

## Overview

Walchem's WEC310 Series controllers measure conductivity of a solution via an encapsulated, non-contacting sensor to control replenishment pumps and alarms. One or two baths may be controlled at once.

The controllers may be applied in a number 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 are:  $\mu\text{S}/\text{cm}$ , mS/cm, ppm and % concentration.

The non-contacting, *toroidal*, sensor technology eliminates the contamination and calibration issues that direct contacting sensors are prone to. The conductivity measurement is extremely reliable, the sensor is immune to thin coatings that would impair operation of direct contacting sensors and a wide range of conductivity may be measured. PEEK<sup>TM</sup> sensor construction results in excellent mechanical strength, high temperature capability and resistance to chemical attack. CPVC sensors offer good chemical resistance at a lower price.



## WEC Series Electrodeless Conductivity Controllers

### Summary of Benefits

- **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 and can be used in applications from 50 $\mu\text{S}$  to 1000mS.
- **Time proportional control option** may be selected through front panel keypad. This control strategy varies the pump or valve on time depending on the deviation from the set point.
- **Electrodeless sensor design** resists fouling, providing longer unattended service.
- **Self diagnostics** monitor performance without taking the unit off-line, permitting faster troubleshooting and less downtime.

**W A L C H E M**

# Specifications

## INPUTS

Power	115VAC ±15% 50/60 Hz, 50mA	230VAC ±15% 50/60 HZ, 25mA
Signals	Conductivity	100K Thermistor

## OUTPUTS

Mechanical relays (5)	Internally powered @ 115 VAC, 10A resistive, 1/8 HP @ 230 VAC, 6A resistive, 1/8 HP
4-20mA (Optional, up to 2)	Fully isolated, internally powered 600Ω max. resistive load. Resolution 0.001% of span, accuracy ± 1% of reading

## MEASUREMENT PERFORMANCE

Conductivity Range	50-1000 μS/cm	1000-10,000 μS/cm	10-100 mS/cm	100-1000 mS/cm
Resolution	1 μS	1 μS	0.1 mS	1 mS
Accuracy	±3% of reading (below 50 μS/cm accuracy ±25%)	±1% of reading (below 1000 μS/cm accuracy ±25%)	±1% of reading (below 10 mS/cm accuracy ±25%)	±1% of reading (below 100 mS/cm accuracy ±25%)
<i>Temperature:</i>				
Resolution	0.1 degree			
Accuracy	±1% of span			
Range	32-400°F (0-200°C)			

## MECHANICAL (controller)

Enclosure	Fiberglass
NEMA rating	NEMA 4X (IP65)
Display	2 x 16 character backlit liquid crystal
Ambient temperature	32 to 158°F (0 to 70°C)
Shipping weight	10 lbs (approximately)

## AGENCY CERTIFICATIONS

UL	UL508
CSA	C22.2#142
CE Safety	EN 61010-1
CE EMC	EN 61326 Annex A*

Note: For EN61000-4-3, the controller met performance criterion B.

Note: For EN61000-4-5, the controller met performance criterion C.

\*Class A equipment: Equipment suitable for use in establishments other than domestic and those directly connected to a low voltage (100-240VAC) power supply network which supplies buildings used for domestic purposes.

## 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) dia.	7" (178mm) L x 1.75" (44mm) dia.
Sensing Coil	0.5" (13mm aperture)	0.5" (13mm aperture)
Temp. Limitations	20 to 180°F (-5 to 80°C)	20 to 250°F (-5 to 120°C)
Pressure Rating	-15 to 140 psi (-0.1 to 0.77 MPa)	-15 to 250 psi (-0.1 to 1.72 MPa)
Mounting	Submersion 1" NPTM thread In-Line 2" NPTM adapter	1" NPTM thread 2" NPTM adapter

## TWO SENSOR OPTIONS



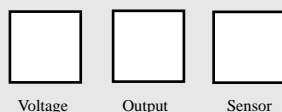
PEEK



CPVC

## ORDERING INFORMATION

WEC310-



### VOLTAGE

- 1 = 115VAC, prewired
- 4 = 115VAC, conduit
- 5 = 230VAC, conduit

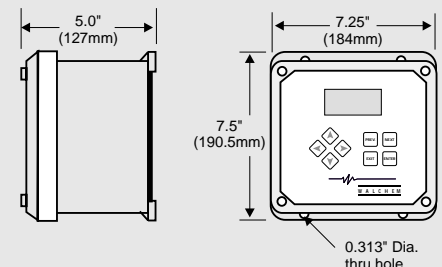
### OUTPUT

- N = No 4-20 mA output
- 4 = Single 4-20mA output
- 2 = Two 4-20 mA outputs

### SENSOR

- N = No sensor
- A = One submersion PEEK sensor
- B = Two submersion PEEK sensors
- C = One in-line PEEK sensor\*\*
- D = Two in-line PEEK sensors\*\*
- 5 = One submersion CPVC sensor
- 6 = Two submersion CPVC sensors
- 7 = One in-line CPVC sensor\*\*
- 8 = Two in-line CPVC sensors\*\*

\* In-line PEEK sensors come with 316SS mounting adapter.  
\*\* In-line CPVC sensors come with CPVC adapter.



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