activation based upon the state of a contact closure
  - Timed activation triggered by a Water Contactor or Paddlewheel flow meter’s accumulated total flow
  - Activate with another output
  - Activate as a percent of another output’s on-time
  - Alarm
  - Split Set Point
  - For Cooling Tower and Boiler applications:
    - Biocide Temp
    - Boiler blowdown on conductivity using intermittent sampling

- Dialoging
- Emailing Alarm messages, Datalog reports or System Summary reports
- Ethernet option for remote access via the Internet, LAN or Modbus/TCP
**Specifications**

**Inputs**

- **Power**: 100-240 VAC, 50 or 60 Hz, 7 A max, Pure 6.3 Amp
- **Sensor Input Signals**: 0, 1 or 2 depending on model code
- **Digital Input Signals**: 6
- **Sensor Input Signals (0, 1 or 2 depending on model code)**
- **Digital Input Signals (6)**
- **100-240 V**
- **Powered Mechanical Relays (0 or 6 model code dependent)**
- **Outputs**
  - 4 - 20 mA (0 or 2 model code dependent)
  - Pulse Outputs (0, 2 or 4 model code dependent)
- **Dry Contact Mechanical Relays (0, 2 or 4 model code dependent)**

**Analog (4-20 mA) Sensor Input** (0, 1 or 2 depending on model code)

- 2-wire loop powered and self-powered transmitters supported
- 1-wire 4 - axle transmitters supported

Each dual sensor input board has two channels: Channel 1, 130 Ohm input resistance and Channel 2, 280 Ohm input resistance. The combination input board has one channel, 280 Ohm input resistance.

Available Power: One independent isolated 24 VDC ±15% supply per channel. 1.5 W maximum for each channel. 200 mA (max) at 24 VDC total power consumption for all channels (four total channels possible if two dual boards are available for external preamps).

Amplified pH or ORP which requires a preamplified signal. Walchem WEL or WDS series recommended. ±5VDC power available for external preamps.

- **Temperature**: 100 or 1000 ohm RTD, 10K or 100K Thermistor
- **Pulse Outputs (0, 2 or 4 model code dependent)**

**Measurement Performance**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH Cell Conducting Conductivity</td>
<td>0 - 14000 ohm</td>
<td>±0.0001% of reading</td>
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<tr>
<td>ORP Cell Conducting Conductivity</td>
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<tr>
<td>Contacting Conductivity</td>
<td>0 - 14000 ohm</td>
<td>±0.0001% of reading</td>
<td>±0.001% of reading</td>
</tr>
<tr>
<td>Electrodeless Conductivity</td>
<td>0 - 14000 ohm</td>
<td>±0.0001% of reading</td>
<td>±0.001% of reading</td>
</tr>
<tr>
<td>Temperature</td>
<td>0 - 100°F (32 - 38°C)</td>
<td>±0.1°F (±0.06°C)</td>
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</tr>
<tr>
<td>Temperature</td>
<td>0 - 200°F (32 - 93°C)</td>
<td>±0.5°F (±0.3°C)</td>
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</tr>
<tr>
<td>Temperature</td>
<td>0 - 300°F (32 - 149°C)</td>
<td>±1°F (±0.5°C)</td>
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</tr>
<tr>
<td>Temperature</td>
<td>0 - 500°F (32 - 260°C)</td>
<td>±2°F (±1°C)</td>
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</tbody>
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**Mechanical (Controller)**

- **Display**: PolyCarbonate
- **Enclosure Material**: NEMA 4X (IP65)
- **Enclosure Rating**: NEMA 4X (IP65)
- **Dimensions**: 9.5 x 8 x 4” (241 x 203 x 102 mm)
- **Display**: 120 x 240 pixel monochrome backlit display with touchscreen
- **Ambient Temperature**: 0 - 115°F (60 - 45°C)
- **Storage Temperature**: -40 to 176°F (-60 to 80°C)

**Agency Certifications**

- **Safety**: UL 61010-1:2012, 3rd Edition
- **CE**
- **International Standards**
- **ISO 9001:2008 certified**
- **ISO 14001:2004**
- **OSHA**
- **REACH**
- **RoHS**

**Mechanical (Sensors)**

- **Pressure**
- **Temperature**
- **Materials**
- **Pressure Connections**

**Specifications**

**Inputs**

- **Power**: 100-240 VAC, 50 or 60 Hz, 7 A max, Pure 6.3 Amp
- **Sensor Input Signals**: 0, 1 or 2 depending on model code
- **Digital Input Signals**: 6
- **100-240 V**
- **Powered Mechanical Relays (0 or 6 model code dependent)**
- **Outputs**
  - 4 - 20 mA (0 or 2 model code dependent)
  - Pulse Outputs (0, 2 or 4 model code dependent)
- **Dry Contact Mechanical Relays (0, 2 or 4 model code dependent)**

**Analog (4-20 mA) Sensor Input** (0, 1 or 2 depending on model code)

- 2-wire loop powered and self-powered transmitters supported
- 1-wire 4 - axle transmitters supported

Each dual sensor input board has two channels: Channel 1, 130 Ohm input resistance and Channel 2, 280 Ohm input resistance. The combination input board has one channel, 280 Ohm input resistance.

Available Power: One independent isolated 24 VDC ±15% supply per channel. 1.5 W maximum for each channel. 200 mA (max) at 24 VDC total power consumption for all channels (four total channels possible if two dual boards are available for external preamps).

Amplified pH or ORP which requires a preamplified signal. Walchem WEL or WDS series recommended. ±5VDC power available for external preamps.

- **Temperature**: 100 or 1000 ohm RTD, 10K or 100K Thermistor
- **Pulse Outputs (0, 2 or 4 model code dependent)**

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<td>±0.001% of reading</td>
</tr>
<tr>
<td>Conducting Conductivity</td>
<td>0 - 14000 ohm</td>
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<td>±0.001% of reading</td>
</tr>
<tr>
<td>Contacting Conductivity</td>
<td>0 - 14000 ohm</td>
<td>±0.0001% of reading</td>
<td>±0.001% of reading</td>
</tr>
<tr>
<td>Electrodeless Conductivity</td>
<td>0 - 14000 ohm</td>
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**Mechanical (Controller)**

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- **Enclosure Material**: NEMA 4X (IP65)
- **Enclosure Rating**: NEMA 4X (IP65)
- **Dimensions**: 9.5 x 8 x 4” (241 x 203 x 102 mm)
- **Display**: 120 x 240 pixel monochrome backlit display with touchscreen
- **Ambient Temperature**: 0 - 115°F (60 - 45°C)
- **Storage Temperature**: -40 to 176°F (-60 to 80°C)

**Agency Certifications**

- **Safety**: UL 61010-1:2012, 3rd Edition
- **CE**
- **International Standards**
- **ISO 9001:2008 certified**
- **ISO 14001:2004**
- **OSHA**
- **REACH**
- **RoHS**

**Mechanical (Sensors)**

- **Pressure**
- **Temperature**
- **Materials**
- **Pressure Connections**

---

**Note**: For EN61000-4-6, EN61000-4-3 the controller met performance criteria B. This equipment is suitable for use in establishments other than domestic and those directly connected to a low-voltage (100-240 VAC) power supply network which supplies buildings used for domestic purposes.
Specifications

Inputs

- **Power**: 100-240 VAC, 50 or 60 Hz, 7A max, Pure 6.3 Amp
- **Sensor Input Signals (0, 1 or 2 depending on model code)**: Conducting Contact: 0.01, 0.1 or 1.0 Volts, constant, or Electrodes: Conductivity (not available on the combination sensor/analyzing card) or pH/ORP (not available on the combination sensor/analyzing card)
- **Electrical**: Amplified pH or ORP which requires a preamplified signal. Walchem WEL or WDS series recommended. ±5VDC power available for external processing
- **Each sensor input card contains a temperature input. Temperature: 100 or 1000 ohm RTD, 0 to 100°F (31.1°C to 37.8°C) or DPT Thermistor
- **Analog (4-20 mA) Sensor Input (0, 1, 2 or 4 depending on model code)**: 2-wire loop powered and self-powered transmitters supported
- **Digital Input Signals (6)**: 100-240 V

Ports

- **100-240 V**
- **Inputs**: Powered Mechanical Relays (0 or 6 model code dependent)
- **Outputs**: 4 - 20 mA (0 or 2 model code dependent)

Pumps

- **Hydrogen Peroxide**: 0-14.7 psi (0-1 bar) 32-131°F (0-55°C)
- **Hydrochloric Acid**: 0-14.7 psi (0-1 bar) 32-113°F (0-45°C)
- **Chlorine/Bromine**: 0-14.7 psi (0-1 bar) 32-113°F (0-45°C)
- **Glacial Acetic Acid**: 0-14.7 psi (0-1 bar) 32-131°F (0-55°C)
- **Chlorine Dioxide**: 0-14.7 psi (0-1 bar) 32-131°F (0-55°C)

Measuring Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
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<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity Conductivity</td>
<td>0 - 2,000,000 µS/cm</td>
<td>10 µS/cm</td>
<td>±1% of reading</td>
</tr>
<tr>
<td>pH/ORP</td>
<td>0 - 16 pH units</td>
<td>0.01 pH units</td>
<td>±0.01% of reading</td>
</tr>
<tr>
<td>Contacting Conductivity</td>
<td>0-300,000,000 µS/cm</td>
<td>100 µS/cm</td>
<td>±1% of reading</td>
</tr>
<tr>
<td>ORP (High Pressure Tower)</td>
<td>0-300 psi (0-21 bar)</td>
<td>32-158°F (0-70°C)</td>
<td>316SS, PEEK 3/4&quot; NPTM</td>
</tr>
</tbody>
</table>

Mechanical (Sensor)

- **Sensors**: Electrochemical sensors, not available on the combination sensor/analyzing card

Agency Certifications

- **Safety**: UL 61010-1:2012, 3rd Edition
- **Materials**:
  - Polypropylene
  - Suitable for USE in
  - PVC, Polyethylene
  - FKM, PVC
  - CNH:
  - Polyethylene
  - Polyethylene
  - FKM, HNBR
  - 1/2" SAE - 3/4" NPTF

Note: For EN1000-4-4, EN1000-4-3 the controller met performance criteria B. This equipment is suitable for use in establishments other than domestic and those directly connected to a low-voltage (100-240 VAC) power supply network, which supplies buildings used for domestic purposes.
Specifications

Inputs

Power
100-240 VAC, 50 or 60 Hz, 7A max.
Pulse: 6.5 A

Sensor Input Signals

- 0, 1 or 2 depending on model code
- Conducting Contact: 0, 0.1, 0.2 or 10 A

- Conductivity: 0, 10 or 20 A

- Electrodes: Conductivity: not available on the combination sensor/analog input card

- Conductivity: not available on the combination sensor/analog input card

- Digital Input Signals

- 0, 1 or 6 model code dependent

- Outputs

- 100-240 V

- Powered Mechanical Relays

- 0 or 6 model code dependent

- Outputs

- Dry Contact Mechanical Relays

- 0, 2 or 4 model code dependent

- Outputs

- High Speed Counter-Type Digital Inputs

- Contacting Flowmeter

- Contacting Conductivity

- Electrodeless Conductivity

Electrical: Optically isolated and providing an electrically isolated 9V power with a nominal 2.3mA current when the digital input switch is closed. Typical response time: < 2 seconds. Devices supported: Any isolated dry contact (i.e. relay, reed switch). Types: Paddlewheel Flowmeter, Contacting Flowmeter, Contacting Conductivity, Electrodeless Conductivity.

Measuring Performance

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Performance</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH Input Card</td>
<td>0 to 14</td>
<td>0.1 pH</td>
<td>±0.2 pH</td>
</tr>
<tr>
<td>pH Input Card</td>
<td>0 to 4</td>
<td>1 mV</td>
<td>±1 mV</td>
</tr>
</tbody>
</table>

Mechanical (Controller)

- Power supply: 100-240 VAC, 50 or 60 Hz
- Dimensions: 9.5 x 8 x 4” (241 x 203 x 102 mm)
- Weight: 10.3 lbs (4.6 kg)

Mechanical (Sensors)

- Power supply: 100-240 VAC, 50 or 60 Hz
- Dimensions: 10.3 x 8.4 x 4.1” (262 x 214 x 104 mm)
- Weight: 13.8 lbs (6.3 kg)

Agency Certifications

- UL 61010-1:2012, 3rd Edition
- CSA C22.2 No.61010-1:2012, 3rd Edition
- IEC 61010-1:2010 3rd Edition
- EN 61010-1:2010 3rd Edition

Note: For EN1600-4-6, EN1600-4-3 the controller met performance criteria B. This equipment is suitable for use in establishments other than domestic and those directly connected to a low-voltage (100-240 VAC) power supply network which supplies buildings used for domestic purposes.
Panel Mounted Flow Switch Manifold Dimensions

W600-DS-PN 22.5”
W600-DS-PX 24”
W600-CT-BH, BI, BJ
W600-CT-DE/DF 22.5”
W600-CT-HA, HB, HC 24”
W600-CT-HQ, HU 24”
W600-CT-HR, HS, HT 24”
W600-PH-QN/QX 22.5”

Tolerances: +/- 0.1” (2.5 mm) +/- 0.3” (8 mm) +/- 0.01”

Example: W600-DS-PN 22.5”

Ordering Information

W600 Series Controllers

The W600 series provides reliable, flexible and powerful control for your water treatment program.

Summary of Key Benefits

- Large touchscreen display with icon based programming makes setup easy
- Universal sensor input provides extraordinary flexibility; the same controller can be used with almost any type of sensor needed
- Combination Sensor Input and Analog Input board that add even more flexibility
- Lead/Lag control of up to 6 relays
- Optional dual analog (4-20 mA) input for Fluorometers or nearly any other process value
- Multiple language support allows simple setup no matter where your business takes you
- On-screen and web page graphing of sensor values and control output status
- Two Virtual Inputs that are calculated from two real inputs (cycles of concentration, % rejection, etc.)

The W600 with automatic chlorine sensors can be used for reporting chlorine residual measurements in accordance with EPA Method 334.0.

- Complete flexibility in the function of each relay:
  - ON/OFF Setpoint
  - Time Proportional Control
  - Pulse Proportional Control (when purchased with 4-20mA or pulse solid state opto outputs)
  - PID Control (when purchased with 4-20mA or pulse solid state opto outputs)
  - On-Range or Out-of-Range activation
  - Probe wash
  - Timer-based activation
  - Activation based upon the state of a contact closure
  - Timed activation triggered by a Water Contactor or Paddlewheel flow meter’s accumulated total flow
  - Activate with another output
  - Activate as a percent of another output’s on-time
  - Alarm
  - Spike Set Point
  - For Cooling Tower and Boiler applications:
    - Boost Time
    - Boiler blowdown on conductivity using intermittent sampling

Controlling
- Empowering with An Inter/internet connection Between the Sensor and the Controller: Ethernet option for remote access via the Internet, LAN or Modbus/TCP

Conductivity, pH/ORP & Disinfection

Dimensions