WebMaster®ONE Controllers

Cooling Tower/Boiler Controllers

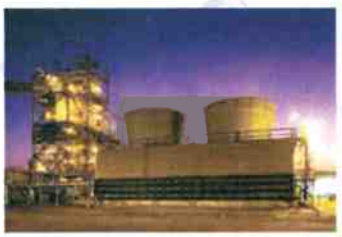
ONE simple and flexible controller for ALL your water treatment needs!

Walchem's WebMasterONE integrates advanced sensing, instrumentation, fluid handling, and data communications technologies to bring you the most sophisticated cooling tower & boiler controller in the water treatment industry.

The simple, intuitive programming makes it easy to configure your WebMasterONE to control multiple cooling towers, boilers, closed loops, or virtually any water treatment process. It will monitor and control based on a wide range of direct sensor inputs as well as measurement inputs from other devices such as corrosion, level, temperature and pressure.

WebMasterONE is on duty 24 hours a day, 365 days a year, keeping on-site and off-site personnel notified of system performance, all the while providing comprehensive and reliable water treatment control.

Summary of Key Benefits



- Extensive built-in Plug & Play communications options:
  - Ethernet
  - USB (laptop & flash disk support)
  - Cell modem
  - Landline modem
- Easy to start-up and use - with just a web browser!
- VTouch® provides quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click.
- System status reports and datalog files can be sent automatically
- Instant alarm notification via email, cell phone text message or local alarm relay
- PPM set points with feed verification

- Wide range of direct sensor measurements:
  - pH
  - ORP
  - Conductivity
  - Electrodeless conductivity
  - Free chlorine/bromine
  - Chlorine dioxide
- Modbus read/write is available for seamless integration with building energy management, distributed control, process management and SCADA systems
- Protect the building's infrastructure while conserving water, energy and chemicals

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Features

Innovation

WebMasterONE is the most advanced online process controller in the water treatment industry. It supports all global communications standards:

- USB plug-n-play for local laptop communications (standard feature)
- Ethernet for LAN communications (standard feature)
- Internal analog modem (optional)
- Internal cellular modem utilizing the latest global standard digital technologies (GPRS) used by most major cellular carriers (optional)

Simplicity

True innovation has made WebMasterONE the easiest controller to use! To communicate with WebMaster ONE, simply connect the USB cable to your laptop, open a standard web browser, and type in the WebMaster default address. That's it! You're connected to the WebMasterONE and surfing the pages just like a website.

Convenience

Walchem's patented ShoulderTap® technology (Internet Connectivity On Demand) allows WebMasterONE to be monitored and controlled over the Internet from any computer, anywhere in the world, with a standard web browser, without the need to be on the Internet at all times. No proprietary software, no long distance phone charges, and it's completely safe since the controller is only connected to the Internet when you request it, or when it sends out reports and alarms.

Flexibility

WebmasterONE allows you to control cooling towers, boilers, closed loops, condensate lines, wastewater systems or any combination using one controller. All standard water treatment control methods are included in every WebMasterONE: Biocide timers, On/Off and Time Proportional Control, Inhibitor feed, Intermittent boiler sampling with flashing detection, ORP control with periodic spike, and many others.

Compatibility

WebMasterONE supports many of the most popular global communications standards:

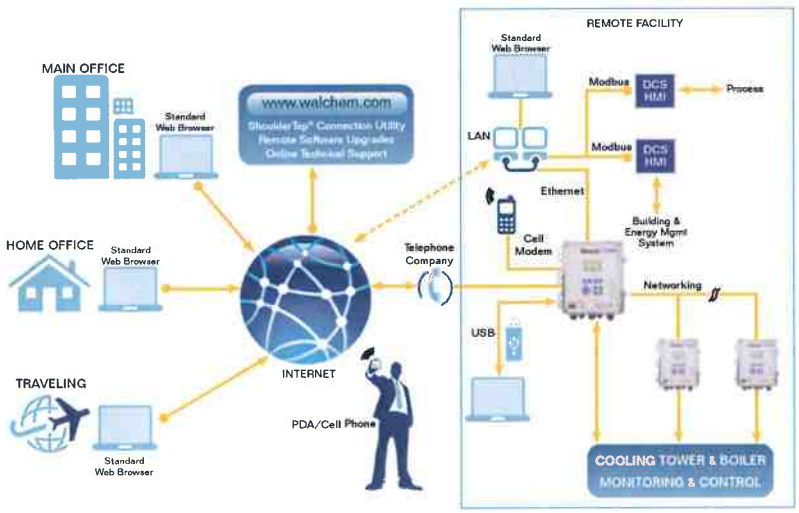
- MODBUS TCP/IP (Ethernet): Seamless connectivity to building energy management, distributed control, process management and SCADA systems
- SMTP: EMAIL for sending alarms, reports, or data log files
- ETHERNET
- Cell phone text messaging for instant, descriptive text message alarms
- Networking: Ethernet based networking allows the use of a single phone line or cell modem for communicating with multiple controllers at one site, even when they are located in different buildings!

Receive alarms via cell phone text messaging

Reliability

- Every part of WebMasterONE has been designed for reliable performance in any application:
- Industrial grade pH/ORP/Conductivity sensors
- Rugged flow switch manifold
- UL, CSA and CE safety and electromagnetic performance approvals reduce electrical safety liability concerns and dramatically reduce electrical noise and powerline related field problems

Receive spreadsheet datalogs as an attachment to an email at user-defined time periods.



Specifications

Measurement Performance

	Range	Resolution
Contacting Conductivity	10 to 10,000 µS/cm	1 µS/cm
pH	-2 to 16 pH	0.01 pH
ORP	-1400 to 1400 mV	1 mV
Temperature	0 to 200°C (32 to 392°F)	1°C (1°F)
Electrodeless Conductivity	1000 to 10,000 µS/cm	1 µS/cm
Free Chlorine/Bromine*	0 to 8 mg/l (PPM)	0.01 mg/l
Chlorine Dioxide	0 to 10 mg/l (PPM)	0.01 mg/l

*Not suitable for stabilized Bromine

Inputs

Power
100-120/220-240 VAC +/-10%
12 amp, 50/60 Hz
Fuse 1.6A, 5 x 20mm

Sensors (1 standard, up to 4 optional)
Signal: +/- 1.4 VDC (isolated)
Temperature: 1Kohm, 10 Kohm or 100 Kohm

Digital Inputs (6 standard, additional 6 optional)
Isolated dry contact, 0-300 Hz, 1.5 msec minimum width

Analog (4-20 mA) Inputs (8 optional)
2 or 3 wire, internally powered by 24 VDC loop power available, 25 ohm input resistance, 1000 ohm maximum load

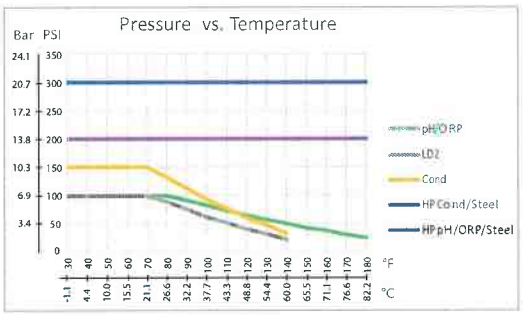
Outputs

Mechanical relays (8 standard)
115VAC, 10 amp resistive, 1/8 HP
230VAC, 6 amp resistive, 1/8 HP
May be dry contact or powered by line voltage.
R1-R4 fused together, current not to exceed 5.5 amp
R5-R8 fused together, current not to exceed 5.5 amp
Only powered relays are fused. N.O. and N.C. contacts provided.

Analog (4-20 mA) Outputs (up to 4 optional)
Isolated, 500 ohm maximum load, internally powered by 24 VDC

Mechanical

Enclosure:	Thermoplastic
NEMA Rating:	NEMA 4X
Display:	64 x 128 pixel backlit LCD
Ambient Temp:	0 to 49°C (32 to 120°F)
Storage Temperature:	-29 to 80°C (-20 to 176°F)
Shipping Weight:	Approx. 26 lbs (11.8 kg)



Sensor Specifications (*See graph)

Sensor	Range	Temperature	Pressure	Process Connection	Materials
Electrodeless Conductivity	1000 to 10,000µS/cm	32 to 158°F* (0 to 70°C)	0 to 150 psi* (0 to 10.3 bar)	1" NPTM submersion 2" NPTM in-line adapter	CPVC, FKM in-line o-ring
pH	-2 to 16 pH	50 to 158°F* (10 to 70°C)	0 to 100 psi* (0 to 6.9 bar)	1" NPTM submersion ¾" NPTF in-line tee	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass filled PP tee
ORP	-1400 to 1400 mV	32 to 158°F* (0 to 70°C)	0 to 100 psi* (0 to 6.9 bar)	1" NPTM submersion ¾" NPTF in-line tee	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass filled PP tee
Contacting Conductivity (High Pressure Tower)	10 to 10,000µS/cm	32 to 392°F (0 to 200°C)	0 to 300 psi (0 to 20.7 bar)	¾" NPTM	316 SS, PEEK
Contacting Conductivity (High Pressure Boiler)	10 to 10,000µS/cm	32 to 392°F (0 to 200°C)	0 to 250 psi (0 to17.2 bar)	¾" NPTM	316 SS, PEEK
Contacting Conductivity (Graphite)	10 to 10,000µS/cm	32 to 158°F* (0 to 70°C)	0 to 150 psi* (0 to 10.3 bar)	¾" NPTF tee	Graphite, glass-filled PP, FKM o-ring
Contacting Conductivity (SS)	10 to 10,000µS/cm	32 to 158°F* (0 to 70°C)	0 to 150 psi* (0 to 10.3 bar)	¾" NPTF tee	316 SS, glass-filled PP, FKM o-ring
pH (High Pressure)	0 to 14 pH	32 to 275°F (0 to 135°C)	0 to 300 psi (0 to 20.7 bar)	½" NPTM gland	Glass, Polymer, PTFE, 316 SS, FKM
ORP (High Pressure)	-1400 to 1400 mV	32 to 275°F (0 to 135°C)	0 to 300 psi (0 to 20.7 bar)	½" NPTM gland	Platinum, Polymer, PTFE, 316 SS, FKM
Flow Switch Manifold Assembly	Open < 0.7 gpm	32 to 140°F* (0 to 60°C)	150 psi up to 100°F* (10.3 bar up to 38°C) 50 psi @ 140°F (3.4 bar@ 60°C)	¾" NPTF	Glass-filled PP, PVC, FKM, Isoplast
Flow Switch Manifold Assembly (High Pressure)	Open < 0.75 gpm	32 to 158°F (0 to 70°C)	0 to 300 psi (0-20.7 bar)	¾" NPTF	Carbon steel, Brass, 316 SS, FKM
Free Chlorine/Bromine	0 to 8 mg/l (PPM)	32 to 113°F (0 to 45°C)	0 to 15 psi (0 to 1 bar)	¾" NPTF	PVC, PTFE, Nylon, Isoplast, FKM
Chlorine Dioxide	0 to 10 mg/l (PPM)	32 to 122°F (0 to 50°C)	0 to 15 psi (0 to 1 bar)	¾" NPTF	PVC, PTFE, Nylon, Isoplast, FKM

VTouch® Account Manager

'Smart' Service:

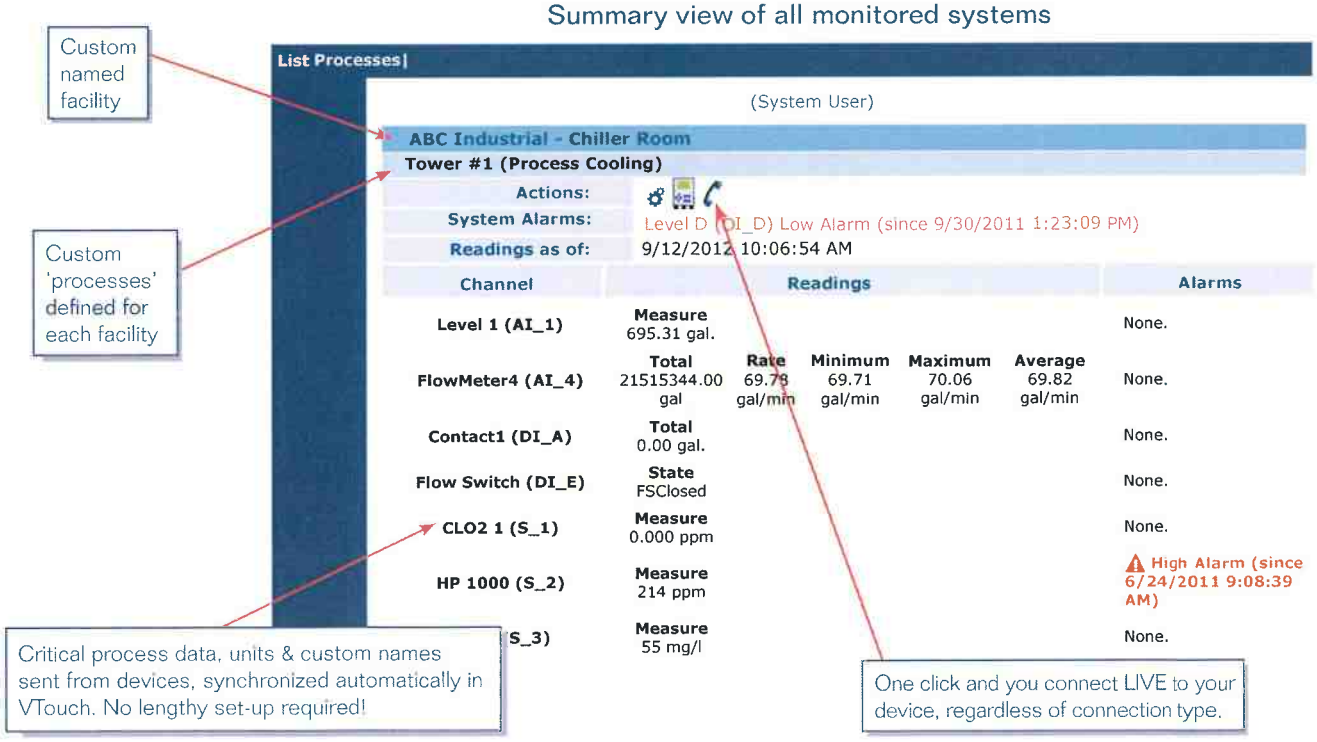
- On-line, web-based summary of account status
  - Process values continuously updated including past 24 hour min, max and average values
  - Alarm status
- One-click LIVE Connect to any device in the field for full view and reconfiguration
  - Analysis, troubleshooting, adjustments
- Seamlessly organize devices according to a process(es), facility, customer, etc.
- User "access" and "permissions" management
- Eliminates surprises during 'routine' visits
- Makes service PROACTIVE not reactive
- SAVES TIME! Plain & Simple

VTouch is a collection of technologies designed for companies offering managed water treatment services. The VTouch solution allows service companies to more effectively manage remote accounts by significantly reducing the complexities associated with the deployment of water treatment service programs based around communicating products.

The VTouch Account Manager is fully synchronized with Walchem's web based controllers, making set-up and configuration simple and fast. Just specify the type of remote communications needed for new or existing controllers and Walchem takes care of the rest. No need to sort out and track complicated and constantly moving cellular data or dial-up ISP plans from large companies with poor customer service and unpredictable monthly charges. VTouch solves these problems by bundling the communications services, giving you a completely turn-key solution.

The innovative, fully synchronized nature of VTouch provides you with a quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click, regardless of connection type! No phone numbers or IP addresses to remember.

Summary view of all monitored systems



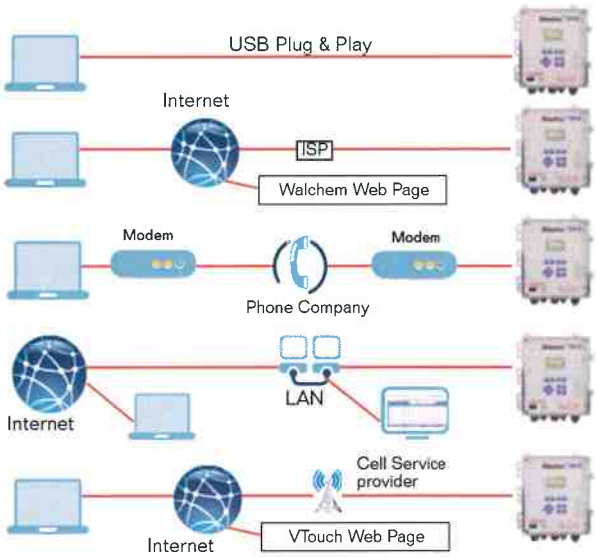
Communications

With an embedded web server, WebMasterONE utilizes standard TCP/IP Internet communications. Remote communications can be established with WebMasterONE via the Internet or on a direct line with modem-to-modem capability. USB Plug and Play and Ethernet are included to allow easy on-site access for plant personnel and system operators. Multiple users can access the controller simultaneously. A graduated password protection system allows users varied degrees of access from view only to full system configuration. In addition, WebMasterONE delivers a range of user-friendly information reporting tools including email notifications for datalogs, alarms and system summaries.

Walchem has made use of the Internet as a remote access communications platform for industrial control equipment a practical reality. While others just attempt to reduce the cost of embedded web server hardware, Walchem has solved the problem of the high cost and lack of availability of a permanent connection to the Internet.

WebMasterONE makes programming your cooling tower or boiler simple and fast and WebMasterONE does not require any proprietary software to reside on your computer. Set-up and programming are all done via a standard web browser. Easy to follow menus and system set-up screens make programming user friendly and intuitive. Once WebMasterONE is installed, the Start-up menu jump-starts you through the top level set-up. The Input, Output and utility menus guide you through the rest of the programming.

- **USB Plug and Play:** For local monitoring and reconfiguration of your WebMasterONE via LapTop or dedicated on-site PC.
- **ShoulderTap® Internet Communications:** For monitoring and reconfiguration of your WebMasterONE remotely via the Internet (requires landline modem card option).
- **DirectTap Modem-to-Modem:** For remote monitoring and reconfiguration of your WebMasterONE using traditional modem-to-modem communications (requires landline modem card option).
- **Ethernet:** For monitoring and reconfiguration of your WebMasterONE via Local Area Network or remotely via the Internet
- **Cellular:** For monitoring and reconfiguration of your WebMasterONE remotely via the Internet (requires cell modem and VTouch option).

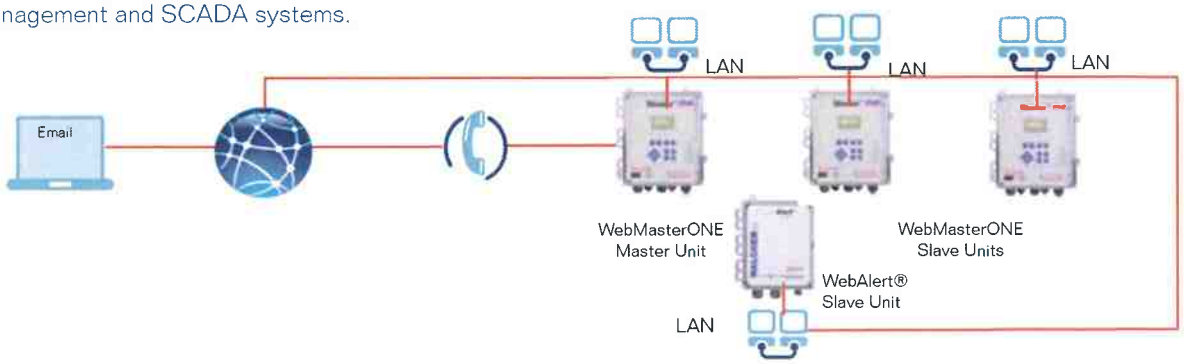


ETHERNET NETWORKING

Walchem's Ethernet Networking allows you to leverage the power of the WebMasterONE communications abilities. By using the Local Area Network (LAN) or by connecting the WebMasters together via Ethernet, you can access all the controllers on the network from a single phone line. It's simple. Each controller includes Ethernet and the Master controller requires the Ethernet Networking "Master" capability. Utilizing a Master-Slave type relationship - one controller is configured to be the Master or window to all the other units (Slaves) on the network.

By utilizing the existing LAN, wiring can be minimized. The controller simply plugs into the nearest LAN connection via a standard Ethernet cable. The Master controller detects the other Walchem devices on the network and provides a single point of access.

Modbus TCP/IP (Ethernet) is available to seamlessly connect to building energy management, distributed control, process management and SCADA systems.



Ordering Information

Sensor Selection

1 WMT8 SINGLE COOLING TOWER

A System Cond
- 0 = No sensor
- 1 = Graphite electrode, 150 psi
- 2 = Electrodeless, 150 psi
- 3 = SS electrode, 150 psi
- 4 = High pressure, 300 psi

B pH/ORP
- 0 = None
- 1 = pH, flat, 100 psi
- 2 = ORP, rod, 100 psi
- 3 = Both, 100 psi
- 4 = pH, bulb, high pressure, 300 psi
- 5 = ORP, high pressure, 300 psi
- 6 = Both, 300 psi

C Makeup Cond
- 0 = None
- 1 = Graphite electrode
- 2 = Electrodeless
- 3 = SS electrode
- 4 = High pressure, 300 psi

2 WMB8 BOILER

A Boiler #1 Conductivity Sensor
- 0 = None
- 1 = 250 psi

B Boiler #2 Conductivity Sensor
- 0 = None
- 1 = 250 psi

C Boiler #3 Conductivity Sensor
- 0 = None
- 1 = 250 psi

D Boiler #4 Conductivity Sensor
- 0 = None
- 1 = 250 psi

3 WMD8 DUAL COOLING TOWER

Tower #1 (A) and Tower #2 (C) System Conductivity
- 0 = No electrode
- 1 = Graphite electrode
- 2 = Electrodeless
- 3 = SS electrode
- 4 = High pressure

Tower #1 (B) and Tower #2 (D) 2nd Sensor
- 0 = No sensor
- 1 = pH, flat
- 2 = ORP, rod
- 3 = pH, High pressure
- 4 = ORP, High pressure
- 5 = Contacting cond, graphite
- 6 = Contacting cond, high pressure

4 WM18 MIXED PURPOSE

A number of sensor inputs requried
- 1 = One sensor input
- 2 = Two sensor inputs
- 3 = Three sensor inputs
- 4 = Four sensor inputs

		Sensor Selection				System Options						
1	WMT8	A	B	C	–	E	F	G	H	J	K	Single Cooling Tower
2	WMB8	A	B	C	D	–	E	G	H	J	K	Boiler
3	WMD8	A	B	C	D	–	E	F	G	H	J	K	Dual Cooling Tower
4	WM18	A				–	E	G	H	J	K	Mixed Purpose

System Options

E VOLTAGE CODE (ALL MODELS)

- 0 = Prewired, 0 powered, 8 dry contact relays
- 1 = Prewired, 7 powered, 1 dry contact relays
- 2 = Prewired, 8 powered, 0 dry contact relays
- 3 = Prewired, 4 powered, 4 dry contact relays
- 4 = Hardwired, 0 powered, 8 dry contact relays
- 5 = Hardwired, 8 powered, 0 dry contact relays
- 6 = Hardwired, 7 powered, 1 dry contact relays
- 7 = Hardwired, 4 powered, 4 dry contact relays

F FLOW SWITCH OPTIONS (WMT & WMD ONLY)

- N = No flow switch, in-line sensors
- L = Loose flow switch manifold, 20 ft cable, low pressure
- P = Flow switch manifold on PP panel, 5 ft cable, low pressure
- S = No flow switch, submersion sensors
- F = Loose flow switch manifold, 20 ft cable, high pressure
- H = Flow switch manifold on PP panel, 5 ft cable, high pressure
- C = Flow switch manifold on PP panel, 5 ft. cable, low pressure + corrator, tee and sensor (no electrodes)
- D = Flow switch manifold on PP panel, 5 ft. cable, low pressure + Little Dipper, tee
- E = Flow switch manifold on PP panel, 5 ft. cable, low pressure + corrator, Little Dipper, sensors

G ANALOG OUTPUTS (ALL MODELS)

- N = No analog outputs
- 1 - 4 = One to Four 4-20 mA output boards

H INPUT OPTIONS

- N = No input options
- A = 8 analog inputs
- D = 6 digital inputs
- B = Both analog and digital input cards

J COMMUNICATIONS HARDWARE (USB & ETHERNET STANDARD)

- N = No additional hardware
- M = Landline Modem
- G = GPRS Modem

K COMMUNICATIONS SOFTWARE

- N = No additional software
- 1 = Ethernet networking master capability
- 2 = Modbus TCP/IP
- 3 = Both Ethernet networking and Modbus TCP/IP

WALCHEM
IWAKI America Inc.
Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park
Holliston, MA 01746 USA
Phone: 508-429-1110 www.walchem.com

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Industrial Water Treatment Controllers

WebMaster® WIND

WebMaster® WIND sets a new standard for Industrial Water Treatment Controllers. The WIND has a flexible multi-input/output platform, a wide range of analytical sensor measurement capabilities, and an extensive assortment of integrated communications and data handling features.

Beyond the extensive list of capabilities, WIND has set an industry-wide ease-of-use benchmark. All together, it represents the perfect balance between Innovation, Flexibility, and Simplicity.

Summary of Key Benefits

- Fully integrates functions of a transmitter, PLC, datalogger and auto-dialer into a rugged, industrial, NEMA 4X package
- No proprietary software required to view live data - just a web browser
- Access live or stored data remotely within the facility (LAN connection) or from anywhere in the world (cell or landline modem)
- No expensive PLC programming and re-programming – all changes made intuitively using a standard web browser
- VTouch® provides quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click.
- Extensive built-in Plug & Play communications options:
  - Ethernet
  - Landline modem
  - USB (Laptop and FlashDisk support)
  - Cell modem
- A wide range of direct sensor measurements:
  - pH
  - Chlorine Dioxide
  - ORP
  - Ozone
  - Conductivity
  - Peracetic Acid
  - Free Chlorine
  - Electrodeless Conductivity
- PID control for relay and analog outputs
- Instant alarm notification via cell phone text message, email, or local alarm relay
- System status reports and datalog files can be emailed automatically


Disinfection


Water Treatment


Wastewater Treatment


Pools/Spas

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Features

Innovation

WebMaster® WIND has been designed with convenience and ease-of-use in mind. It has extensive built-in data-logging capability so there's no need for a separate datalogging device. The data can be retrieved automatically (email Excel file attachment) or manually, through the convenience of a standard USB flash disk.

Simplicity and Flexibility

Unlike PLC's or similar devices, WebMaster® WIND does not require a software programmer for customization to your application. This reduces upfront costs and eliminates recurring expenses for software maintenance. Commissioning is as simple as connecting with a laptop and following the intuitive menus to configure the WebMaster® WIND to meet your needs.

SCR Mapping

WebMaster® WIND provides the flexibility of SCR mapping (Sensor – Control – Relay) to allow you to select any Sensor input (direct analytical, 4–20mA, flowmeter or discrete) and the Control method (from a wide range of choices) and assign them to a Relay. With up to 21 user-defined inputs, the WebMaster® WIND has the flexibility to be programmed for virtually any water treatment application.

1. Sensor: User selects type of sensor
2. Control: User selects control method for each relay
3. Relay: User assigns sensor, analog input or digital input to desired relay

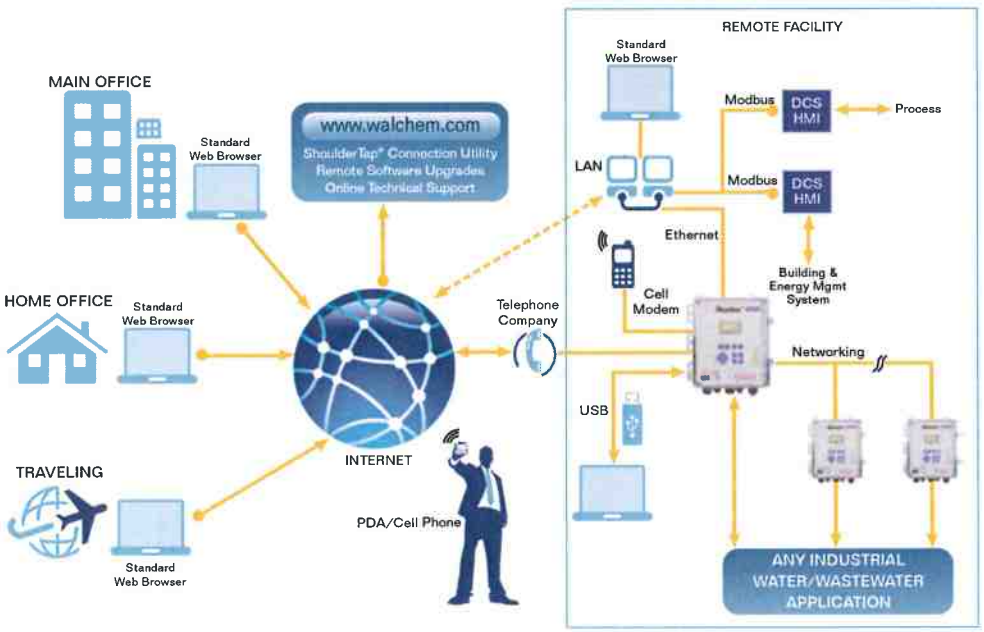
Each sensor input can be assigned to a relay for control. In addition to the 4 direct analytical sensor inputs, WebMaster® WIND has the ability to bring in 8 analog inputs and 9 digital inputs, and is equipped with 8 relay outputs. Sensor inputs can be assigned to any one of up to four 4-20mA outputs.

Report Options

A variety of reporting options can be utilized to meet your needs. A system summary report provides a snapshot of current conditions and alarms. A datalog report can be sent on a regular basis for historical trending. In addition, email and cell phone text alarm messages can be sent.

Receive spreadsheet datalogs as an attachment to an email at user-defined time periods.

Receive alarms via cell phone text messaging



Specifications

Measurement Performance

	Range	Resolution
Contacting Conductivity	10 to 10,000 µS/cm	1 µS/cm
Chlorine Dioxide or Ozone	0 to 10 mg/l	0.01 mg/l
Chlorine/Bromine*	0 to 8 mg/l	0.01 mg/l
Peracetic Acid	0 to 1000 mg/l	1 mg/l
pH	-2 to 16 pH	0.01 pH
ORP	± 1400 mV	1 mV
Electrodeless Conductivity	50 to 1000 µS/cm	1 µS/cm or 1 mS/cm (range dependent)
	1 to 10 mS/cm	
	10 to 100 mS/cm	
	100 to 1000 mS/cm	
Temperature	32 to 392°F (0 to 200°C)	1°F (1°C)

*Not suitable for stabilized Bromine

Inputs

Power
100-120/220-240 VAC +/-10%
12 amp, 50/60 Hz
Fuse 1.6A, 5 x 20mm

Sensors (1 standard, up to 4 optional)
Signal: +/- 1.4 VDC (isolated)
Temperature: 1Kohm, 10 Kohm or 100 Kohm

Digital Inputs (6 standard, additional 6 optional)
Isolated dry contact, 0-300 Hz, 1.5 msec minimum width

Analog (4-20 mA) Inputs (8 optional)
2 or 3 wire, internally powered by 24 VDC loop power available, 25 ohm input resistance, 1000 ohm maximum load

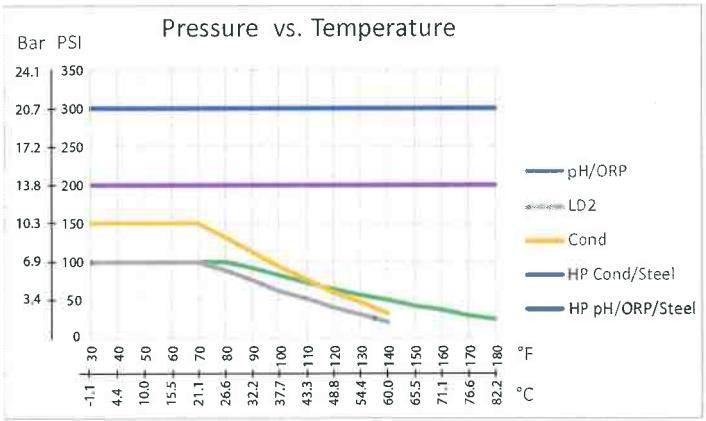
Outputs

Mechanical relays (8 standard)
115VAC, 10 amp resistive, 1/8 HP
230VAC, 6 amp resistive, 1/8 HP
May be dry contact or powered by line voltage.
R1-R4 fused together, current not to exceed 5.5 amp
R5-R8 fused together, current not to exceed 5.5 amp
Only powered relays are fused. N.O. and N.C. contacts provided.

Analog (4-20 mA) Outputs (up to 4 optional)
Isolated, 500 ohm maximum load, internally powered by 24 VDC

Mechanical

Enclosure:	Thermoplastic
NEMA Rating:	NEMA 4X
Display:	64 x 128 pixel backlit LCD
Ambient Temp:	0 to 49°C (32 to 120°F)
Storage Temperature:	-29 to 80°C (-20 to 176°F)
Shipping Weight:	Approx. 22 lbs (10 kg)



Sensor Specifications (*see graph)

Sensor	Range	Temperature	Pressure	Process Connection	Materials
Electrodeless Conductivity	50 to 1000 µS/cm 1 to 10 mS/cm 10 to 100 mS/cm 100 to 1000 mS/cm	CPVC: 32 to 158°F* (0 to 70°C) PEEK: 32 to 190°F* (0 to 88°C)	0 to 150 psi* (0 to 10.3 bar)	1" NPTM submersion 2" NPTM in-line adapter	CPVC, FKM in-line o-ring PEEK, 316SS in-line adapter
pH	-2 to 16 pH	50 to 158°F* (10 to 70°C)	0 to 100 psi* (0 to 6.9 bar)	1" NPTM submersion ¾" NPTF in-line tee	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass filled PP tee
ORP	-1400 to 1400 mV	32 to 158°F* (0 to 70°C)	0 to 100 psi* (0 to 6.9 bar)	1" NPTM submersion ¾" NPTF in-line tee	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass filled PP tee
Contacting Conductivity (High Pressure Tower)	10 to 10,000µS/cm	32 to 392°F (0 to 200°C)	0 to 300 psi (0 to 20.7 bar)	¾" NPTM	316 SS, PEEK
Contacting Conductivity (High Pressure Boiler)	10 to 10,000µS/cm	32 to 392°F (0 to 200°C)	0 to 250 psi (0 to17.2 bar)	¾" NPTM	316 SS, PEEK
Contacting Conductivity (Graphite)	10 to 10,000µS/cm	32 to 158°F* (0 to 70°C)	0 to 150 psi* (0 to 10.3 bar)	¾" NPTF tee	Graphite, glass-filled PP, FKM o-ring
Contacting Conductivity (SS)	10 to 10,000µS/cm	32 to 158°F* (0 to 70°C)	0 to 150 psi* (0 to 10.3 bar)	¾" NPTF tee	316 SS, glass-filled PP, FKM o-ring
pH (High Pressure)	0 to 14 pH	32 to 275°F (0 to 135°C)	0 to 300 psi (0 to 20.7 bar)	½" NPTM gland	Glass, Polymer, PTFE, 316 SS, FKM
ORP (High Pressure)	-1400 to 1400 mV	32 to 275°F (0 to 135°C)	0 to 300 psi (0 to 20.7 bar)	½" NPTM gland	Platinum, Polymer, PTFE, 316 SS, FKM
Flow Switch Manifold Assembly	Open < 0.7 gpm	32 to 140°F* (0 to 60°C)	150 psi up to 100°F* (10.3 bar up to 38°C) 50 psi @ 140°F (3.4 bar@ 60°C)	¾" NPTF	Glass-filled PP, PVC, FKM, Isoplast
Flow Switch Manifold Assembly (High Pressure)	Open < 0.75 gpm	32 to 158°F (0 to 70°C)	0 to 300 psi (0-20.7 bar)	¾" NPTF	Carbon steel, Brass, 316 SS, FKM
Free Chlorine/Bromine High pH Range	0 to 8 mg/l 0 to 7.5 mg/l	41 to 113°F (5 to 45°C)	0 to 15 psi (0 to 1 bar)	¼" NPTF Inlet ¾" NPTF Outlet	PVC, Polycarbonate, silicone rubber, SS, PEEK
Chlorine Dioxide	0 to 10 mg/l	41 to 122°F (5 to 50°C)	0 to 15 psi (0 to 1 bar)	¼" NPTF Inlet ,¾" NPTF	PVC, Polycarbonate, silicone rubber, SS, PEEK
Ozone	0 to 10 mg/l	41 to 122°F	0 to 14.7 psi (0 to 1 bar)	¼" NPTF Inlet ,¾" NPTF	PVC, Polycarbonate, silicone rubber, SS, PEEK
Peracetic Acid	0 to 10 mg/l	41 to 113°F	0 to 14.7 psi (0 to 1 bar)	¼" NPTF Inlet, ¾" NPTF	PVC, Polycarbonate, silicone rubber, SS, PEEK

Communications

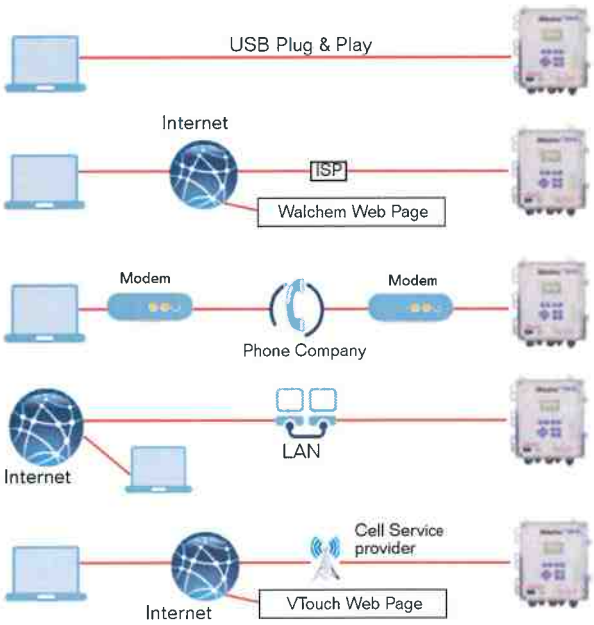
With an embedded web server, WebMaster® WIND utilizes standard TCP/IP Internet communications. Remote communications can be established with WebMaster® WIND via the Internet or on a direct line with modem-to-modem capability. USB Plug and Play and Ethernet are included to allow easy on-site access for plant personnel and system operators. Multiple users can access the controller simultaneously. A graduated password protection system allows users varied degrees of access from view only to full system configuration. In addition, WIND delivers a range of user-friendly information reporting tools including email notifications for datalogs, alarms and system summaries.

Walchem has made use of the Internet as a remote access communications platform for industrial control equipment a practical reality. While others just attempt to reduce the cost of embedded web server hardware, Walchem has solved the problem of the high cost and lack of availability of a permanent connection to the Internet.

WebMaster® WIND makes programming your process simple and fast and does not require any proprietary software to reside on your computer. Set-up and programming are all done via a standard web browser.

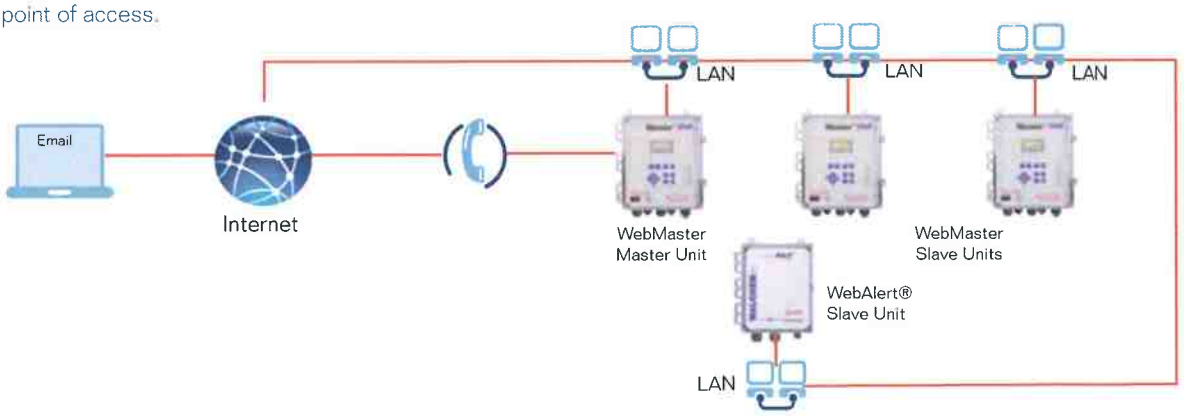
Easy to follow menus and system set-up screens make programming user friendly and intuitive. Once WebMaster® WIND is installed, the Start-up menu jump-starts you through the top level set-up. The Input, Output and Utility menus guide you through the rest of the programming.

- USB Plug and Play: For local monitoring and reconfiguration of your WebMaster® WIND via LapTop or dedicated on-site PC.
- ShoulderTap® Internet Communications: For monitoring and reconfiguration of your WebMaster® WIND remotely via the Internet (requires landline modem card option).
- DirectTap Modem-to-Modem: For remote monitoring and reconfiguration of your WebMaster® WIND using traditional modem-to-modem communications (requires landline modem card option).
- Ethernet: For monitoring and reconfiguration of your WebMaster® WIND via Local Area Network or remotely via the Internet. Modbus TCP/IP is available to seamlessly connect to building energy & process management, distributed control, and SCADA systems
- Cellular: For monitoring and reconfiguration of your WebMaster® WIND remotely via the Internet (requires cell modem and VTouch option).



ETHERNET NETWORKING

Walchem's Ethernet Networking allows you to leverage the power of the WebMaster® WIND communications abilities. By using the Local Area Network (LAN) or by connecting the WebMasters together via Ethernet, you can access all the controllers on the network from a single phone line. By utilizing the existing LAN, wiring can be minimized. The controller simply plugs into the nearest LAN connection via a standard Ethernet cable. The Master controller detects the other Walchem devices on the network and provides a single point of access.



VTouch® Account Manager

'Smart' Service:

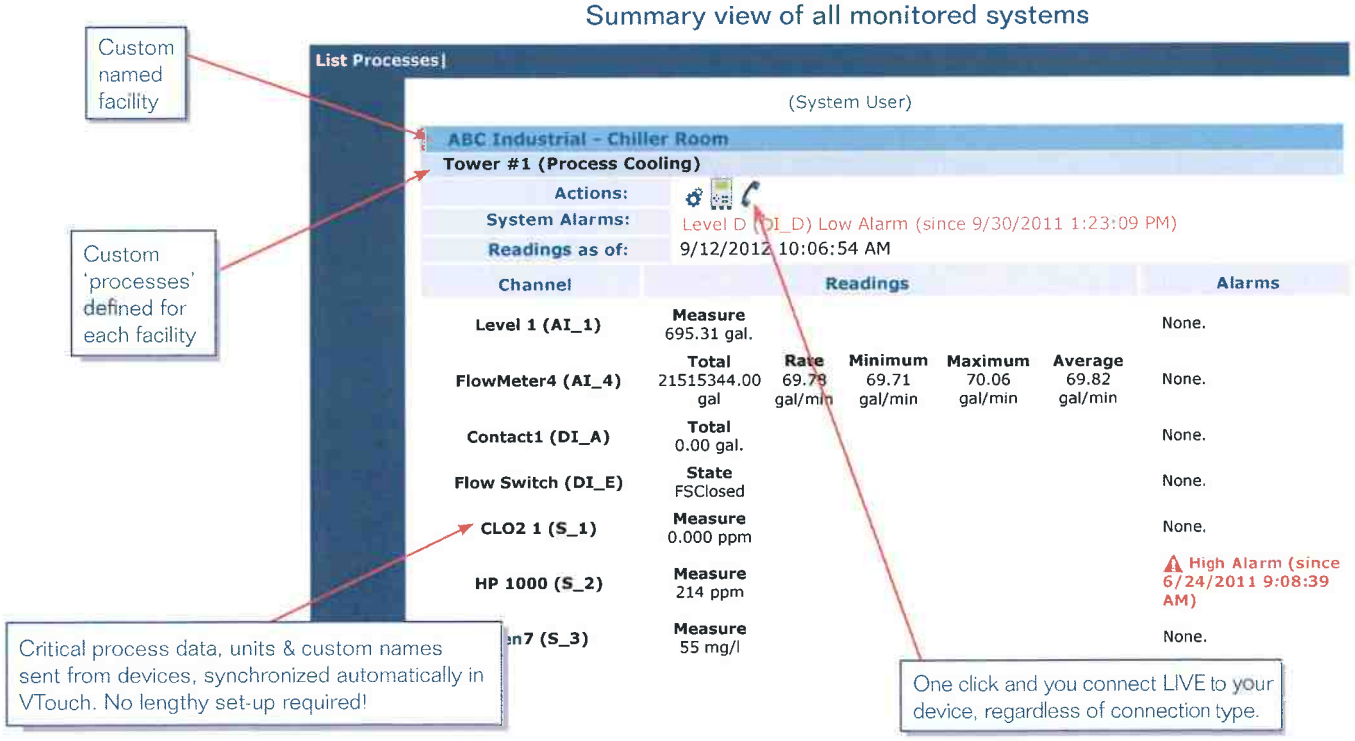
- On-line, web-based summary of account status
  - Process values continuously updated including past 24 hour min, max and average values
  - Alarm status
- One-click LIVE Connect to any device in the field for full view and reconfiguration
  - Analysis, troubleshooting, adjustments
- Seamlessly organize devices according to a process(es), facility, customer, etc.
- User "access" and "permissions" management
- Eliminates surprises during 'routine' visits
- Makes service PROACTIVE not reactive
- SAVES TIME! Plain & Simple

VTouch is a collection of technologies designed for companies offering managed water treatment services. The VTouch solution allows service companies to more effectively manage remote accounts by significantly reducing the complexities associated with the deployment of water treatment service programs based around communicating products.

The VTouch Account Manager is fully synchronized with Walchem's web based controllers, making set-up and configuration simple and fast. Just specify the type of remote communications needed for new or existing controllers and Walchem takes care of the rest. No need to sort out and track complicated and constantly moving cellular data or dial-up ISP plans from large companies with poor customer service and unpredictable monthly charges. VTouch solves these problems by bundling the communications services, giving you a completely turn-key solution.

The innovative, fully synchronized nature of VTouch provides you with a quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click, regardless of connection type! No phone numbers or IP addresses to remember.

Summary view of all monitored systems



Ordering Information

WIND8 [ ] – [ ] [ ] [ ] [ ] [ ]
1 2 3 4 5 6
Sensors System Options

1 SENSOR INPUTS REQUIRED

1 = One sensor input
2 = Two sensor inputs
3 = Three sensor inputs
4 = Four sensor inputs

2 VOLTAGE CODE

0 = Prewired w/USA power cord, 0 powered relays, 8 dry contact relays
1 = Prewired w/USA cords, 7 powered relays, 1 dry contact relay
2 = Prewired w/USA cords, 8 powered relays
3 = Prewired w/USA cords, 4 powered relays, 4 dry contact relays
4 = Hardwired, 0 powered relays, 8 dry contact relays
5 = Hardwired, 8 powered relays
6 = Hardwired, 7 powered relays, 1 dry contact relay
7 = Hardwired, 4 powered relays, 4 dry contact relays
E = Prewired w/ USA power cord, 4 powered relays, 4 opto-isolated (pulse) relays
F = Prewired w/ USA cords, 4 dry contact relays, 4 opto-isolated (pulse) relays
G = Hardwired, 4 powered relays, 4 opto-isolated (pulse) relays
H = Hardwired, 4 dry contact relays, 4 opto-isolated (pulse) relays

3 ANALOG OUTPUTS

N = No electrode
1 = One 4-20 mA output board
2 = Two 4-20 mA output boards
3 = Three 4-20 mA output boards
4 = Four 4-20 mA output boards

4 INPUT OPTIONS

N = None
A = Analog Input board (8 inputs)
D = Digital Input board (6 inputs)
B = Both Analog and Digital Input boards

5 DIGITAL COMMS HARDWARE (USB & ETHERNET STANDARD)

N = No additional communications
M = Modem landline card
G = Cellular Modem card (GPRS)

6 DIGITAL COMMS SOFTWARE

N = No additional communications
1 = Ethernet networking (Master capability)
2 = Modbus TCP
3 = Ethernet networking (Master capability + Modbus TCP)

180321.O Aug 2016

Webmaster®ONE

WebMasterONE is the most advanced online cooling tower and boiler controller in the water treatment industry. The flexible multi-I/O platform allows you to control multiple cooling towers, boilers, closed loops, and condensate lines with just one controller. An extensive assortment of integrated communications and data handling features are included that enable water treatment professionals to provide more effective water management services to their customers.

Metering Pumps

The E-Class is the most innovative and comprehensive metering pump product line in the world. Over 50 years of pump experience and a commitment to superior mechanical design has led to development of many industry firsts, including 360 stroke-per-minute technology, IP67 waterproof construction, and the world's highest capacity solenoid metering pumps.

WebAlert® Remote Monitor

Walchem's WebAlert is the first stand alone remote monitoring device that can web enable your installed equipment without having to replace or upgrade it.

nqa ISO 9001 Registered ANAB

AGENCY CERTIFICATIONS

Safety	UL 61010-1:2012 3rd Ed.
	CSA C22.2 No. 61010-1:2012 3rd Ed.
	IEC 61010-1:2010 3rd Ed.
	EN 61010-1:2010 3rd Ed.
EMC	IEC 61326-1:2012
	EN 61326-1:2013

Note: For EN61000-4-6,-3 the controller met performance criteria B.
*Class A equipment: Equipment 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.

ABOUT US

Walchem integrates its advanced sensing, instrumentation, fluid pumping and communications technologies to deliver reliable and innovative solutions to the global water treatment market. Our in-house engineering is driven by quality, technology and innovation. For more information on the entire Walchem product line, visit: www.walchem.com.

WALCHEM
IWAKI America Inc.

Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park
Holliston, MA 01746 USA
Phone: 508-429-1110 www.walchem.com

Cooling Tower/Boiler Controllers

W100W Series

The W100W series provide an economical and reliable way to keep your cooling tower, boiler, or condensate water treatment program under control.

Summary of Key Benefits

- Large 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
- Multiple language support allows simple setup no matter where your business takes you
- The third control relay allows the controller to be used in more places than other entry level products
- Economical package with no additional cost for timer functionality
- Complete flexibility in the function of each relay
  - Bleed on conductivity
  - Bleed time proportional to makeup water volume
  - Boiler Blowdown on conductivity using intermittent sampling
  - Feed in proportion to bleed time
  - Feed time proportional to makeup water volume
  - Feed as a percentage of elapsed time
  - Probe wash
  - Biocide timer with pre-bleed and post-feed bleed lockout options
  - Alarm
- Optional analog (4-20 mA) output for recording, datalogging or connection to building energy management systems

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Specifications

Measurement Performance

	Range	Resolution	Accuracy
0.1 Cell Contacting Conductivity	0-3,000 µS/cm	0.1 µS/cm, 0.0001 mS/cm, 0.01 mS/m, 0.0001 S/m, 0.1 ppm	± 1% of reading
1.0 Cell Contacting Conductivity	0-30,000 µS/cm	1 µS/cm, 0.001 mS/cm, 0.1 mS/m, 0.0001 S/m, 1 ppm	± 1% of reading
10.0 Cell Contacting Conductivity	0-300,000 µS/cm	10 µS/cm, 0.01 mS/cm, 1 mS/m, 0.001 S/m, 10 ppm	± 1% of reading
Electrodeless Conductivity	500-12,000 µS/cm	1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 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
	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
	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
	200,000-2,000,000 µS/cm	100 µS/cm, 0.1 mS/cm, 1 mS/m, 0.1 S/m, 100 ppm	± 1% of reading
Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	± 1% of reading within range

Temperature °C	0	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
Range Multiplier %	181.3	139.9	124.2	111.1	100.0	90.6	82.5	75.5	64.3	55.6	48.9	43.5	39.2	35.7	32.8	30.4	28.5	26.9	25.5	24.4	23.6	22.9

Note: Conductivity ranges above apply at 25°C. At higher temperatures, the range is reduced per the range multiplier chart.

Inputs

Power

100-240 VAC, 50 or 60 Hz, 7A max
Fuse: 6.3 Amp

Digital Input Signals (2)

State-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.

Typical response time: <2 seconds

Devices supported: Any isolated dry contact (i.e. relay, reed switch)

Types: Interlock

Low Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-10Hz, 50 msec minimum pulse width

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Contacting Flowmeter

High-Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-500Hz, 1.00 msec minimum pulse width

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Paddlewheel Flowmeter

Outputs

Powered Mechanical Relays (0 or 3 model code dependent)
Pre-powered on circuit board switching line voltage.
6 A (resistive), 1/8 HP (93W) per relay
All three relays are fused together as one group, total current for this group must not exceed 6A

Dry contact mechanical relays (0 or 3 model code dependent)
6 A (resistive), 1/8 HP (93W) per relay
Dry contact relays are not fuse protected

4 - 20 mA (0 or 1 model code dependent)
Internally powered
Fully isolated
600 Ohm max resistive load
Resolution .0015% of span
Accuracy ± 0.5% of reading

Mechanical (Controller)

Enclosure	Polycarbonate
Enclosure Rating	NEMA 4X (IP65)
Display	128 x 64 graphic backlit display
Ambient Temperature	-4 to 131°F (-20 to 55°C)
Shipping Temperature	-4 to 176°F (-20 to 80°C)
Shipping weight	22 lbs (10 kg) (approximately) varies with model

Agency Certifications

Safety: 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

EMC: IEC 61326-1:2012
EN 61326-1:2013

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.

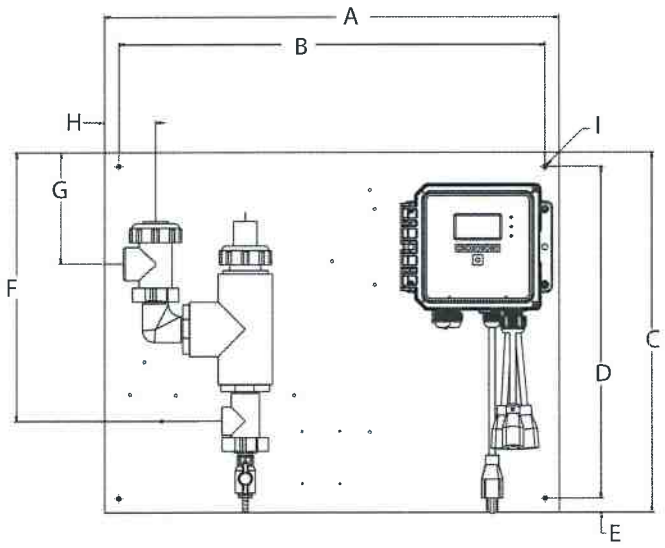
Specifications

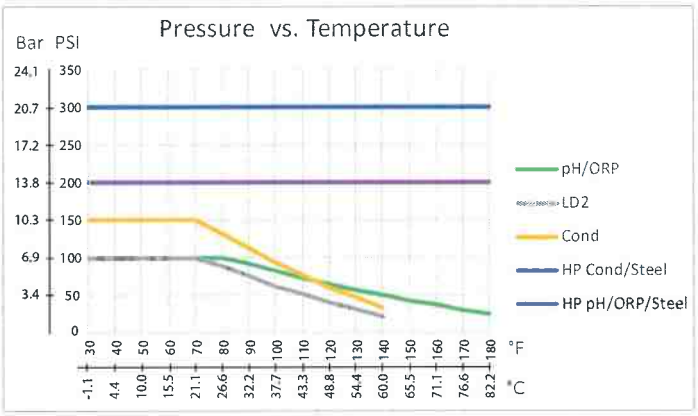
Mechanical (Sensors) (*See graph)

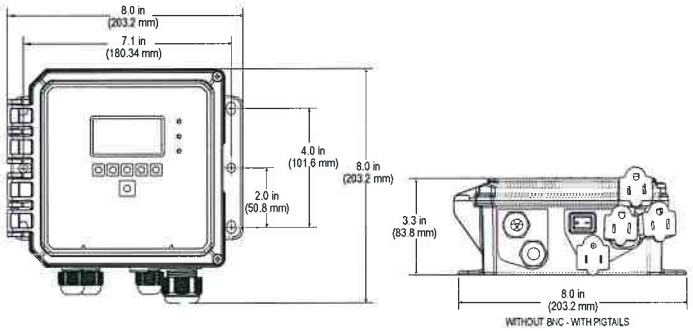
Sensor	Pressure	Temperature	Materials	Process Connections
Graphite contacting conductivity tower	0-150 psi up to 100°F (38°C)* 0- 50 psi at 140°F (60°C)	32-140°F (0-60°C)*	GFRPP, Graphite, FKM	3/4" NPTF
316 SS contacting conductivity tower	0-150 psi up to 100°F (38°C)* 0- 50 psi at 140°F (60°C)	32-140°F (0-60°C)*	GFRPP, 316SS, FKM	3/4" NPTF
High pressure tower	0-300 psi (0-20 bar)*	32-158°F (0-70°C)*	316SS, PEEK	3/4" NPTF
Electrodeless tower	0-150 psi up to 100°F (38°C)* 0- 50 psi at 140°F (60°C)	32-140°F (0-60°C)*	PP, PVC, FKM	3/4" NPTF
Low pressure manifold	0-150 psi up to 100°F (38°C)* 0- 50 psi at 140°F (60°C)	32-140°F (0-60°C)*	GFRPP, PVC, FKM, Isoplast	3/4" NPTF
High pressure manifold	0-300 psi (0-20 bar)*	32-158°F (0-70°C)*	Carbon steel, steel, brass	3/4" NPTF
Boiler/condensate contacting conductivity	0-250 psi (0-17 bar)	32-401°F (0-205°C)	316SS, PEEK	3/4" NPTM

Dimensions

WCTW Sensor option H shown







Panel Mounted Flow Switch Manifold Dimensions

	A	B	C	D	E	F	G	H	I
WCTW	+/- 0.1", 2.5 mm					+/- 0.3", 8 mm			+/- 0.01", 0.25 mm
Sensor option H	24" 610 mm	22.5" 571 mm	19" 483 mm	17.5" 445 mm	0.75" 19 mm	14" 356 mm	6" 152 mm	3" 76 mm	0.25" 6.35 mm
Sensor options B, F	13" 330 mm	12" 305 mm	11.75" 298 mm	10.75" 273 mm	0.5" 12.7 mm	7" 178 mm	2" 51 mm	1.5" 38 mm	0.25" 6.35 mm
Sensor option D	22.5" 571 mm	21.5" 546 mm	11.75" 298 mm	10.75" 273 mm	0.5" 12.7 mm	7" 178 mm	2" 51 mm	6" 152 mm	0.25" 6.35 mm

Ordering Information

WCTW
WBLW [Relays/Wiring] [Analog Output] - [Sensors]

Relays/Wiring
100H = 3 powered relays, hardwired
100P = 3 powered relays, prewired USA power cord & pigtails
100D = 3 powered relays, prewired DIN power cord, no pigtails
110H = 3 dry relays, hardwired
110P = 3 dry relays, prewired USA power cord, no pigtails
110D = 3 dry relays, prewired DIN power cord, no pigtails

Analog Output
N = No analog output
A = One isolated analog (4-20 ma) output

Sensors (WCTW)
N = No sensor
A = Inline/submersion graphite contacting conductivity
B = Graphite contacting conductivity + Flow Switch manifold on panel
C = High pressure contacting conductivity
D = High pressure contacting cond + Flow Switch manifold on panel
E = Inline/submersion 316SS contacting conductivity
F = 316SS contacting conductivity + Flow Switch manifold on panel
G = Inline/submersion electrodeless conductivity
H = Electrodeless conductivity + Flow Switch manifold on panel

Sensors (WBLW)
N = No sensor
A = Boiler sensor with ATC, 250 psi, 20 ft cable
B = Boiler sensor without ATC, 250 psi, 20 ft cable
C = Condensate sensor with ATC (cell constant 0.1), 200 psi, 10 ft cable
D = Boiler sensor with ATC, up to 100 mS/cm (cell constant 10), 250 psi, 20 ft cable

180532.I October 2016

Metering Pumps
The E-Class is the most innovative and comprehensive metering pump product line in the world. Over 50 years of pump experience and a commitment to superior mechanical design has led to development of many industry firsts, including 360 stroke-per-minute technology, IP67 waterproof construction, and the world's highest capacity solenoid metering pumps.

Accessories
To complete your system, Walchem provides high quality accessories that are required for cooling tower, boiler, potable water, and wastewater applications. All of Walchem's accessories are carefully designed and selected for compatibility with our pumps and controllers to enable our customers to provide a complete system solution.

nqa. ISO 9001 Registered ANAB

ABOUT US
Walchem integrates its advanced sensing, instrumentation, fluid pumping and communications technologies to deliver reliable and innovative solutions to the global water treatment market. Our in-house engineering is driven by quality, technology and innovation. For more information on the entire Walchem product line, visit: www.walchem.com

WALCHEM
IWAKI America Inc.
Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park
Holliston, MA 01746 USA
Phone: 508-429-1110 www.walchem.com

Conductivity, pH/ORP & Disinfection

W100W Series Controllers

The W100W series provide an economical and reliable way to keep your water treatment program under control.

Summary of Key Benefits

- Large 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
- Three pH/ORP models available for use with amplified electrodes, non-amplified electrodes with a BNC connector or non-amplified electrodes without a connector
- Multiple language support allows simple setup no matter where your business takes you
- Three control outputs allow the controller to be used in more places than other entry level models
- Economical wall-mount package for easy installation
- 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)
  - In-range or Out-of-range activation
  - Probe Wash Timer
  - 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
  - Alarm
  - PID Control (when purchased with 4-20mA or pulse solid state opto outputs)

Typical Applications

- Wastewater neutralization & disinfection
- Food and Beverage disinfection
- Potable water treatment
- Swimming pools & spas
- Cooling tower biocide control
- Metal finishing & printed circuit board
- Irrigation & fertigation
- RO Systems

WALCHEM

IWAKI America Inc.

Specifications

Measurement Performance

	Range	Resolution	Accuracy
0.01 Cell Contacting Conductivity	0-300 µS/cm	0.01 µS/cm, 0.0001 mS/cm, 0.001 mS/m, 0.0001 S/m, 0.01 ppm	± 1% of reading
0.1 Cell Contacting Conductivity	0-3,000 µS/cm	0.1 µS/cm, 0.0001 mS/cm, 0.01 mS/m, 0.0001 S/m, 0.1 ppm	± 1% of reading
1.0 Cell Contacting Conductivity	0-30,000 µS/cm	1 µS/cm, 0.001 mS/cm, 0.1 mS/m, 0.0001 S/m, 1 ppm	± 1% of reading
10.0 Cell Contacting Conductivity	0-300,000 µS/cm	10 µS/cm, 0.01 mS/cm, 1 mS/m, 0.001 S/m, 10 ppm	± 1% of reading
pH	-2 to 16 pH units	0.01 pH units	± 0.01% of reading
ORP	-1500 to 1500 mV	0.1 mV	± 1 mV
Disinfection sensors	-2000 to 1500 mV	0.1 mV	± 1 mV
	0 - 2 ppm to 0 - 20,000 ppm	Varies with range and slope	Varies with range and slope
Electrodeless Conductivity	500 - 12,000 µS/cm	1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 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
	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
	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
	200,000-2,000,000 µS/cm	100 µS/cm, 0.1 mS/cm, 1 mS/m, 0.1 S/m, 100 ppm	± 1% of reading
Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	± 1% of reading within range

Temperature °C	0	10	15	20	25	30	35	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
Range Multiplier %	181.3	139.9	124.2	111.1	100.0	90.6	82.5	75.5	64.3	55.6	48.9	43.5	39.2	35.7	32.8	30.4	28.5	26.9	25.5	24.4	23.6	22.9

Note: Conductivity ranges above apply at 25°C. At higher temperatures, the range is reduced per the range multiplier chart.

Inputs

Power

100-240 VAC, 50 or 60 Hz, 7A max
Fuse: 6.3 Amp

Digital Input Signals (2)

State-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.

Typical response time: <2 seconds

Devices supported: Any isolated dry contact (i.e. relay, reed switch)

Types: Interlock

Low Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-10Hz, 50 msec minimum pulse width

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Contacting Flowmeter

High-Speed Counter-Type

Electrical: Optically-isolated input.
Provides isolated 9V power.
Current consumption when input is closed: 2.3 mA nominal.
0-500Hz, 1.00 msec minimum pulse width

Devices supported: Any device with isolated open drain, open collector, transistor or reed switch

Types: Paddlewheel Flowmeter

Outputs

Powered Mechanical Relays (0 or 3 model code dependent)

Pre-powered on circuit board switching line voltage
6 A (resistive), 1/8 HP (93W) per relay
All three relays are fused together as one group, total current for this group must not exceed 6A.

Dry Contact Mechanical Relays (0, 1 or 3 model code dependent)

6 A (resistive), 1/8 HP (93W) per relay
Dry contact relays are not fuse protected.

Pulse Outputs (0 or 2 model code dependent)

Opto-isolated, solid-state relay, 200mA, 40V DC
VLOWMAX = 0.05V @ 18mA

4 - 20 mA (0 or 1 model code dependent)

Internally powered, Fully isolated
600 Ohm max resistive load
Resolution 0.0015% of span, Accuracy ± 0.5% of reading

Mechanical (Controller)

Enclosure	Polycarbonate
Enclosure Rating	NEMA 4X (IP65)
Display	128 x 64 graphic backlit display
Ambient. Temperature	-4 to 131°F (-20 to 55°C)
Shipping Temperature	-4 to 176°F (-20 to 80°C)
Shipping weight	26 lbs (11.8 kg) (approximately) varies with model

Agency Certifications

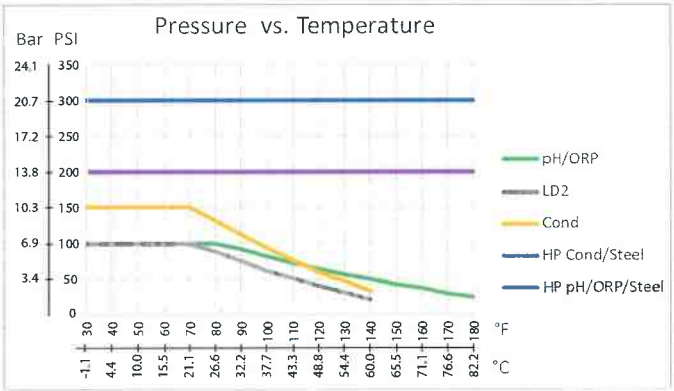
Safety:	UL 61010-1:2012, 3rd Edition CSA C22.2 No.61010-1:2012, 3rd Edition IEC 61010-1:2010 3rd Edition EN 61010-1:2010 3rd Edition
EMC:	IEC 61326-1:2012 EN 61326-1:2013

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

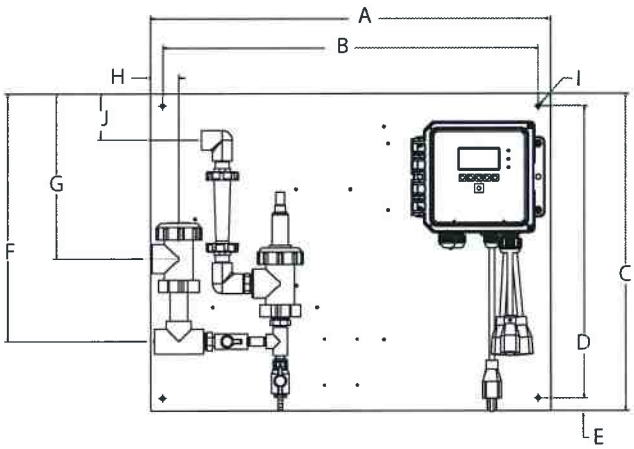
Mechanical (Sensors) (*see graph)

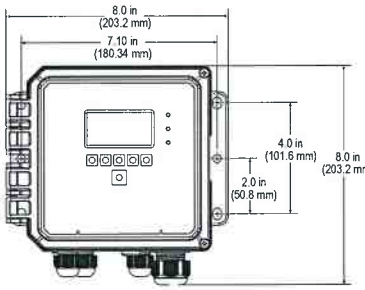
Sensor	Pressure	Temperature	Materials	Process Connections
Electrodeless conductivity	0-150 psi (0-10 bar)*	CPVC: 20-180°F (-5 to 80°C)* PEEK: 20-190°F (-5 to 88°C)	CPVC, FKM in-line o-ring PEEK, 316 SS in-line adapter	1" NPTM submersion 2" NPTM in-line adapter
pH	0-100 psi (0-7 bar)*	50-158°F (10-70°C)*	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass-filled PP tee	1" NPTM submersion 3/4" NPTF in-line tee
ORP	0-100 psi (0-7 bar)*	32-158°F (0-70°C)*		
Contacting conductivity	0-200 psi (0-14 bar)	32-248°F (0-120°C)	316SS, PEEK	3/4" NPTM
Free Chlorine/Bromine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)	PVC, Polycarbonate, silicone rubber, SS, PEEK, FKM, Isoplast	1/4" NPTF Inlet 3/4" NPTF Outlet
Extended pH Range Free Chlorine/Bromine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
Total Chlorine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
Chlorine Dioxide	0-14.7 psi (0-1 bar)	32-131°F (0-55°C)		
Ozone	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)		
Hydrogen Peroxide	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
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)	32-140°F (0-60°C)*	GFRPP, PVC, FKM, Isoplast	3/4" NPTF

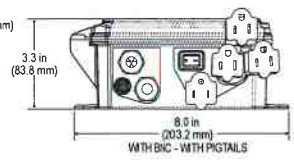


Dimensions

WDSW Sensor option H-P shown







Panel Mounted Flow Switch Manifold Dimensions

	A	B	C	D	E	F	G	H	I	J
Tolerances	+/- 0.1", 2.5 mm					+/- 0.3", 8 mm			+/- 0.01", 0.25 mm	+/- 0.3", 8 mm
WPHPW sensor options F, J or K	22.5" 571 mm	21.5" 546 mm	11.75" 298 mm	10.75" 273 mm	0.75" 19 mm	4" 102 mm	1.5" 38 mm	11" 279 mm	0.25" 6.35 mm	
WCNW sensor option E	24" 610 mm	22.5" 571 mm	19" 483 mm	17.5" 445 mm	0.75" 19 mm	14" 356 mm	6" 152 mm	3" 76 mm	0.25" 6.35 mm	
WDSW sensor options H - P	24" 610 mm	22.5" 571 mm	19" 483 mm	17.5" 445 mm	0.75" 19 mm	15" 381 mm	10" 254 mm	1.5" 38 mm	0.25" 6.35 mm	3" 76 mm

Ordering Information

WCNW (Contacting or Electrodeless Conductivity Sensors)
WPHPW (Amplified pH/ORP Electrodes)
WPHBW (Non-Amplified pH/ORP Electrodes with BNC)
WPHNW (Non-Amplified pH/ORP Electrodes with bare wires)
WDSW (Disinfection Sensors)

Relays/Wiring | Analog Output - Sensors

Relays/Wiring
100H = 3 powered relays, hardwired
100P = 3 powered relays, prewired USA power cord & pigtails
100D = 3 powered relays, prewired DIN power cord, no pigtails
110H = 3 dry relays, hardwired
110P = 3 dry relays, prewired USA power cord, no pigtails
110D = 3 dry relays, prewired DIN power cord, no pigtails
120H = 2 pulse, 1 dry relay, hardwired
120P = 2 pulse, 1 dry relay, prewired with USA power cord, no pigtails
120D = 2 pulse, 1 dry relay, prewired with DIN power cord, no pigtails

Analog Output
N = No analog output
A = One isolated analog (4-20 ma) output

Sensors (WCNW)
N = No sensor
A = Submersion PEEK electrodeless conductivity, 20 ft cable
B = Submersion CPVC electrodeless conductivity, 20 ft cable
C = Inline PEEK electrodeless conductivity, 20 ft cable
D = Inline CPVC electrodeless conductivity, 20 ft cable
E = Inline CPVC electrodeless conductivity w/FS manifold on panel, 3 ft cable
F = Contacting conductivity,1.0 cell constant, 100 psi,10 ft cable
G = Contacting conductivity, 0.1 cell constant,100 psi,10 ft cable
H = Contacting conductivity, 10.0 cell constant,100 psi,10 ft cable
I = Contacting conductivity, 0.01 cell constant,100 psi,10 ft cable
J = Contacting conductivity, 1.0 cell constant, 200 psi,10 ft cable
K = Contacting conductivity, 0.1 cell constant, 200 psi,10 ft cable
L = Contacting conductivity, 10.0 cell constant, 200 psi,10 ft cable
M = Contacting conductivity, 0.01 cell constant, 200 psi,10 ft cable

Sensors (WPHPW)
N = No sensor
A = External preamp, 20 ft cable
B = Submersion pH, no ATC, 20 ft cable
C = Submersion pH, with ATC, 20 ft cable
D = Inline pH, no ATC, 20 ft cable
E = Inline pH, with ATC, 20 ft cable
F = Inline pH, with ATC, with FS manifold on panel, 3 ft cable
G = Submersion flat ORP, 20 ft cable
H = Inline flat ORP, 20 ft cable
I = Inline Rod-Style ORP, 20 ft cable
J = Inline flat ORP with FS manifold on panel, 3 ft cable
K = Inline Rod Style ORP w/ FS manifold on panel, 3 ft cable

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Sensors (WDSW)
N = No sensor
A = Free chlorine, 0-20 ppm, 20 ft cable
B = ClO2, 0-20 ppm, 20 ft cable
C = Ozone, 0-10 ppm, 20 ft cable
D = PAA, 0-2000 ppm, 20 ft cable
E = Extended pH range free chlorine, 0-20 ppm, 20 ft cable
F = Total chlorine, 0-20 ppm, 20 ft cable
G = Peroxide, 0-2000 ppm, 20 ft cable
H = Free chlorine with manifold on panel, 0-20 ppm, 3 ft cable
I = ClO2 with manifold on panel, 0-20 ppm, 3 ft cable
J = Ozone with manifold on panel, 0-10 ppm, 3 ft cable
K = PAA with manifold on panel, 0-2000 ppm, 3 ft cable
L = Extended pH range Cl2 with manifold on panel, 0-20 ppm, 3 ft cable
M = Total chlorine with manifold on panel, 0-20 ppm, 3 ft cable
O = Peroxide with manifold on panel, 0-2000 ppm, 3 ft cable
P = No sensor with manifold on panel, 3 ft cable

Sensors (WPHBW or WPHNW)
N = No sensor

ABOUT US

Walchem integrates its advanced sensing, instrumentation, fluid pumping and communications technologies to deliver reliable and innovative solutions to the global water treatment market. Our in-house engineering is driven by quality, technology and innovation.
For more information on the entire Walchem product line, visit: www.walchem.com

WALCHEM
IWAKI America Inc.

Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park
Holliston, MA 01746 USA
Phone: 508-429-1110 www.walchem.com

Conductivity, pH/ORP & Disinfection

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
- Six 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
- Two Virtual Inputs that are calculated from two real inputs (cycles of concentration, % rejection, etc.)
- 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)
  - 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
  - Spike Set Point
  - For Cooling Tower and Boiler applications:
    - Biocide Timer
    - Boiler blowdown on conductivity using intermittent sampling
- Datalogging
- Emailing Alarm messages, Datalog reports or System Summary reports
- Ethernet option for remote access via the Internet, LAN or Modbus/TCP

WALCHEM
IWAKI America Inc.

Specifications

Inputs

Power
100-240 VAC, 50 or 60 Hz, 7A max Fuse: 6.3 Amp

Sensor Input Signals (0, 1 or 2 depending on model code)
Contacting Conductivity: 0.01, 0.1, 1.0, or 10.0 cell constant, or
Electrodeless Conductivity (not available on the combination sensor/analog input card) or
Disinfection or
Amplified pH or ORP which requires a preamplified signal. Walchem WEL or WDS series recommended. ±5VDC power available for external preamps.
Each sensor input card contains a temperature input.
Temperature: 100 or 1000 ohm RTD, 10K or 100K 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
3-wire and 4-wire 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. 2W (83 mA at 24 VDC) total power consumption for all channels (four total channels possible if two dual boards are installed; 2W is equivalent to 2 Little Dipper sensors)

Digital Input Signals (6):
State-Type Digital Inputs
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: Interlock

Low Speed Counter-Type Digital Inputs
Electrical: Optically isolated and providing an electrically isolated 9V power with a nominal 2.3mA current when the digital input switch is closed, 0-10 Hz, 50 msec minimum width. Devices supported: Any device with isolated open drain, open collector, transistor or reed switch.
Types: Contacting Flowmeter

High Speed Counter-Type Digital Inputs
Electrical: Optically isolated and providing an electrically isolated 9V power with a nominal 2.3mA current when the digital input switch is closed, 0-500 Hz, 1.00 msec minimum width. Devices supported: Any device with isolated open drain, open collector, transistor or reed switch. Types: Paddlewheel Flowmeter

Outputs

Powered Mechanical Relays (0 or 6 model code dependent)
Pre-powered on circuit board switching line voltage
All relays are fused together as one group, total current must not exceed 6A (resistive), 1/8 HP (93W)

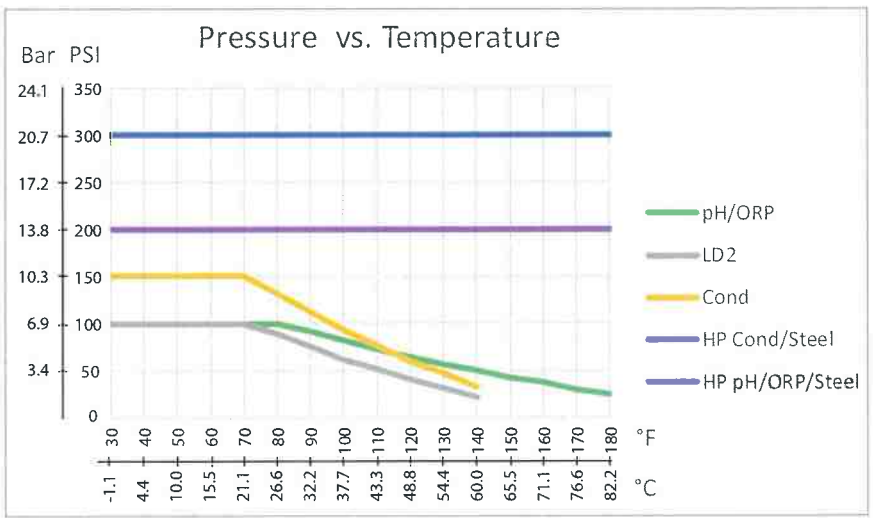
Dry Contact Mechanical Relays (0, 2 or 4 model code dependent)
6 A (resistive), 1/8 HP (93W)
Dry contact relays are not fuse protected.

Pulse Outputs (0, 2 or 4 model code dependent)
Opto-isolated, solid-state relay, 200mA, 40V DC
VLOWMAX = 0.05V @ 18mA

4 - 20 mA (0 or 2 model code dependent)
Internally powered, Fully isolated
600 Ohm max resistive load, Resolution 0.0015% of span
Accuracy ± 0.5% of reading

Mechanical (Sensors) (*see graph)

Sensor	Pressure	Temperature	Materials	Process Connections
Electrodeless conductivity	0-150 psi (0-10 bar)*	CPVC: 32-158°F (0 to 70°C)* PEEK: 32-190°F (0 to 88°C)	CPVC, FKM in-line o-ring PEEK, 316 SS in-line adapter	1" NPTM submersion 2" NPTM in-line adapter
pH	0-100 psi (0-7 bar)*	50-158°F (10-70°C)*	CPVC, Glass, FKM o-rings, HDPE, Titanium rod, glass-filled PP tee	1" NPTM submersion 3/4" NPTF in-line tee
ORP	0-100 psi (0-7bar)*	32-158°F (0-70°C)*		
Contacting conductivity (Condensate)	0-200 psi (0-14 bar)	32-248°F (0-120°C)	316SS, PEEK	3/4" NPTM
Contacting conductivity Graphite (Cooling Tower)	0-150 psi (0-10 bar)*	32-158°F (0-70°C)*	Graphite, Glass-filled PP, FKM o-ring	3/4" NPTM
Contacting conductivity SS (Cooling Tower)	0-150 psi (0-10 bar)*	32-158°F (0-70°C)*	316SS, Glass-filled PP, FKM o-ring	3/4" NPTM
Contacting conductivity (Boiler)	0-250 psi (0-17 bar)	32-401°F (0-205°C)	316SS, PEEK	3/4" NPTM
Contacting conductivity (High Pressure Tower)	0-300 psi (0-21 bar)*	32-158°F (0-70°C)*	316SS, PEEK	3/4" NPTM
pH (High Pressure)	0-300 psi (0-21 bar)*	32-275°F (0-135°C)*	Glass, Polymer, PTFE, 316SS, FKM	1/2" NPTM gland
ORP (High Pressure)	0-300 psi (0-21 bar)*	32-275°F (0-135°C)*	Platinum, Polymer, PTFE, 316SS, FKM	1/2" NPTM gland
Free Chlorine/Bromine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)	PVC, Polycarbonate, silicone rubber, SS, PEEK, FKM, Isoplast	1/4" NPTF Inlet 3/4" NPTF Outlet
Extended pH Range Free Chlorine/Bromine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
Total Chlorine	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
Chlorine Dioxide	0-14.7 psi (0-1 bar)	32-131°F (0-55°C)		
Ozone	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)		
Hydrogen Peroxide	0-14.7 psi (0-1 bar)	32-113°F (0-45°C)		
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)	32-140°F (0-60°C)*	GFRPP, PVC, FKM, Isoplast	3/4" NPTF
Flow switch manifold (High Pressure)	0-300 psi (0-21 bar)*	32-158°F (0-70°C)*	Carbon steel, Brass, 316SS, FKM	3/4" NPTF



Measurement Performance

	Range	Resolution	Accuracy
0.01 Cell Contacting Conductivity	0-300 µS/cm	0.01 µS/cm, 0.0001 mS/cm, 0.001 mS/m, 0.0001 S/m, 0.01 ppm	±1% of reading
0.1 Cell Contacting Conductivity	0-3,000 µS/cm	0.1 µS/cm, 0.0001 mS/cm, 0.01 mS/m, 0.0001 S/m, 0.1 ppm	±1% of reading
1.0 Cell Contacting Conductivity	0-30,000 µS/cm	1 µS/cm, 0.001 mS/cm, 0.1 mS/m, 0.0001 S/m, 1 ppm	±1% of reading
10.0 Cell Contacting Conductivity	0-300,000 µS/cm	10 µS/cm, 0.01 mS/cm, 1 mS/m, 0.001 S/m, 10 ppm	±1% of reading
pH	-2 to 16 pH units	0.01 pH units	±0.01% of reading
ORP	-1500 to 1500 mV	0.1 mV	±1 mV
Disinfection sensors	-2000 to 1500 mV	0.1 mV	±1 mV
	0 - 2 ppm to 0 - 20,000 ppm	Varies with range and slope	Varies with range and slope
Electrodeless Conductivity	500 - 12,000 µS/cm	1 µS/cm, 0.01 mS/cm, 0.1 mS/m, 0.001 S/m, 1 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
	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
	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
	200,000-2,000,000 µS/cm	100 µS/cm, 0.1 mS/cm, 1 mS/m, 0.1 S/m, 100 ppm	±1% of reading
Temperature	23 to 500°F (-5 to 260°C)	0.1°F (0.1°C)	±1% of reading within range

Temperature°C	Range Multiplier%
0	181.3
10	139.9
15	124.2
20	111.1
25	100.0
30	90.6
35	82.5
40	75.5
50	64.3
60	55.6
70	48.9

Temperature°C	Range Multiplier%
80	43.5
90	39.2
100	35.7
110	32.8
120	30.4
130	28.5
140	26.9
150	25.5
160	24.4
170	23.6
180	22.9

Note: Conductivity ranges above apply at 25°C. At higher temperatures, the range is reduced per the range multiplier chart.

Mechanical (Controller)

Enclosure Material	Polycarbonate
Enclosure Rating	NEMA 4X (IP65)
Dimensions	9.5 x 8 x 4" (241 x 203 x 102 mm)
Display	320 x 240 pixel monochrome backlit display with touchscreen
Ambient Temperature	-4 to 131°F (-20 to 55°C)
Storage Temperature	-4 to 176°F (-20 to 80°C)

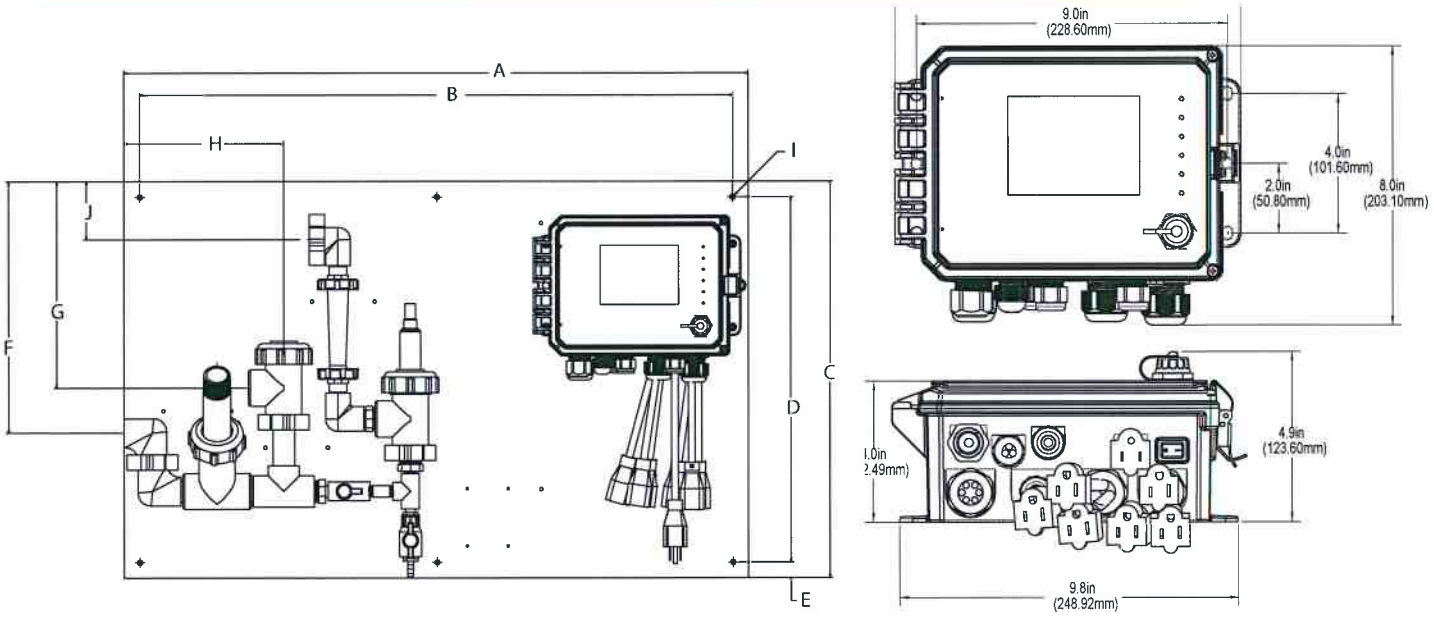
Agency Certifications

Safety: 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

EMC: IEC 61326-1:2012
EN 61326-1:2013

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.

Dimensions



Panel Mounted Flow Switch Manifold Dimensions

W600	A	B	C	D	E	F	G	H	I	J
Tolerances:	+/- 0.1" (2.5 mm)					+/- 0.3" (8 mm)			+/- 0.01" (0.25 mm)	+/- 0.3" (8 mm)
W600-CT-BN/FN	13" (330 mm)	12" (305 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	7" (178 mm)	2" (51 mm)	1.5" (38 mm)		
W600-CT-BA, BB, BC, BD, BH, BI, BJ, BK, FA, FB, FC, FD, FH, FI, FJ	22.5" (571 mm)	21.5" (546 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	4" (102 mm)	1.5" (38 mm)	11" (279 mm)		
W600-CT-DN	22.5" (571 mm)	21.5" (546 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	7" (178 mm)	7" (178 mm)	10" (254 mm)		
W600-CT-DE/DF	22.5" (571 mm)	21.5" (546 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	4" (102 mm)	2" (51 mm)	110" (254 mm)		
W600-CT-HN	24" (610 mm)	22.5" (571 mm)	19" (483 mm)	17.5" (445 mm)	0.75" (19 mm)	14" (356 mm)	6" (152 mm)	3" (76 mm)	0.25" (6.35 mm)	
W600-CT-HA, HB, HC, HD, HH, HI, HJ, HK	24" (610 mm)	22.5" (571 mm)	19" (483 mm)	17.5" (445 mm)	0.75" (19 mm)	11" (279 mm)	6" (152 mm)	3" (76 mm)		
W600-PH-PN/PX	22.5" (571 mm)	21.5" (546 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	4" (102 mm)	1.5" (38 mm)	11" (279 mm)		
W600-PH-QN/QX	22.5" (571 mm)	21.5" (546 mm)	11.75" (298 mm)	10.75" (273 mm)	0.5" (12.7 mm)	7" (178 mm)	4" (102 mm)	1.5" (38 mm)		
W600-DS-PN	24" (610 mm)	22.5" (571 mm)	19" (483 mm)	17.5" (445 mm)	0.75" (19 mm)	15" (381 mm)	10" (254 mm)	1.5" (38 mm)		3" (76 mm)
W600-DS-PX	24" (610 mm)	22.5" (571 mm)	19" (483 mm)	17.5" (445 mm)	0.75" (19 mm)	12" (305 mm)	10" (254 mm)	8" (203 mm)		3" (76 mm)

Ordering Information

WCT
WBL
WPH
WDS
WCN

Example: WCT600PCSNE- BI

RELAYS/WIRING	INPUT CARDS	ANALOG OUTPUTS	ETHERNET	-	SENSORS
WCT600P	CS	N	E		- BI

RELAYS/WIRING

6 powered relays		
	600H	Hardwired
	600P	Prewired with USA cords and pigtails
	600D	Prewired with DIN power cord, no pigtails
2 powered 4 dry relays		
	610H	Hardwired
	610P	Prewired with USA cord and 2 pigtails
	610D	Prewired with DIN power cord, no pigtails
2 opto 4 dry relays		
	620H	Hardwired
	620P	Prewired with USA cord and two 20 ft. pulse cables
	620D	Prewired with DIN power cord, no pigtails
4 opto 2 dry relays		
	640H	Hardwired
	640P	Prewired with USA cord and four 20 ft. pulse cables
	640D	Prewired with DIN power cord, no pigtails

ANALOG OUTPUTS

N	No analog outputs
A	One dual isolated analog output card

ETHERNET

N	No Ethernet
E	Ethernet card
M	Ethernet card with Modbus/TCP

WBL BOILER SENSORS

		Type of Input card required
NN	No sensor	
AN	Boiler sensor with ATC, K=1.0, 250 psi, 20 ft. cable	S or C
BN	Boiler sensor without ATC, K=1.0, 250 psi, 20 ft. cable	
CN	Condensate sensor with ATC, K=0.1, 200 psi, 10 ft. cable	
DN	Boiler sensor with ATC, K=10, 250 psi, 20 ft. cable	
AA	Two boiler sensors, with ATC, K=1.0, 250 psi, 20 ft. cables	SS or CS or CC
BB	Two boiler sensor without ATC, K=1.0, 250 psi, 20 ft. cables	
CC	Two condensate sensors with ATC, K=0.1, 200 psi, 10 ft. cables	
DD	Two Boiler sensors with ATC, K=10, 250 psi, 20 ft. cables	
AB	Boiler sensor with ATC, K=1.0 and boiler sensor without ATC, K=1.0, 250 psi, 20 ft. cables	
AC	Boiler sensor with ATC, K=1.0 20 ft.cable and Condensate sensor with ATC, K=0.1, 250 psi, 10 ft. cable	
AD	Boiler sensor with ATC, K=1.0 and Boiler sensor with ATC, K=10, 250 psi, 20 ft. cables	
BC	Boiler sensor without ATC, 20 ft. and condensate sensor with ATC, 10 ft. cable	
BD	Boiler sensor without ATC and Boiler sensor with ATC, K=10, 250 psi, 20 ft. cables	
CD	Condensate sensor with ATC, 10 ft. cable and Boiler sensor with ATC, K=10, 250 psi, 20 ft. cable	

WPH PH/ORP SENSORS

NN	No sensors or flow switch manifold	
PN	Single low pressure manifold on panel**	S or C
QN	Single high pressure manifold on panel with 190783*	
PX	Dual low pressure manifold on panel**	SS or CS or CC
QX	Dual high pressure manifold on panel with two 190783*	

*Order 102029 pH and/or 102963 ORP electrodes separately
**Order WEL electrode(s) and preamplifier housing(s) separately

WDS DISINFECTION SENSORS

NN	No sensors or flow switch manifold	
PN	Single DIS manifold on panel*	S or C
PX	DIS manifold plus pH/ORP/cooling tower cond tee on panel**	SS or CS or CC
FN	Single DIS flow cell/cable, no sensor*	S or C
FF	Two DIS flow cell/cable, no sensors*	SS or CS or CC

*Order disinfection sensor(s) separately
**Order disinfection sensor and WEL electrode and preamplifier housing or cooling tower conductivity sensor separately

WCN CONDUCTIVITY SENSORS

NN	No sensors or flow switch manifold*	S or C for each sensor to be used

*Order conductivity sensor separately

INPUT CARDS

NN	No sensor input cards
SN	One sensor input card
SS	Two sensor input cards
CS	One sensor input card & one combination sensor/analog input card
CN	One combination sensor/analog input card
CA	One combination sensor/analog input card & one dual analog input card
CC	Two combination sensor/analog cards
AN	One dual analog input card
AA	Two dual analog input cards
SA	One sensor input card and one dual analog input card

WCT COOLING TOWER SENSORS

			Type of Input card required
NN		No sensor	
AN		Inline graphite contacting conductivity	S or C
BN		Graphite contacting conductivity + Flow Switch manifold on panel	
CN		High pressure contacting conductivity	
DN		High pressure contacting conductivity + Flow Switch manifold on panel	
EN		Inline 316SS contacting conductivity	
FN		316SS contacting conductivity + Flow Switch manifold on panel	
GN		Inline electrodeless conductivity	S
HN		Electrodeless conductivity + Flow Switch manifold on panel	
Graphite contacting conductivity + Flow Switch manifold on panel			
	BA	+ Flat pH Cartridge no ATC	SS or CS or CC
	BB	+ Rod ORP Cartridge no ATC	
	BC	+ Flat ORP Cartridge no ATC	
	BD	+ Little Dipper	SA or C
	BH	+ Flat pH Cartridge no ATC + Little Dipper	CS or CC
	BI	+ Rod ORP Cartridge no ATC + Little Dipper	
	BJ	+ Flat ORP Cartridge no ATC + Little Dipper	
	BK	+ Little Dipper + Flow Switch manifold on panel with Makeup graphite conductivity with threaded adapter	
316SS contacting conductivity + Flow Switch manifold on panel			
	FA	+ Flat pH Cartridge no ATC	SS or CS or CC
	FB	+ Rod ORP Cartridge no ATC	
	FC	+ Flat ORP Cartridge no ATC	
	FD	+ Little Dipper	SA or C
	FH	+ Flat pH Cartridge no ATC + Little Dipper	CS or CC
	FI	+ Rod ORP Cartridge no ATC + Little Dipper	
	FJ	+ Flat ORP Cartridge no ATC + Little Dipper	
High pressure contacting conductivity + Flow Switch manifold on panel			
	DE	+ pH &190783	SS or CS or CC
	DF	+ ORP & 190783	
Electrodeless conductivity + Flow Switch manifold on panel			
	HA	+ Flat pH Cartridge no ATC	CS
	HB	+ Rod ORP Cartridge no ATC	
	HC	+ Flat ORP Cartridge no ATC	
	HD	+ Little Dipper	SA or CS
	HH	+ Flat pH Cartridge no ATC + Little Dipper	CS
	HI	+ Rod ORP Cartridge no ATC + Little Dipper	
	HJ	+ Flat ORP Cartridge no ATC + Little Dipper	
	HK	+ Little Dipper + Flow Switch manifold on panel with Makeup graphite conductivity with threaded adapter	

WALCHEM
IWAKI America Inc.

180625.H October 2016

Web-Based Remote Monitoring & Datalogging

WebAlert®

WebAlert was developed to meet the increasing demands for improved operational efficiencies and enhancements to service programs that can be gained by continuous monitoring of remote equipment and systems.

WebAlert seamlessly web-enables your installed equipment, providing local and remote access to vital system information, without the need to physically visit remote sites. WebAlert monitors and datalogs analog and digital inputs from virtually any installed device, and notifies on-site and remote personnel of any system abnormalities.

The data handling and communications options in WebAlert are truly innovative. Ethernet and USB are standard features, therefore local or plant networked PC's can be connected and communicating with WebAlert in true Plug & Play fashion. Authorized operators and quality control personnel can view LIVE system parameters and historical graphs, as well as receive emailed alarms, reports or datalog files.

Summary of Key Benefits

- WebAlert integrates the functions of a monitor, data logger and auto-dialer in one low cost package. It is easily customized to your application without the need for a programmer.
- VTouch® provides quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click.
- No subscription service, monthly fees, or proprietary software is required. View data and program settings with just a standard web browser.
- Monitor up to six (6) 4-20mA signals and six (6) discrete inputs.
- Access live or stored data remotely within the facility (LAN) or from anywhere in the world.
- System status reports and datalog files can be emailed automatically on a regular basis. Instant alarm notification via cell phone text message, email, or local alarm relay.

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Features

WebAlert® Series | Web-Based Remote Montioring and Datalogging

Convenience

WebAlert has been designed with convenience and ease-of use in mind. It has extensive built-in datalogging capability so there's no need for a separate datalogging device. The data can be retrieved automatically (email Excel file attachment) or manually, through the convenience of a standard USB flash disk.

Simple data extraction to USB stick

Simplicity

Unlike PLC's or similar devices, WebAlert does not require a software programmer for customization to your application. This reduces upfront costs and eliminates recurring expenses for software maintenance. Commissioning is as simple as connecting with a laptop and following the intuitive menus to configure the WebAlert to meet your needs.

Receive spreadsheet datalogs as an attachment to an email at user-defined time periods.

A variety of reporting options can be utilized to meet your needs. A system summary report provides a snapshot of current conditions and alarms. A datalog report can be sent on a regular basis for historical trending. In addition, email and cell phone text alarm messages can be sent.

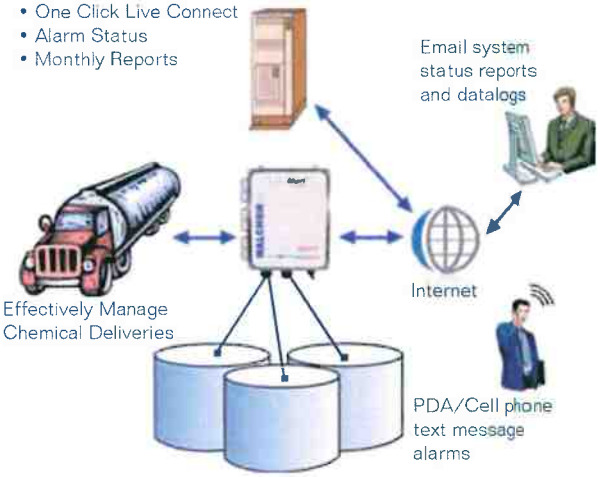
Receive alarms via cell phone text messaging.

Remote Chemical Inventory Management

WebAlert is perfect for remote chemical inventory management. Level sensors and switches from a variety of sensing devices may be connected directly to the WebAlert, providing live information about chemical inventories, which makes management of chemical deliveries efficient, prevents down-time in critical processes, and provides immediate notification of alarm conditions. An online device management service from Walchem will be available to enable the user to view all of their locations on a single web page.

Online Device Management Service

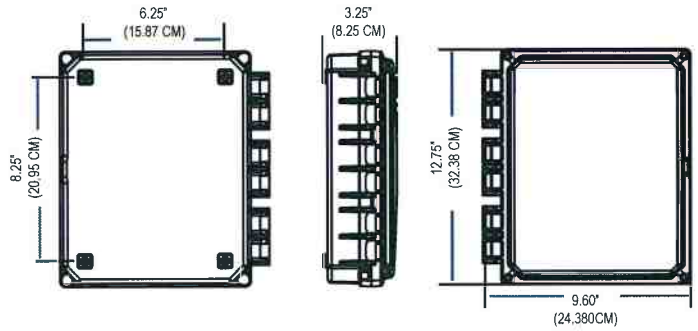
- Critical Process Values
- Summary View of Devices
- One Click Live Connect
- Alarm Status
- Monthly Reports



Remote System Monitoring

WebAlert will monitor up to six (6) 4-20mA signals and six (6) discrete inputs, giving you instant access (from anywhere in the world) to vital system parameters, including level, flow, pressure, temperature, or any other device with a standard 4-20mA or discrete output.

Specifications



Mechanical Specifications

Enclosure:	Polycarbonate
NEMA Rating:	NEMA 4X (IP65)
Ambient Temperature:	32 to 140°F (0 to 60°C)
Storage Temperature:	-20 to 176°F (-29 to 80°C)
Shipping Weight:	18 lbs (8.2 kg) (approximate)

Measurement Performance

Range:	3.75-20.25 mA
Resolution:	0.03 mA
Calibration:	±1 mA

Electrical

Input Power: 100-240VAC ±10%
1.0A, 50/60 Hz
Fuse 1.0A 5 x 20mm

Agency Certifications

Safety	UL 61010-1:2012 3rd Ed.
	CSA C22.2 No. 61010-1:2012 3rd Ed.
	IEC 61010-1:2010 3rd Ed.
	EN 61010-1:2010 3rd Ed.
EMC	IEC 61326-1:2012
	EN 61326-1:2013

Note: For EN61000-4-6,and EN61000-4-3 the controller met performance criteria B.
*Class A equipment: Equipment 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.

Input Signals:

State-Type Digital Inputs	Electrical: Non-Isolated 5 VDC with 301 K ohm pull-up Typical response time: < 10 seconds Devices supported: Any isolated dry contact (i.e. relay, reed switch) Support on inputs: 1 through 6 Types: Generic input
Low Speed Counter-Type Digital Inputs	Electrical: Non-Isolated 5 VDC with 301 K ohm pull-up, 0-10 Hz, 50 msec minimum width Devices supported: Any device with isolated open drain, open collector, transistor or reed switch Support on inputs: 1 through 4 Types: Contacting flow meter, Generic counter
High Speed Counter-Type Digital Inputs	Electrical: Non-Isolated 5 VDC with 301 K ohm pull-up, 0-400 Hz, 1.25 msec minimum width Devices supported: Any device with isolated open drain, open collector, transistor or reed switch Support on inputs: 1 through 4 Types: Paddlewheel flow meter, Generic counter
Analog Inputs (1-6)	4-20 mA, 2-wire or 3-wire, internally powered by 24 VDC, 110 ohm input resistance, 1000 ohm maximum load, Typical response time < 10 seconds

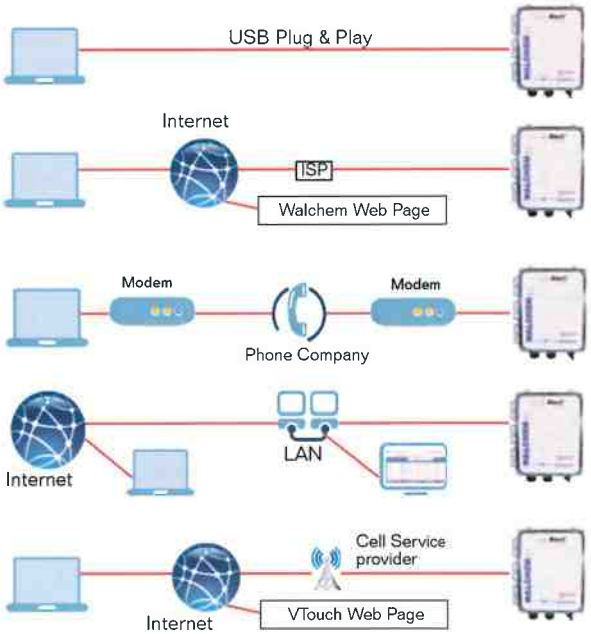
Outputs:

Solid State relay	Dry contact, 0 to 40 VDC, No AC voltage, 150 mA maximum load
Digital	USB, Ethernet, 10 Base T

Communications

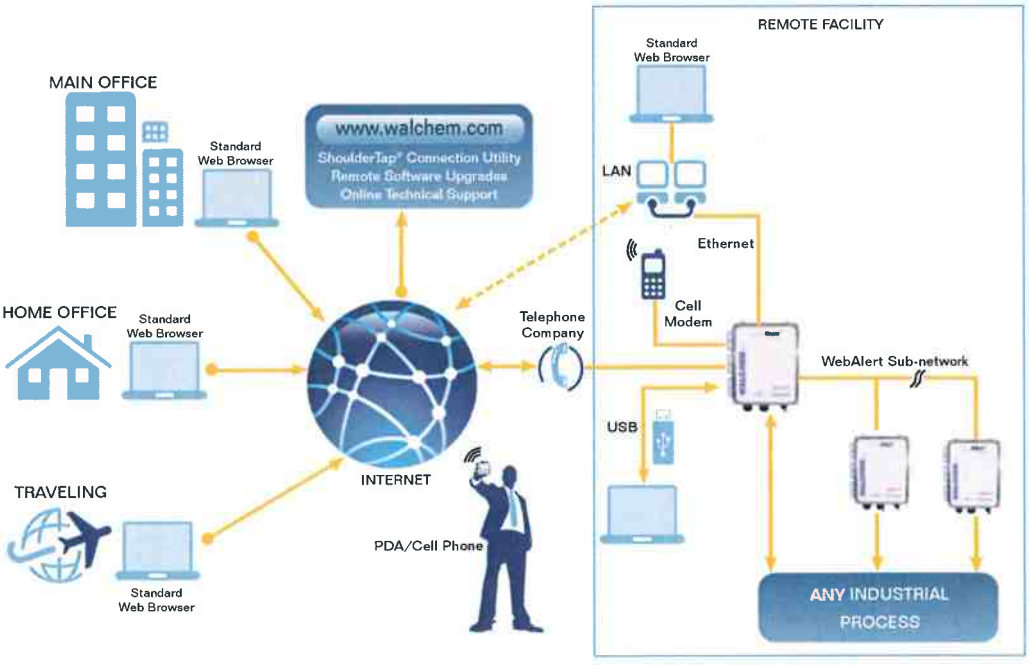
WebAlert's embedded web-server and TCP/IP Internet communications make it possible to establish local or remote communications with a standard web browser from a laptop or PC. USB and Ethernet are standard features, allowing easy on-site access for plant personnel and system operators. Remote communications can be accomplished via the Internet or over a phone line with the PSTN (landline) or Cellular modem option. WebAlert supports simultaneous multi-user access, which makes it possible for personnel from local and remote locations to view live data, troubleshoot, and configure the system more efficiently than ever before. A graduated password protection system allows users varied degrees of access from "view only" to "full configuration".

- **USB Plug and Play:** For local monitoring and reconfiguration of your WebAlert via LapTop or dedicated on-site PC.
- **ShoulderTap® Internet Communications:** For monitoring and reconfiguration of your WebAlert remotely via the Internet (requires landline modem card option).
- **DirectTap Modem-to-Modem:** For remote monitoring and reconfiguration of your WebAlert using traditional modem-to-modem communications (requires landline modem card option).
- **Ethernet:** For monitoring and reconfiguration of your WebAlert via Local Area Network or remotely via the Internet
- **Cellular:** For monitoring and reconfiguration of your WebAlert remotely via the Internet (requires cell modem and VTouch option).



ETHERNET NETWORKING

By using the on-site Local Area Network (LAN) or by connecting the WebAlerts together via Ethernet, you can access all of the WebAlerts on a network from a single phone line or IP address. The "Master" WebAlert automatically detects the other WebAlerts and serves as a window to the "slaves" on the network, greatly reducing the cost and time associated with device configuration and running phone lines to each device. DHCP is supported to enable WebAlert to automatically obtain an IP address from the LAN.



VTouch® Account Manager

'Smart' Service:

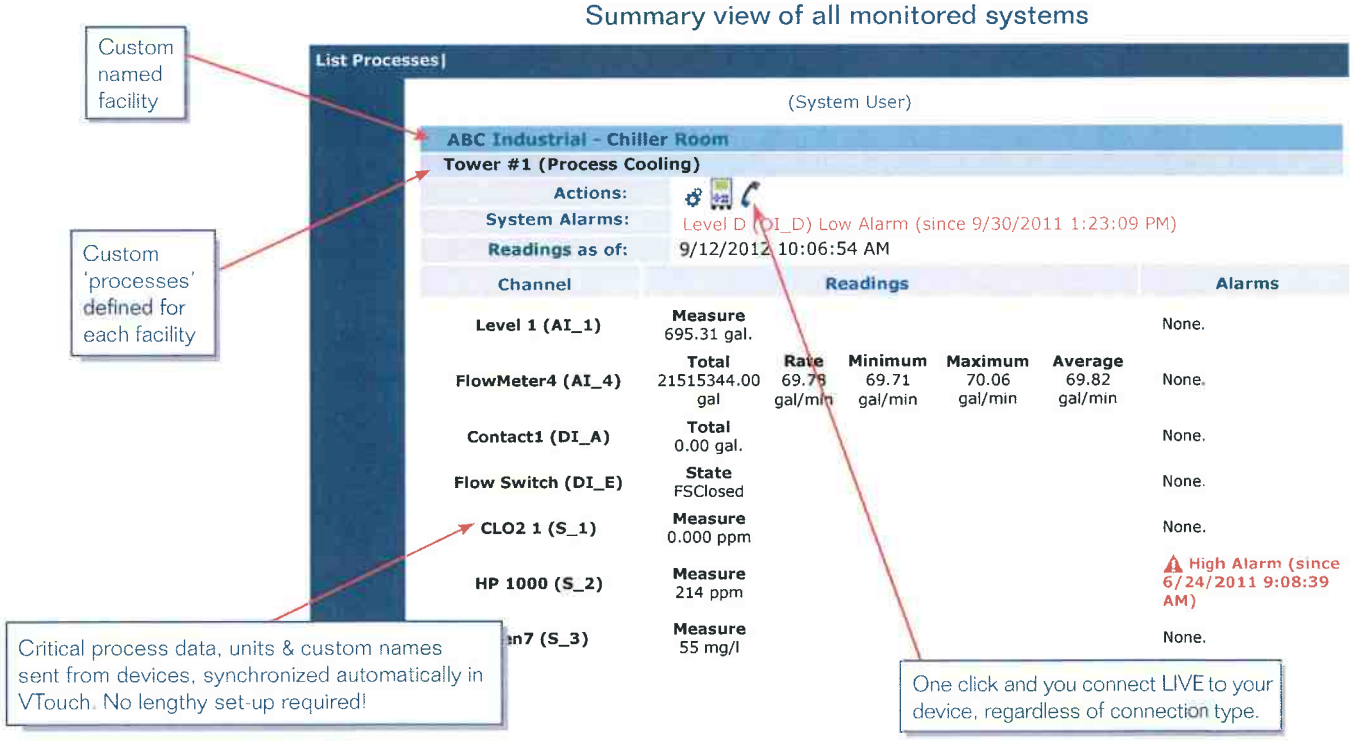
- On-line, web-based summary of account status
  - Process values continuously updated including past 24 hour min, max and average values
  - Alarm status
- One-click LIVE Connect to any device in the field for full view and reconfiguration
  - Analysis, troubleshooting, adjustments
- Seamlessly organize devices according to a process(es), facility, customer, etc.
- User "access" and "permissions" management
- Eliminates surprises during 'routine' visits
- Makes service PROACTIVE not reactive
- SAVES TIME! Plain & Simple

VTouch is a collection of technologies designed for companies offering managed water treatment services. The VTouch solution allows service companies to more effectively manage remote accounts by significantly reducing the complexities associated with the deployment of water treatment service programs based around communicating products.

The VTouch Account Manager is fully synchronized with Walchem's web based controllers, making set-up and configuration simple and fast. Just specify the type of remote communications needed for new or existing controllers and Walchem takes care of the rest. No need to sort out and track complicated and constantly moving cellular data or dial-up ISP plans from large companies with poor customer service and unpredictable monthly charges. VTouch solves these problems by bundling the communications services, giving you a completely turn-key solution.

The innovative, fully synchronized nature of VTouch provides you with a quick, centralized 24/7 awareness of account status with the ability to LIVE Connect to any of your controllers in the field with one simple mouse-click, regardless of connection type! No phone numbers or IP addresses to remember.

Summary view of all monitored systems



Ordering Information

WA500 — ☐ Wiring ☐ Comms Hardware ☐ Comms Software

WIRING

H = Hardwired, cable glands
P = USA power cord w/cable glands

COMMUNICATIONS (USB & ETHERNET STANDARD)

N = No additional communications
M = Modem card
G = Cellular modem card (GPRS)

COMMUNICATIONS SOFTWARE

N = None
1 = Ethernet Networking Master Capability

Webmaster®ONE

WebMasterONE is the most advanced online cooling tower and boiler controller in the water treatment industry. The flexible multi-I/O platform allows you to control multiple cooling towers, boilers, closed loops, and condensate lines with just one controller. An extensive assortment of integrated communications and data handling features are included that enable water treatment professionals to provide more effective water management services to their customers.

Metering Pumps

The E-Class is the most innovative and comprehensive metering pump product line in the world. Over 50 years of pump experience and a commitment to superior mechanical design has led to development of many industry firsts, including 360 stroke-per-minute technology, IP67 waterproof construction, and the world's highest capacity solenoid metering pumps.

WIND WebMaster® Industrial Water Controllers

Walchem's WebMaster Industrial (WIND) Controller sets a new standard for Industrial Water Treatment Controllers. WIND has a flexible multi-I/O platform, a wide range of analytical sensor measurement capabilities, and an extensive assortment of integrated communications and data handling features.

WebAlert Remote Monitor

Walchem's WebAlert is the first stand alone remote monitoring device that can web enable your installed equipment without having to replace or upgrade it.

nqa. ISO 9001 Registered ANAB

ABOUT US

Walchem integrates its advanced sensing, instrumentation, fluid pumping and communications technologies to deliver reliable and innovative solutions to the global water treatment market. Our in-house engineering is driven by quality, technology and innovation. For more information on the entire Walchem product line, visit: www.walchem.com.

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WALCHEM
IWAKI America Inc.
Walchem, Iwaki America Inc.
Five Boynton Road Hopping Brook Park
Holliston, MA 01746 USA
Phone: 508-429-1110 www.walchem.com