

# Disinfection Sensors



## Amperometric Disinfection Sensors

Walchem's amperometric disinfection sensors offer a cost effective and reliable solution to your disinfection control requirements. Compatible with the WDIS, W100, W600 and WebMaster® series controllers, the sensors continuously and directly measure the chemical concentration, without the use of reagents.

We offer sensors, in varying ranges of concentration, for free chlorine/bromine, total chlorine, chlorine dioxide, ozone, peracetic acid and hydrogen peroxide. Whether the application is a cooling tower, food and beverage, drinking water, wastewater, or swimming pool, these sensors are the ideal solution.



### Summary of Key Benefits

- Low maintenance - no costly reagents or tubing to replace
- Broad range of applications - wide variety of oxidizers and measurement ranges
- Fast response - continuous measurement technique
- No waste - the sample can be returned to the process

	Free Chlorine/ Bromine	Free Chlorine/Bromine - Extended pH Range	Total Chlorine	Chlorine Dioxide	Peracetic Acid	Ozone	Hydrogen Peroxide
Range (Nominal, W100, W600)	0-2 mg/l 0-20 mg/l 0-200 mg/l	0-20 mg/l	0-20 mg/l	0-2 mg/l 0-20 mg/l 0-200 mg/l	0-200 m/l 0-2,000 mg/l 0-20,000 mg/l	0-20 mg/l	0-200 m/l 0-2,000 mg/l 0-20,000 mg/l
Range (WDIS)	0-1.33 mg/l 0-13.25 mg/l 0-132.5 mg/l	0-12.5 mg/l	0-16.75 mg/l	0-1.67 mg/l 0-16.75 mg/l 0-167.5 mg/l	0-167.5 mg/l 0-1,675 mg/l 0-16,750 mg/l	0-16.75 mg/l	0-167.5 mg/l 0-1,675 mg/l 0-16,750 mg/l
Range (WIND)	0-0.8 mg/l 0-8 mg/l 0-80 mg/l	0-7.5 mg/l	0-10 mg/l	0-1.0 mg/l 0-10 mg/l 0-100 mg/l	0-100 mg/l 0-1000 mg/l 0-10,000 mg/l	0-10 mg/l	0-100 mg/l 0-1000 mg/l 0-10,000 mg/l
Range (WM1)	0-8 mg/l	0-7.5 mg/l	0-10 mg/l	0-10 mg/l			
Resolution	0.001 mg/l 0.01 mg/l 0.1 mg/l	0.01 mg/l	0.01 mg/l	0.001 mg/l 0.01 mg/l 0.1 mg/l	0.1 mg/l 1 mg/l 10 mg/l	0.01 mg/l	0.1 mg/l 1 mg/l 10 mg/l
Sensitivity	HOCl (100%) HOBr (100%) Ozone ClO <sub>2</sub> (900%)  <b>NOT</b> for use with isocyanuric acid or stabilized bromine	HOCl (100%) HOBr (100%) Ozone ClO <sub>2</sub> (100%) HOCl with isocyanuric acid <b>NOT</b> for use with stabilized bromine	Total Cl <sub>2</sub> (100%) ClO <sub>2</sub> (100%) Ozone (130%)	ClO <sub>2</sub> (100%) Free Chlorine (5%) Ozone (2500%)	PAA (100%) Ozone (250%) ClO <sub>2</sub> (100%) H <sub>2</sub> O <sub>2</sub> (0.5%)	Ozone (100%) ClO <sub>2</sub> (6%)	H <sub>2</sub> O <sub>2</sub> (100%) Chlorine PAA Ozone (none may be present)
Flow rate of sample	30 to 100 liters/hour (0.13 to 0.44 gal/min)						
pH range of sample	6.8 – 8.0 (pH must be stable within ± 0.10)	4.0 – 12.0		1.0-11.0	1.0-7.0	2.0-11.0	2.0-11.0
Conductivity range of sample	Up to 4% NaCl	No Limit					
Response time	30 seconds	2 minutes	2 minutes	30 seconds	3 minutes	50 seconds	5-10 minutes
Conditioning time	60 minutes	120 minutes	120 minutes	60 minutes	60 minutes	60 minutes	180 minutes

**W A L C H E M**

IWAKI America Inc.

# Specifications

Calibration	Weekly
Change electrolyte	3-6 months
Change membrane cap	1 year

## Electrical

Power requirements	±5 VDC, 5 mA maximum
Signal	0 to -2000 mVDC
Maximum cable length	100 feet (30.5 meters)
Extension cable	2 twisted pair, 22 AWG, shielded, 35 pF/ft (Walchem 100084 or Belden 8723)

## Mechanical

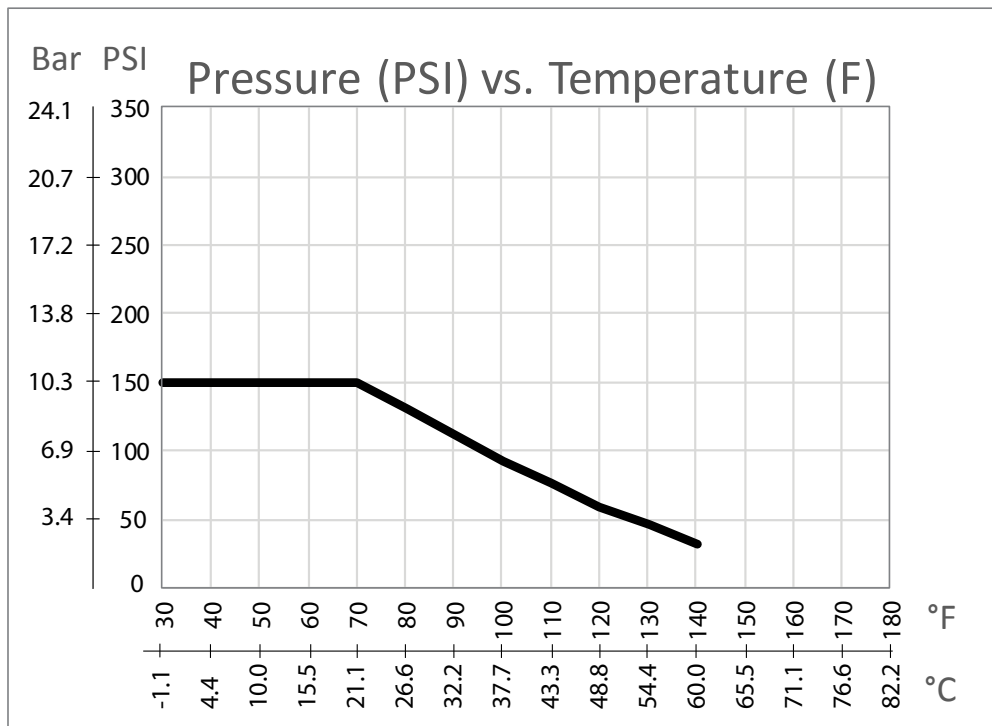
Operating Pressure	Sensor	Optional Flow Switch
	0-1 atmosphere (0-14.7 PSI)	0-10.3 atmosphere (0-150 PSI) (see graph below)

Storage

Sensor: Frost-protected, dry and without electrolyte no limit at >5 to <40°C (>41 to <104 °F)  
 Membrane cap: Used membrane caps can not be stored!  
 Electrolyte: in original bottle protected from sunlight min. 1 year at >5 to <25°C (>41 to <77°F)

Flow cell inlet	¼" NPTF
Flow cell outlet	¾" NPTF

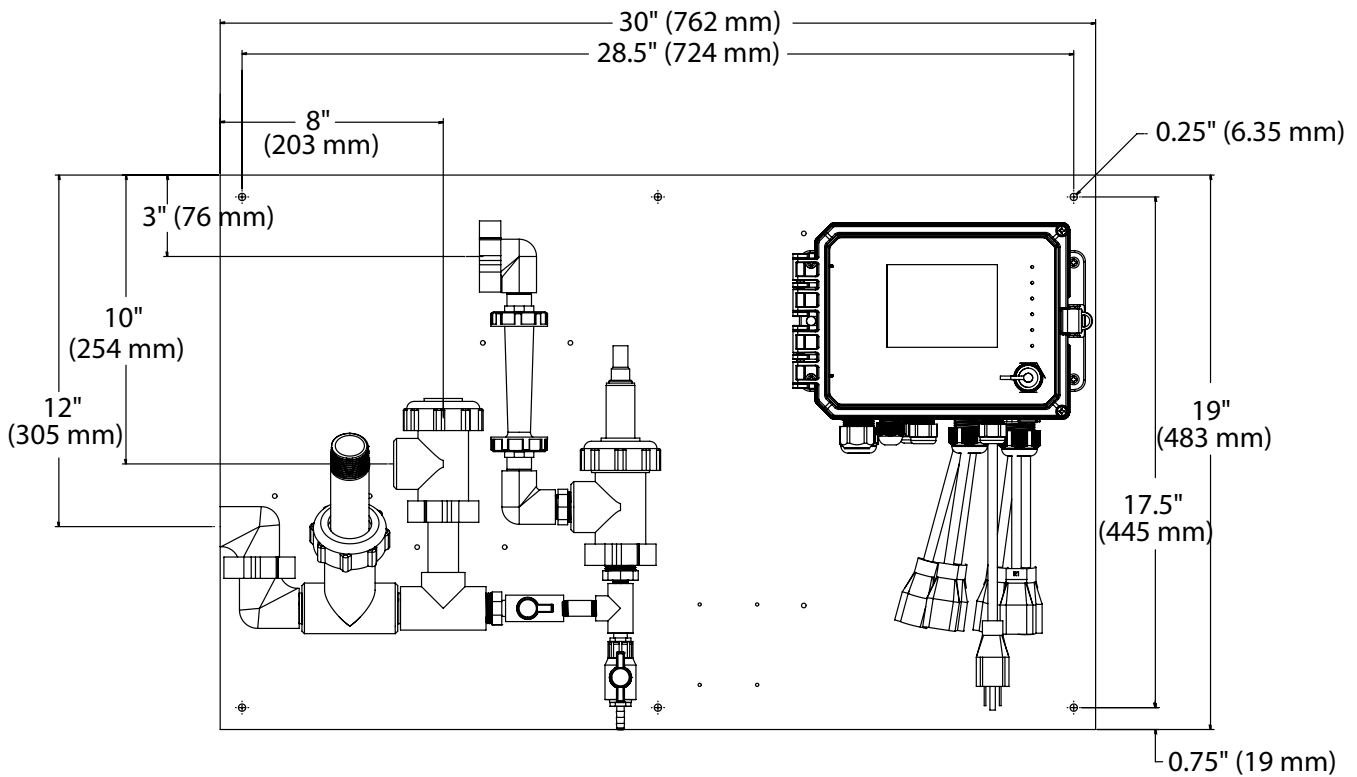
Operating Pressure (Optional Flow Switch)



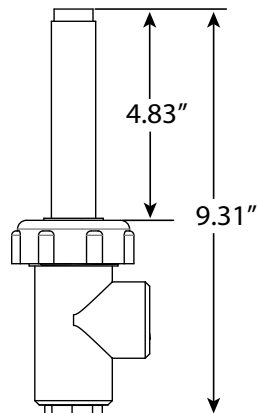
# Specifications

	Operating Temperature	Wetted Materials of construction
Free Chlorine/Bromine	0 to 45°C (32 to 113°F)	PVC, Polycarbonate, Silicone rubber
Free Chlorine/Bromine (Extended pH Range)	0 to 45°C (32 to 113°F)	PVC, Polycarbonate, Silicone rubber, Stainless Steel, PEEK
Total Chlorine	0 to 45°C (32 to 113°F)	
Chlorine Dioxide	0 to 50°C (32 to 122°F)	
Peracetic Acid	0 to 45°C (32 to 113°F)	
Ozone	0 to 50°C (32 to 122°F)	
Hydrogen Peroxide	0 to 45°C (32 to 113°F)	
Flow cell body		Isoplast
O-Ring		FKM

## Dimensions



Sensor with Flow Cell  
Dimensions



## For WDIS400 and WebMaster Series Controllers

### Complete disinfection sensor, 20 ft. cable and flow cell assemblies (used without flow switch manifolds)

WFCB-20	Free Chlorine/Bromine Sensor, 20 ppm
WFCBL-20	Free Chlorine/Bromine Sensor, 2 ppm
WFCBH-20	Free Chlorine/Bromine Sensor, 200 ppm
WFCXB-20	Free Chlorine/Bromine Sensor, ext. pH range, 20 ppm
WTCB-20	Total Chlorine Sensor, 20 ppm
WCDB-20	Chlorine Dioxide Sensor, 20 ppm
WCDBL-20	Chlorine Dioxide Sensor, 2 ppm
WCDBH-20	Chlorine Dioxide Sensor, 200 ppm
WOZB-20	Ozone Sensor, 20 ppm
WPAB-20	Peracetic Acid Sensor, 2000 ppm
WPABL-20	Peracetic Acid Sensor, 200 ppm
WPABH-20	Peracetic Acid Sensor, 20,000 ppm
WPAPKL-20	Peracetic Acid Sensor, PEEK, 2000 ppm (Acrylic Flow Cell)
WPAPK-20	Peracetic Acid Sensor, PEEK, 20,000 ppm (Acrylic Flow Cell)
WHPC-20	Hydrogen Peroxide Sensor, 2000 ppm
WHPCL-20	Hydrogen Peroxide Sensor, 200 ppm
WHPCH-20	Hydrogen Peroxide Sensor, 20,000 ppm

### Flow switch manifolds

191349	Disinfection manifold, loose
191348	Disinfection manifold, on polypro panel

## For W100 and W600 Series Controllers

W600-DS-PN	Single DIS manifold on panel, 3 ft cable, W100/600
W600-DS-PX	DIS Manifold plus pH/ORP/cooling tower cond tee on panel, 3 ft cable, W600
W600-DS-FN	Single DIS flow cell/cable, no sensor, 20 ft cable W100/600
W600-DS-FF	Two DIS flow cell/cable, no sensor, 20 ft cable, W600
104010	Free Chlorine/Bromine Sensor, 0 PPM, no cable, W100/600
191530	Free Chlorine/Bromine Sensor, 2 PPM, no cable, W100/600
191300	Free Chlorine/Bromine Sensor, 20 PPM, no cable, W100/600
191441	Free Chlorine/Bromine Sensor, 200 PPM, no cable, W100/600
191445	Free Chlorine/Bromine Sensor, Ext. pH Range, 20 ppm, no cable, W100/600
191492	Total Chlorine Sensor, 20 ppm, no cable, W100/600
191532	Chlorine Dioxide Sensor, 2 PPM, no cable, W100/600
191280	Chlorine Dioxide Sensor, 20 PPM, no cable, W100/600
191534	Chlorine Dioxide Sensor, 200 PPM, no cable, W100/600
191320	Ozone Sensor, 20 PPM, no cable, W100/600
191746	Ozone Sensor, 2 PPM, no cable, W100/600
191490	Peracetic Acid Sensor, 200 PPM, no cable, W100/600
191338	Peracetic Acid Sensor, 2000 PPM, no cable, W100/600
191512	Peracetic Acid Sensor, 20,000 PPM, no cable, W100/600
103741	Peracetic Acid Sensor, PEEK, 20,000 PPM, no cable, W100/600
103781	Peracetic Acid Sensor, PEEK, 2000 PPM, no cable, W100/600
103985	Hydrogen Peroxide Sensor, 200 ppm, no cable (WP10), W100/600
103987	Hydrogen Peroxide Sensor, 2000 ppm, no cable (WP10), W100/600
103989	Hydrogen Peroxide Sensor, 20,000 ppm, no cable (WP10), W100/600

### Disinfection sensor and 20 ft. cable assemblies (purchased in conjunction with flow switch manifolds)

191361	Free Chlorine/Bromine, 20 ppm
191531	Free Chlorine/Bromine, 2 ppm
191442	Free Chlorine/Bromine, 200 ppm
191446	Free Chlorine/Bromine, ext. pH range, 20 ppm
191499	Total Chlorine, 20 ppm
191362	Chlorine Dioxide, 20 ppm
191533	Chlorine Dioxide, 2 ppm
191535	Chlorine Dioxide, 200 ppm
191363	Ozone, 20 ppm
191350	Peracetic Acid, 2,000 ppm
191500	Peracetic Acid, 200 ppm
191513	Peracetic Acid, 20,000 ppm
103985	Hydrogen Peroxide Sensor, 200 ppm (WP10)
103987	Hydrogen Peroxide Sensor, 2,000 ppm (WP10)
103989	Hydrogen Peroxide Sensor, 20,000 ppm (WP10)