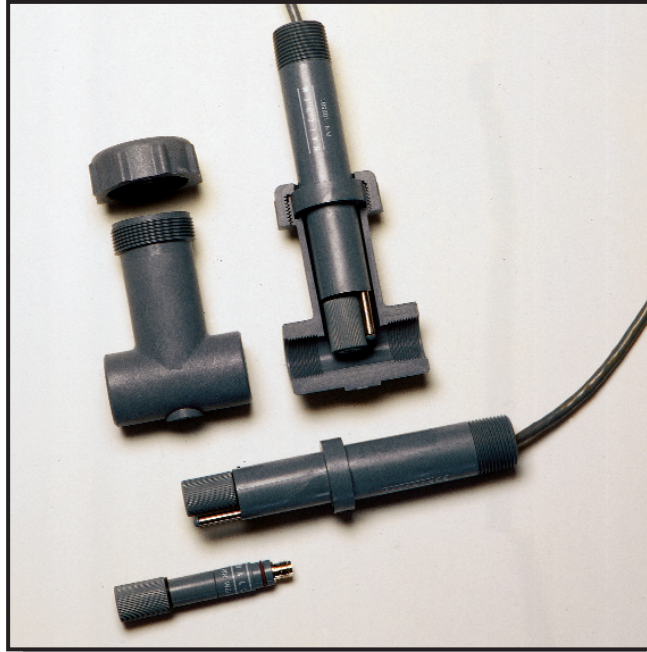


WEL SERIES **pH/ORP ELECTRODES**



WEL Series pH / ORP Electrodes

Walchem's WEL Series electrodes are cost-effective differential pH and ORP electrodes for industrial applications. They are modular in design with a rugged CPVC housing which 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 and temperature compensation element are in the housing, placing them at the optimal location for best response.

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.

The electrode design enables a universal mounting style - a single housing and cartridge can be mounted in-line or submersed. This reduces inventory of parts and spares needed.

Part of the

W A L C H E M

Family of Products

WEL Series pH & ORP Electrodes



The differential preamplifier and optional automatic temperature compensation (ATC) element are built into the housing resulting in signal amplification at the optimal location - right next to the sensor. Temperature response is *fast*, increasing accuracy of measurement.

The titanium ground rod makes the differential measurement technique possible and it is resistant to aggressive chemistries.

The differential technology provides a longer electrode life, a signal that is more immune to electronic noise, high voltage potential in solution and ground loops.

The preamp electronics are powered by the controller it is attached to: the signal is always preamplified, distance from the controller is not critical (less than 1000 ft is recommended) and there is no concern about a battery going dead.

The electrodes are available with either tinned leads or BNC connector, for easy, flexible installation. The electrode cartridge can be replaced without also having to replace the preamp or ATC element. Different styles are available to best fit your need: flat surface design resists fouling; low cost bulb version for less demanding applications; a fluoride-resistant glass version for aggressive solutions.

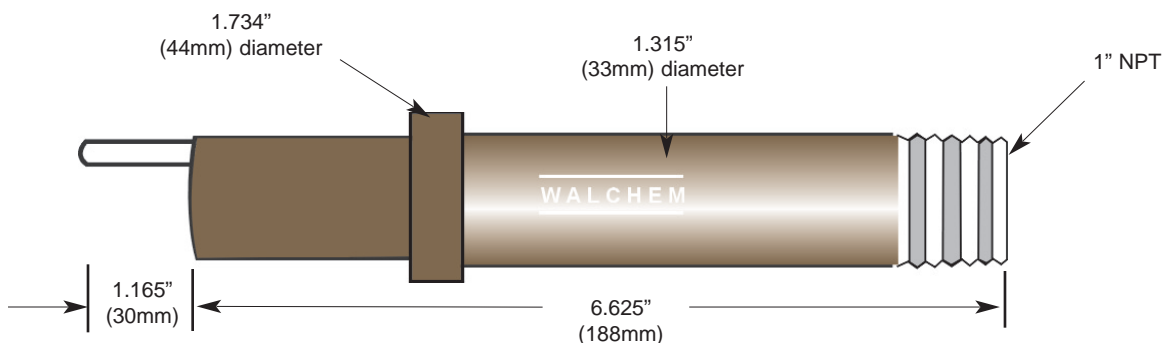
The cartridge has a unique threaded interlock connection which seats the electrode securely in the housing. Knurled machining of the casing at the surface end provides for a sure grip when removing or inserting a cartridge. The design of the electrode enables the unit to be used in immersion or in-line applications, reducing required inventory.

FEATURES

- Differential preamp
- Universal mounting
- Easily replaceable electrode cartridges
- Electronics are built into the housing
- Optional ATC
- Easy to install
- Cartridge Styles:
 - Flat Surface
 - Bulb
 - HF Resistant
- Resistant to electronic noise, ground loops
- CE Performance & Safety Approvals

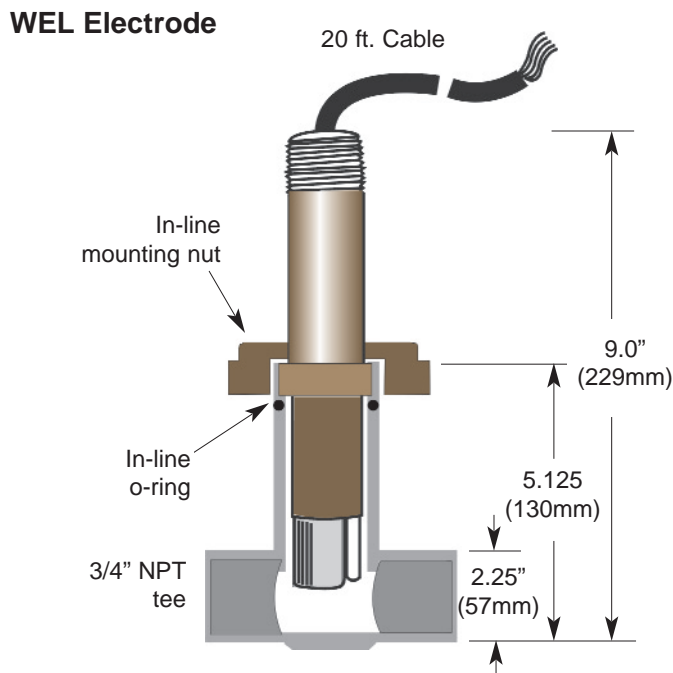
Dimensions

HOUSING (all models)

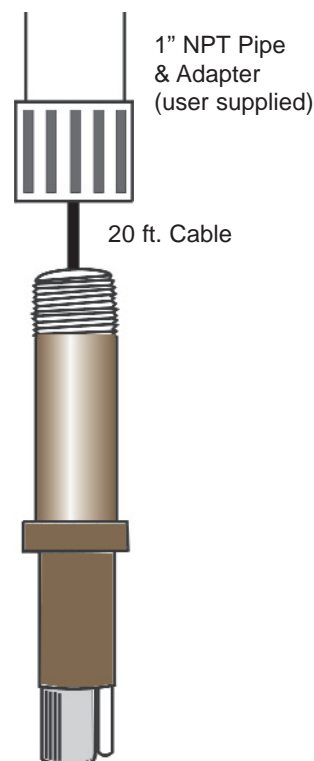


Typical Mounting

In-Line Mounting



Submersion Mounting



pH/ORP Electrode

Range	0 to 14 pH (0 to 12 without sodium ion error) ± 1999 mV (ORP)	
Response	95% in less than 5 seconds	
Impedance		
Cartridge	Not to exceed 1000 M Ω over temperature range	
Housing	100 ohms, preamplified versions Not to exceed 1000 M Ω over temperature range, non-preamplified versions	
Temperature Range		
Housings with preamplifier	32 to 158°F (0 to 70°C)	
Housings without preamplifier	32 to 212°F (0 to 100°C)	
PHF, MVF cartridges	50 to 212°F (10 to 100°C)	
PHB cartridges	32 to 212°F (0 to 100°C)	
PHH cartridges	32 to 122°F (0 to 50°C)	
Operating Pressure	100 PSIG	
Wetted Materials of Construction	Electrode body	CPVC
	Electrode reference	HDPE
	O-rings	FKM
	Electrode:	glass (pH) or platinum (ORP)

Housing/Preamplifier

Power	± 5Vdc; 5 mA maximum	
Submersion Connection	1" NPT pipe (user supplied)	
In-Line Connection	3/4" NPTF threaded tee In-line mounting nut In-line mounting o-ring	
In-line mounting kit (optional)	P/N 190863 (US)	
Wetted Materials of Construction	Housing body	CPVC
	Ground rod	Titanium
	In-line tee	GFRPP
	O-rings	FKM

Safety Performance

The WEL Series electrodes are in compliance with CE safety and performance standards.

Ordering Information

WEL – –
 (Cartridge) (Housing) (Mounting)

Cartridge

PHF = Flat surface pH
 PHB = Bulb pH
 PHH = HF resistant pH
 MVF = Flat surface ORP

Housing

1 = Housing with preamplifier and PT1000 ATC, 20' cable with tinned leads
 2 = Housing with preamplifier, 20' cable with tinned leads
 3 = Housing with PT1000 ATC, 20' coaxial cable with BNC connector
 4 = Housing, 20' coaxial cable with BNC connector
 5 = Housing with preamplifier and PT100 ATC, 20' cable with tinned leads
 6 = Housing with PT100 ATC, 20' coaxial cable with BNC connector

Mounting Style

1 = Submersion mounting
 2 = In-line mounting (3/4" NPTF tee)

Other Walchem Products

pH / ORP PRODUCTS

WPH Series pH/ORP Controllers



- pH or mV (ORP) measurement
- Four independent control relays
- On/Off or pulse proportional control
- Microprocessor based - easy menus

W-130/230 Series Transmitter/Monitors



- Operation in pH units or mV
- Microprocessor based, no potentiometers
- Isolated 4-20 mA powered output
- Dual relay outputs for alarms or control

WDP Series Dual Input pH/ORP Controllers



- Multiple relay configurations
- Single or dual flow / level switch option
- Output limit timers for each relay
- On-line self diagnostics

SPECIALTY & ACCESSORY PRODUCTS

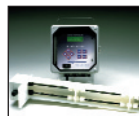
WCT, WBL, WCM Series Conductivity Controllers



- Cooling tower blowdown with feed & timers
- Boiler blowdown with chem feed, sampling
- Condensate monitor operates diverter valve
- All are programmable, have self diagnostics

WNI Series Electrodeless Nickel Controllers

WCU Series Electrodeless Copper/ Microetch Controllers



- Reads actual concentration of metal
- Four separate control relays
- Unique, fiber optic sensing method

Metering Pumps, Tanks & Accessories



- Full range of electronic metering pumps
- Thermoplastic tanks, standard or custom
- Flowmeters, flowswitches, sensors

Walchem Corporation

Walchem's control and accessory products are easy to install and work "right-out-of-the-box".

Walchem is an industry leader in the integration of sensors, pumps, controls.

If you are interested in learning about our family of products, please call the best customer service people in the business at **508-429-1110** or fax **508-429-7433**. Our website address is **www.walchem.com**.

W A L C H E M