

Electrodeless Conductivity Controllers

WEC/WDEC410 Series

OVERVIEW

The WEC/WDEC410 Series Single and Dual Input Electrodeless Conductivity Controllers measure conductivity of a solution via an encapsulated, non-contacting sensor to control replenishment pumps and alarms. They may be installed in a variety of very harsh chemical control applications, including oily cleaner baths, chromates, rinse tanks, fume scrubbers and other concentrated chemicals up to a conductivity of 1000 mS/cm.

Four conductivity ranges may be selected to configure the controller over a wide range of applications. Choice of measurement units is $\mu\text{S}/\text{cm}$, mS/cm , ppm and % concentration. The non-contacting, toroidal sensor technology is immune to thin coatings and the contamination and calibration problems that direct contacting sensors are prone to.

Integrated datalogging is available to validate performance. A USB memory stick is all that's needed to extract data and event logs that include conductivity measurements, temperature and relay status. Download log files from the USB stick to a PC at your convenience. It couldn't be easier!



SUMMARY OF KEY BENEFITS

➤ Dual Input Reduces Cost

WDEC can accept two electrodeless conductivity sensor inputs, allowing one controller to take the place of two, reducing cost and space requirements, and simplifying installation.

➤ Versatility for a Broad Range of Applications

Choose PEEK sensors for higher temperature, more aggressive chemical applications, or CPVC sensors for lower temperature, less aggressive chemical applications. Both are available for in-line or submersible applications. On/Off and Time Proportional control modes are menu selectable.

➤ Ideal for Harsh Environments

The rugged, NEMA 4X enclosure, combined with Walchem's electrodeless conductivity sensors, provides a waterproof system with no metallic parts exposed to wet or corrosive environments.

➤ Built-in Safety Features

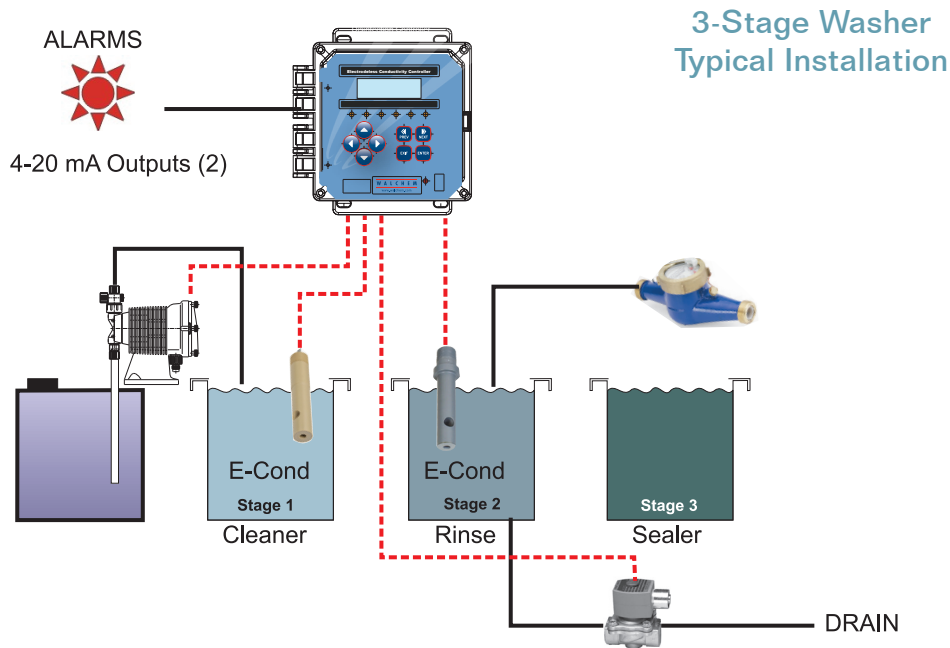
Programmable output limit timers prevent run-away chemical addition. Digital Interlock Input may be used from a flow switch or level input to prevent chemical addition based on a stagnant sample, or control of an empty tank. The alarm relay notifies plant personnel of alarm conditions as soon as they occur.

➤ Simple, Integrated Data Collection

Download stored data from the controller to a USB stick with the press of a button. Use the data to simply and easily validate system performance, document compliance, and reduce liability. The data and event logs show conductivity and temperature values, as well as accumulated chemical feed and alarm relay activation times.



WEC/WDEC410 Series | Electrodeless Conductivity Controller



» Single or Dual Input

- One unit monitors two baths with control and alarm relay for each, resulting in considerable cost savings

» Electrodeless sensor design

- Measures accurately over a wide dynamic range can be used in applications from $50 \mu\text{S}$ to 1000 mS

» Time proportional and control option

- Selectable on front panel keypad
- Varies the pump or valve on time depending on deviation from set point

» Self-diagnostics

- Monitor performance without taking the unit off-line, permitting faster troubleshooting and less downtime

» USB Flashstick Support

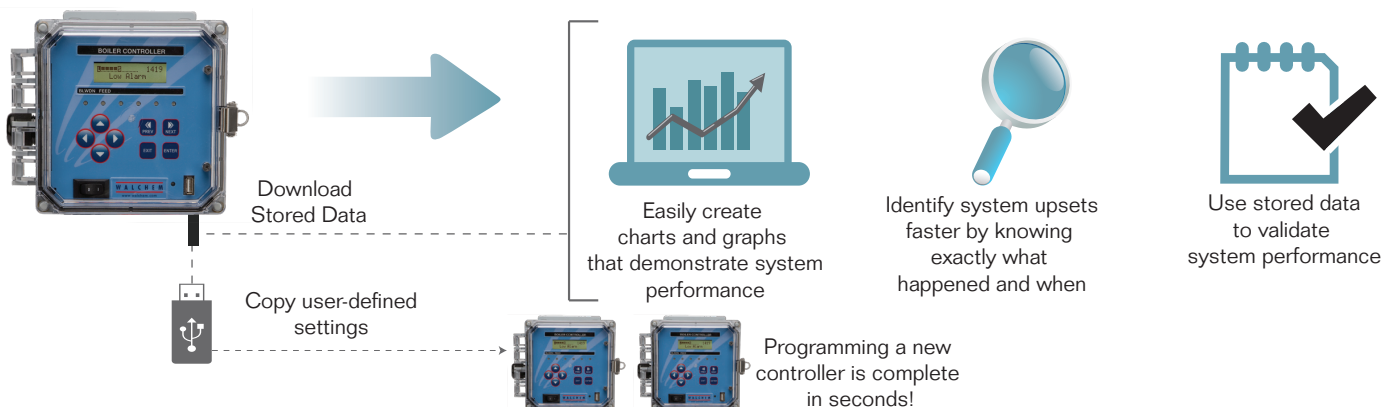
- Standard for data logs, event/relay and reset logs, and user configuration file import/export

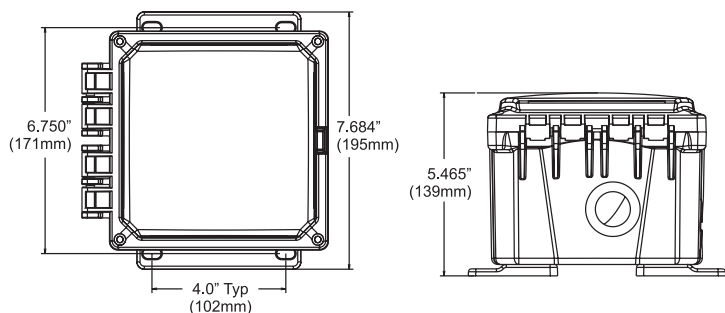
» Measurement Units

- Choice of $\mu\text{S}/\text{cm}$, mS/cm , ppm or % concentration
- % Concentration allows the user to enter up to 5 calibration data points

USB Features

- » Integrated datalogging collects analytical measurements at 10 minute intervals and captures all relay activations.





AGENCY CERTIFICATIONS

UL	ANSI/UL 61010-1:2004, 2nd Edition*
CAN/CSA	C22.2 No.61010-1:2004 2nd Edition*
CE Safety	EN 61010-1 2nd Edition (2001)*
CE EMC	EN 61326 :1998 Annex A*

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.

Inputs

Input Power

100-240 VAC, 50/60 Hz, 8A
Fuse: 1.0 ampere, 5 x 20 mm

Input Signals

Conductivity: ± 2000 mV
Temperature Compensation: 100 kohm
Interlock (optional): Isolated, dry contact closure required (i.e. reed switch)

Outputs

Mechanical Relays (5)

Internally powered relays switching line voltage
6A (resistive), 1/8 HP

All relays are fused together in one group, total current for this group must not exceed 6A

4 - 20 mA 1 or 2 (optional)

Internally powered
Fully isolated
600 Ohm max resistive load
Resolution .001% of span
Accuracy $\pm 1\%$ of reading

Sensor Power: ± 5 VDC, 5mA

Measurement Performance

Conductivity Range	50-1000 μ S/cm	1000-10,000 μ S/cm	10-100 mS/cm	100-1000 mS/cm
Resolution	1 μ S	1 μ S	0.1 mS	1 mS
Accuracy	$\pm 3\%$ of reading below 50 μ S/cm accuracy $\pm 25\%$	$\pm 1\%$ of reading below 1000 μ S/cm accuracy $\pm 25\%$	$\pm 1\%$ of reading below 10 mS/cm accuracy $\pm 25\%$	$\pm 1\%$ of reading below 100 mS/cm accuracy $\pm 25\%$
Temperature Range	32 to 212°F (0 to 100°C)			
Resolution	1°F (1°C)			
Accuracy	$\pm 1^\circ$ F ($\pm 1^\circ$ C)			

Mechanical (controller)

Enclosure	Polycarbonate
NEMA Rating	NEMA 4X (IP65)
Display	2 x 16 character backlit liquid crystal
Ambient Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	-20 to 180°F (-29 to 80°C)
Shipping weight	7 lbs (3 kg) (approximately)



CPVC



PEEK

Sensor Specifications

	CPVC	PEEK
O-ring	FKM (in-line mounting)	N/A
Adapter	CPVC (in-line mounting)	316 SS
Dimensions	7" (178mm) L x 1.75" (44mm) diameter	7" (178mm) L x 1.75" (44mm) diameter
Sensing Coil	0.5" (13mm aperture)	0.5" (13mm aperture)
Temperature Limitations	20° to 180°F (-5° to 80°C)	20° to 190°F (-5° to 88°C)
Pressure Rating	-15 to 140 psi (-0.1 to 0.98 MPa)	-15 to 250 psi (-0.1 to 1.75 MPa)
Mounting	Submersion: 1" NPTM thread In-line: 2" NPTM adapter	1" NPTM thread 2" NPTM adapter
Cable	20 ft. (6 m)	20 ft. (6 m)

ORDER INFORMATION

WEC410 — U
voltage output sensor 1 USB

WDEC410 — U
voltage output sensor 1 sensor 2 USB

VOLTAGE

1 = 120 VAC, prewired
5 = Hardwired, cable glands

OUTPUT

N = No 4-20 mA data output
4 = One (1) Isolated 4-20 mA output
2 = Two (2) Isolated 4-20 mA outputs

SENSOR (SELECT 2 IN ALPHABETICAL ORDER FOR WDEC)

N = No sensor

0.1 to 1.0 mS/cm

A = Submersion PEEK sensor
B = In-line PEEK sensor w/SS adapter
C = Submersion CPVC sensor
D = In-line CPVC sensor w/CPVC adapter

1.0 to 10.0 mS/cm

E = Submersion PEEK sensor
F = In-line PEEK sensor w/SS adapter
G = Submersion CPVC sensor
H = In-line CPVC sensor w/CPVC adapter

10.0 to 100 mS/cm

I = Submersion PEEK sensor
J = In-line PEEK sensor w/SS adapter
K = Submersion CPVC sensor
L = In-line CPVC sensor w/CPVC adapter

100 to 1000 mS/cm

M = Submersion PEEK sensor
O = In-line PEEK sensor w/SS adapter
P = Submersion CPVC sensor
Q = In-line CPVC sensor w/CPVC adapter

USB FEATURES

U = Integrated datalogging, event/reset logging, and configuration file import/export



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.

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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