Overview

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, 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.

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.



WEL Series

pH/ORP Electrodes

Summary of Benefits

- Differential preamp
- Universal mounting
- Easily replaceable electrode cartridges
- Electronics are not discarded with the electrode
- Optional ATC
- Easy to install
- Cartridge Styles:
  - *Flat Surface*
  - *Bulb / Rod*
  - *HF Resistant*
- Resistant to electronic noise, ground loops
- CE Performance & Safety Certifications

WALCHEM



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.

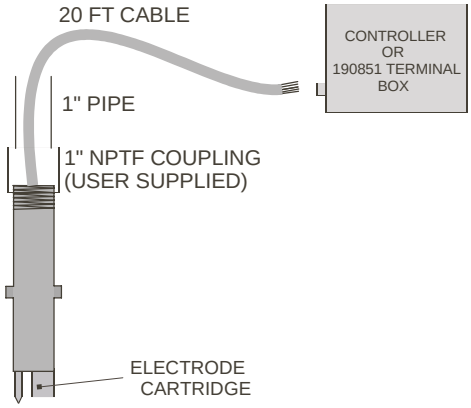
The electrodes are available with either tinned leads or BNC connector, for easy, flexible installation. The electrode cartridge can be replaced without also having to replace the preamp or ATC element. Different styles are available to best fit your need: flat surface design resists fouling; low cost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



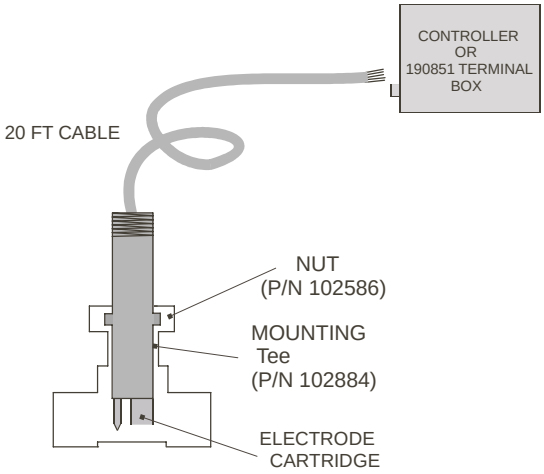
The cartridge has a unique threaded interlock connection which seats the electrode securely in the housing. Knurled machining of the casing at the surface end provides for a sure grip when removing or inserting a cartridge. The design of the electrode enables the unit to be used in immersion or in-line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



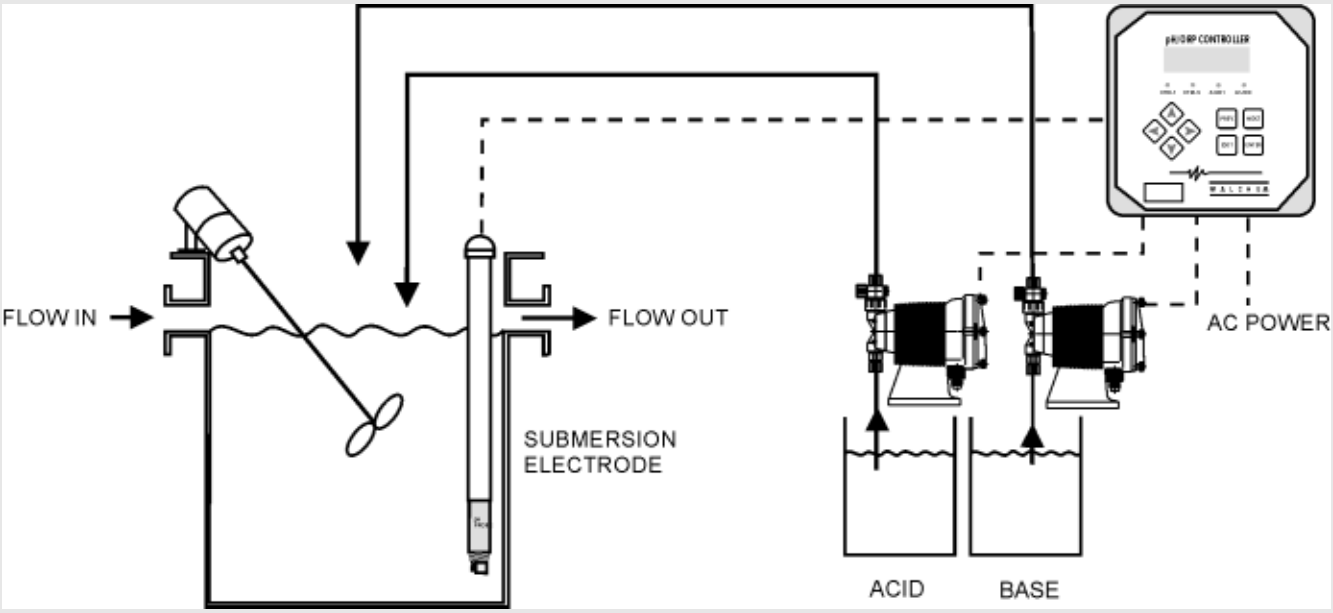
Installation with Preamplified Housing
SUBMERSION



Installation with Preamplified Housing
IN-LINE



Specifications



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 158ºF (0 to 70ºC)
Housings without preamplifier	32 to 212ºF (0 to 100ºC)
PHF, MVF, MVR & PHLI	50 to 212ºF (10 to 100ºC)
PHB cartridges	32 to 212ºF (0 to 100ºC)
PHH cartridges	32 to 122ºF (0 to 50ºC)

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” NPTM
In-Line Connection	3/4” NPTF threaded tee In-line mounting nut In-line mounting o-ring

Wetted Materials of Construction	Housing body	CPVC
	Ground rod	Titanium
	In-line tee	GFRPP
	O-rings	FKM

AGENCY CERTIFICATIONS

The WEL Series electrodes are in compliance with CE EMC standards.

Ordering 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 <100 µS/cm

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)



WEBMASTER GENERAL INDUSTRIAL CONTROLLER



WEBMASTER COOLING TOWER AND BOILER CONTROLLER



METERING PUMPS AND ACCESSORIES



WEBALERT REMOTE MONITORING & DATALOGGING

Walchem designs and manufactures an integrated line of analytical control, sensing and feed devices.

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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