

# pH/ORP Sensors

## WEL Series Electrodes

Walchem's WEL Series electrodes are cost-effective differential pH and ORP electrodes for industrial applications

### SPECIFICATIONS

HOUSING CODE	1, 7, A	2, 8, B	3	4	C, E	D, F		
Input Range	± 1999 mVDC				±500 mVDC	-500 to 1000 mVDC		
Output Range	± 1999 mVDC				Isolated 4 to 20 mA DC			
Input Impedance	1 x 10 <sup>13</sup> ohms							
Output Impedance	100 ohms		N/A					
Power	± 5 VDC (± 10%) 3 mA maximum		N/A		12 to 30 VDC, 21 mA maximum			
Temperature Range	32 to 158 °F (0 to 70 °C)		32 to 212 °F (0 to 100 °C)		32 to 160 °F (0 to 70 °C)			
Pressure	0 to 100 psi (0 to 6.9 Bar) See graph for Pressure versus Temperature							
Maximum Cable Length	1000 feet (305 meter)		20 feet (6 meters)		4000 feet (1219m) at 24 VDC power, 24 AWG cable			

CARTRIDGE CODE	PHH	PHB	PHF	PHLI	MVF	MVR
Range	0 to 14 pH Standard Units				± 2000 mV	
Response	90% in less than 5 seconds					
Temperature Range	32 to 122 °F (0 to 50 °C)	32 to 212 °F (0 to 100 °C)	50 to 212 °F (10 to 100 °C)			
NOTE: Electrode life is drastically reduced when used above 122 F (50 C)						
Maximum Flow Velocity	10 ft/sec (3m/sec)					

### WETTED MATERIALS OF CONSTRUCTION

Cartridge and Housing	CPVC
Cartridge Reference Junction	HDPE
O-Rings	FKM
Housing Ground Rod	Titanium
Cartridge Electrode	Glass (pH) or Platinum (ORP)
Inline nut, tee and adapters	Glass Filled Reinforced Polypropylene

### HOUSING

- 1 = Housing with preamplifier and Pt 1000 ATC, 20 ft. cable
- 2 = Housing with preamplifier, 20 ft. cable
- 3 = Housing with Pt 1000 ATC, 20 ft. coaxial cable with BNC Connector
- 4 = Housing, 20 ft. coaxial cable with BNC Connector
- 7 = Housing with preamplifier for W100/W600/W900 Pt1000, 20 ft cable with tinned leads
- 8 = Housing with preamplifier for W100/W600/W900 20 ft cable with tinned leads
- A = Housing with preamplifier for W100/600/900, Pt 1000, 3 ft. cable with tinned leads
- B = Housing with preamplifier for W100/600/900, 3 ft. cable with tinned leads
- C = Housing with pH range 4-20 mA transmitter, internal Pt 1000, 20 ft. 2-conductor cable with tinned leads
- D = Housing with ORP range 4-20 mA transmitter, 20 ft. 2-conductor cable with tinned leads
- E = Housing with pH range 4-20 mA transmitter, internal Pt 1000, 3 ft. 2-conductor cable with tinned leads
- F = Housing with ORP range 4-20 mA transmitter, 3 ft. 2-conductor cable with tinned leads

**W A L C H E M**

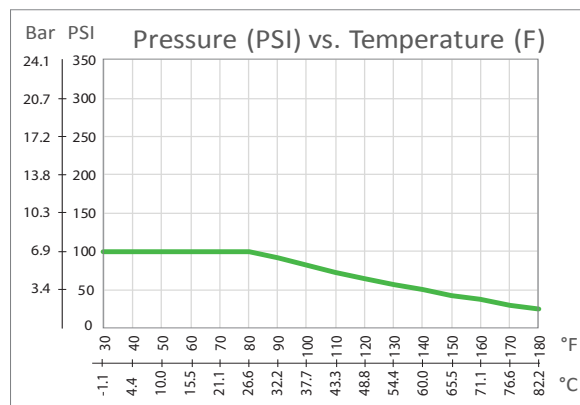
WAKI America Inc.



The WEL Series are modular in design with a rugged CPVC housing that contains the electronics. pH and ORP cartridges can easily be connected or replaced in minutes without tools. The cartridges feature a unique threaded interlock connection and a double o-ring seal, ensuring a watertight fit and secure seating at all times.

The optional differential preamplifier or 4 to 20 mA transmitter, and temperature compensation element are in the housing, and are not thrown away when the electrode needs replacement. The electrode is powered by the controller it is connected to, so the signal is always preamplified and there are no batteries to go dead.

A titanium solution ground rod integral to the housing enables the differential measuring technique. This results in prolonged electrode life and reliable measurement, resistance to stray voltages and currents or ground loop problems.



### ORDER INFORMATION

WEL ☐ — ☐ ☐  
cartridge housing mounting style

### CARTRIDGE

- PHF = Flat surface pH
- PHB = Bulb pH
- PHH = HF resistant pH
- MVF = Flat surface ORP
- MVR = Rod style ORP
- PHLI = Flat pH, if sample is between 10 and 100μS/cm

### MOUNTING STYLE

- 1 = Submersion Mounting, 1" NPTM thread on housing
- 2 = In-line mounting (3/4" NPTF tee)
- 3 = Metric in-line mounting (1 1/4" BSPT)
- 4 = In-line mounting (1 1/4" NPT male adapter)