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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay:
- On/Off Setpoint
- Time Proportional Control
- Alarm
- Sensors #1-5
- Spike Set Point
- Boiler blowdown on conductivity using intermittent sampling
- Eight virtual inputs and eight virtual outputs
- Eight relay control outputs allow the controller to be used in more applications
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Model Code

<table>
<thead>
<tr>
<th>W</th>
<th>CT</th>
<th>999P</th>
<th>989P</th>
<th>A92D</th>
<th>W</th>
<th>M</th>
<th>S</th>
<th>AN9HM</th>
</tr>
</thead>
</table>

W900 Series Controllers

The W900 series provides reliable, flexible and powerful control for your water treatment program.

Dimensions
Polycarbonate

Digital Input Signals (12)
- Contacting Conductivity
- 4 - 20 mA (0-16 model code dependent)
- 2-wire and 3-wire transmitters supported
- 200,000 - 2,000,000 µS/cm
- 100 µS/cm, 0.1 mS/cm, 1 mS/m, 0.01 S/m, 100 ppm ±1% of reading

Electrodeless Conductivity
- 50,000 - 500,000 µS/cm
- 10 µS/cm, 0.1 mS/cm, 1 mS/m, 0.01 S/m, 10 ppm ±1% of reading

- 10,000 - 150,000 µS/cm
- 10 µS/cm, 0.1 mS/cm, 1 mS/m, 0.01 S/m, 10 ppm ±1% of reading

- 3,000 - 40,000 µS/cm
- 1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 ppm ±1% of reading

- 0 - 2 ppm to 0 - 20,000 ppm

ORP/Ion Selective Electrode
- High Pressure
- 0-300 psi (0-21 bar)*
- 32-275°F (0-135°C)*
- Platinum, Polymer, PTFE, 316SS, Glass-filled PP, 3/4” NPTM

- Low Pressure
- 0-150 psi (0-10 bar)*
- 32-158°F (0-70°C)*
- 316SS, Glass-filled PP, PEEK, FKM o-ring, 3/4” NPTM

- Contacting Conductivity
- 0-250 psi (0-17 bar) 32-401°F (0-205°C)
- 316SS, PEEK 3/4” NPTM

- Flow switch manifold
- 0-150 psi (0-10 bar) up to 100°F (38°C)*
- 0-50 psi (0-3 bar) at 140°F (60°C)

- Chlorine/Bromine
- 0-14.7 psi (0-1 bar) 32-113°F (0-45°C)

- Ozone
- 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)

- Peracetic Acid
- 0-14.7 psi (0-1 bar) 32-131°F (0-55°C)

- Mechanical (Sensor) [two graph]

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Pressure</th>
<th>Temperature</th>
<th>Materials</th>
<th>Process Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity</td>
<td>0.1 mV (±1 mV)</td>
<td>32°F to 158°F (0°C to 70°C)</td>
<td>PVC, Polypropylene, Acetal, 316SS, FKM</td>
<td>1/4” NPTF lead screw, 1/4” NPTF adapter</td>
</tr>
<tr>
<td>ORP</td>
<td>0.1 mV (±1 mV)</td>
<td>32°F to 158°F (0°C to 70°C)</td>
<td>PVC, Polypropylene, Acetal, 316SS, FKM</td>
<td>1/4” NPTF lead screw, 1/4” NPTF adapter</td>
</tr>
<tr>
<td>Flow switch manifold</td>
<td>0-150 psi (0-10 bar)</td>
<td>32-158°F (0-70°C)</td>
<td>Brass, Glass-filled PP, 316SS</td>
<td>3/4” NPTM submersion</td>
</tr>
</tbody>
</table>

Agency Certifications
- CE: EN 61010-1:2010 3rd Edition
- EN 61326-1:2013

Notes:
- EN61326-1:2013 includes climatic conditions and EMC: IEC 61010-1:2012, 3rd Edition
- EN60068-1:2010 3rd Edition

Specifications
Specifications

Inputs

- **Power**: 100-240 VAC, 50 or 60 Hz, 1.5A max, 6.3 Amp
- **Sensor Input Signals** (0-8 depending on model code)
  - **Contacting Conductivity** 0.01%, 0.1%, or 10.0% of range
  - **ORP** 0.01, 0.1, 0.5, 1.0, or 10.0% of range
- **Outputs**
  - **Pulse Outputs** (0-4 model code dependent)
  - **Dry Contact Mechanical Relays** (0-8 model code dependent)

Available Power: Isolated 24 VDC ±15% supply per channel. 1.5 W (62.5 mA maximum for each channel)

- **Channel 1**: 130 ohm input resistance
- **Channel 2-6**: 280 ohm input resistance
- **All Channels** fully isolated, input and power
- **3-wire and 4-wire transmitters supported**
- **2-wire loop powered and self-powered transmitters supported**

**State-**

- **Preamps. Walchem WEL or WDS series pH/ORP sensors recommended.**
- **Disinfection or Electrodeless Conductivity or Contacting Conductivity:** 0.01, 0.1, 1.0, or 10.0 cell constant, or 0.01, 0.1, 1.0, or 10.0 ppm ±1% of reading
- **Electrical:** Optically isolated and providing an electrically isolated 12V power with a nominal 2.5 mA current when the digital input switch is closed. 0-20 Hz, 25 msec minimum width. Devices supported: Any device with isolated open collector, transistor or reed switch.

**Digital Input Signals** (12)

- **State-Type Digital Inputs**
  - **Low Speed Counter-Type Digital Input**
  - **High Speed Counter-Type Digital Inputs**
  - **Types: Contacting Flowmeter**
  - **Types: DI State**

**Mechanical (Sensors)**

- **Sensor**
  - **Temperature**
    - **Accuracy**: ± 0.5% of reading
    - **Resolution**: 0.0015% of span
  - **Electrical**: VLOWMAX = 0.05V @ 18mA
    - **Opto-isolated, solid-state relay, 200mA, 40V DC**
    - **6.3 Amp**
    - **130 ohm max resistive load**

**Agency Certifications**

- **UL 61010-1:2013, 3rd Edition**
- **IEC 61010-1:2010 3rd Edition**
- **EN 61326-1:2013**
- **CSA C22.2 No.61010-1:2012, 3rd Edition**

**Display**

- **Ambient Temperature**: 23 to 50°F (-5 to 26°C)
- **Humidity**: 10 to 90% non-condensing

**Control Panel**

- **Temperature**: 32°F to 122°F (0°C to 50°C)
- **Humidity**: 5% to 95% non-condensing

**Dimensions**

- **12.2W x 13.8H x 5.4D" (310 x 351 x 137 mm)**
- **Enclosure Rating**: NEMA 4X (IP65)

**Enclosure Material**

- **Mechanical (Controller)**
  - **Enclosure Material**: Polycarbonate
  - **Enclosure Rating**: NEMA 4X (IP65)
  - **Dimensions**: 15.24x (381 mm)
  - **Display**: 320x240 pixel monochrome backlit display with touchscreen
  - **Ambient Temperature**: 4 to 122°F (0 to 50°C)
  - **Storage Temperature**: -4 to 119°F (-20 to 45°C)
  - **Humidity**: 10% to 90% non-condensing

**Power}
Specifications

Inputs

Sensor Input Signals (0-8 depending on model code)

- Conducting Capacity: 0.01, 0.1, 1.0 or 10.0 cell constant, or Electrodeless Conductivity
- Amplified pH, ORP or (Ion Selective Electrode which requires a preamplified signal) ±5VDC power available for external preamplifier. Nickel-plated or WSN sensor recommended.

Each sensor input card contains a temperature input.

- Temperature: 100 or 1000 ohm RTD, 10K or 100K Thermistor

Available Power: Isolated 24 VDC ±15% supply per channel. 1.5 W (62.5 mA maximum for each channel)

3-wire and 4-wire transmitters supported

2-wire loop powered and self-powered transmitters supported

Amplified pH, ORP, or Ion Selective Electrode which requires a preamplified signal. ±5VDC power available for external preamplifier. Nickel-plated or WSN sensor recommended.

Contacting Conductivity: 0.01, 0.1, 1.0, or 10.0 cell constant, or drain, open collector, transistor or reed switch. Types: Paddlewheel Flowmeter
digital input switch is closed, 0-500 Hz, 1.0 msec minimum width. Devices supported: Any device with isolated open electrical: Optically isolated and providing an electrically isolated 12V power with a nominal 2.5 mA current when the reed switch). Types: DI State

digital input switch is closed. Typical response time: < 2 seconds. Devices supported: Any isolated dry contact (i.e. relay, state- Type Digital Inputs

Mechanical (Sensors) [i.e. pH, ORP] 0.005 psi at 10°C 32-75°F (0-24°C)

The W900 series provides flexible, reliable 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay
- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- Flow Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- PID Control (when purchased with 4-20 mA or pulse solid state output pair output)
- In-flange or Out-of-flange 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
- PPM Volume
- Target PPM
- Flow Meter Ratio
- Volumetric Blending
- Disturbance Variable Control
- For Cooling Tower and Boiler applications:
  - Biocide Timer
  - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- Datalogging
- Multi-protocol protocol (Modbus TCP and BACnet)
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay
- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- Flow Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- PID Control (when purchased with 4-20 mA or pulse solid state output pair output)
- In-flange or Out-of-flange 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
- PPM Volume
- Target PPM
- Flow Meter Ratio
- Volumetric Blending
- Disturbance Variable Control
- For Cooling Tower and Boiler applications:
  - Biocide Timer
  - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- Datalogging
- Multi-protocol protocol (Modbus TCP and BACnet)
- 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay
- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- Flow Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- PID Control (when purchased with 4-20 mA or pulse solid state output pair output)
- In-flange or Out-of-flange 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
- PPM Volume
- Target PPM
- Flow Meter Ratio
- Volumetric Blending
- Disturbance Variable Control
- For Cooling Tower and Boiler applications:
  - Biocide Timer
  - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- Datalogging
- Multi-protocol protocol (Modbus TCP and BACnet)
- 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay
- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- Flow Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- PID Control (when purchased with 4-20 mA or pulse solid state output pair output)
- In-flange or Out-of-flange 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
- PPM Volume
- Target PPM
- Flow Meter Ratio
- Volumetric Blending
- Disturbance Variable Control
- For Cooling Tower and Boiler applications:
  - Biocide Timer
  - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- Datalogging
- Multi-protocol protocol (Modbus TCP and BACnet)
- 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status

Complete flexibility in the function of each relay
- On/Off Setpoint
- Time Proportional Control
- Pulse Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- Flow Proportional Control (when purchased with 4-20 mA or pulse solid state output pair output)
- PID Control (when purchased with 4-20 mA or pulse solid state output pair output)
- In-flange or Out-of-flange 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
- PPM Volume
- Target PPM
- Flow Meter Ratio
- Volumetric Blending
- Disturbance Variable Control
- For Cooling Tower and Boiler applications:
  - Biocide Timer
  - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus/TCP
- Datalogging
- Multi-protocol protocol (Modbus TCP and BACnet)
The W900 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
- Four I/O slots allow complete flexibility in adding sensors, analog inputs, analog outputs and LPR corrosion sensors
- Multiple language support allows simple setup
- Eight relay control outputs allow the controller to be used in more applications
- Eight virtual inputs and eight virtual outputs
- Economical wall-mount package for easy installation
- On-screen and web page graphing of sensor values and control output status
- Complete flexibility in the function of each relay
  - On/Off Setpoint
  - Time Proportional Control
  - Proportional Control (when purchased with 4-20 mA or pulse solid state opto outputs)
  - Flow Proportional Control (when purchased with 4-20 mA or pulse solid state opto outputs)
  - PID Control (when purchased with 4-20 mA or pulse solid state opto outputs)
  - In-flange or Out-flange 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
  - PPM Volume
  - Target PPM
  - Flow Meter Ratio
  - Volumetric Blending
  - Disturbance Variable Control
  - For Cooling Tower and Boiler applications:
    - Biocide Timer
    - Boiler blowdown on conductivity using intermittent sampling
- Ethernet or WiFi for remote access via the Internet, LAN, or optional BACnet or Modbus TCP
- Datalogging
- Emailing Alarm messages, Datalog, Graph, or System Summary reports

**W900 Series Controllers**

SENSOR MOUNTING

- Submersion mounting

**SENSORS #1-6 (must be in alphabetical order)**

- Chlorine
- Disinfection
- Conductivity
- Cooling Tower
- pH
- Lo/Hi Pressure manifold

**SENSORS #1-5 (must be in alphabetical order)**

- Chlorine
- Disinfection
- Conductivity
- Cooling Tower
- pH

**SENSORS #1-4 (must be in alphabetical order)**

- Chlorine
- Disinfection
- Conductivity
- Cooling Tower

**RELAYS/WIRING**

- 2 opto 6 powered relays
- 4 opto 4 powered relays
- 4 opto 4 dry relays
- 2 opto 6 dry relays
- 7 powered 1 dry relays

**I/O MODULES #1-4**

- Single Connection, WiFi only
- Dual Connection, Ethernet and WiFi

**Model Code**

- **W900**
- **AADE**
- **940D**
- **930D**
- **910D**
- **900D**
- **970D**
- **960D**
- **950B**
- **940B**
- **930B**
- **920B**
- **910B**
- **900B**

**Label**

- Four Analog Outputs
- Six Analog Inputs

**Protocol**

- Modbus TCP and BACnet

**Communications Protocol**

- Universal sensor input provides extraordinary flexibility; the same controller can be used with almost any type of sensor needed