SERFILCO® SERIES 'WPH' | pH/ORP CONTROLLERS

2900 MacArthur Blvd. Northbrook, IL. USA 60062 **www.serfilco.com** (800) 323 - 5431

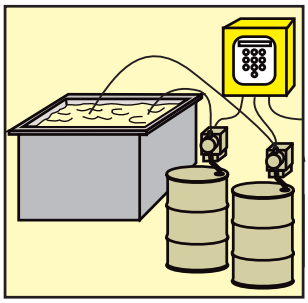
BULLETIN
A_312_D
JAN 2012

Used for the addition of acids and bases to plating solutions; neutralization of waste streams; cooling tower and boiler feed preparation; process control monitoring and recording.

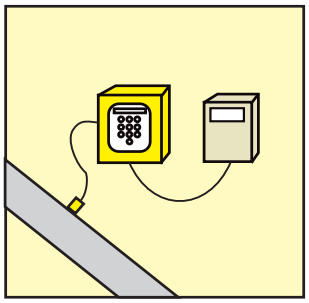
- **Versatility for a Broad Range of Applications**
  Select from pH or ORP measurements and from five output options. Use "In-Range" to control a solenoid valve to dump a batch treatment tank when measurement value is within limits, or program for "Out-of-Range Alarm" in waste treatment applications when the measurement value is too high or low.
- **Ideal for Harsh Environments**
  The NEMA 4X enclosure, combined with W-EL electrodes, provide a waterproof system with no BNC connectors exposed to wet or corrosive environments.
- **Built-in Safety Features**
  Programmable output limit timers prevent run-away chemical addition. Digital Interlock Input may be used from a flow switch or level input to prevent chemical addition based on a stagnant sample, or control of an empty batch tank.
- **Simple, Integrated Data Collection**
  Download stored data from the controller to a USB stick with the press of a button. Use the data to simply and easily validate system performance, document compliance, and reduce liability. The data and event logs show pH/ORP and temperature values, as well as accumulated chemical feed and relay activation times.

'WPH' Series pH/ORP on-line process controllers will improve your treatment performance. Microprocessor-based, with a very easy-to-use menu format, 'WPH' Series controllers measure in pH or mV accurately and reliably. A versatile output configuration allows you to program up to four outputs in a variety of ways – with just one controller.

'WPH' Series controllers are available with either on/off mechanical relay outputs or direct pulse proportional control for metering pumps. Installation is as easy as unpacking the unit, mounting it and plugging it in. We also offer other wiring options to fit your requirements.

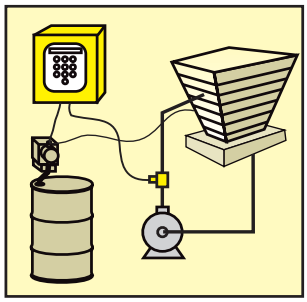


PROCESS CONTROL



WASTE STREAM MONITORING

WASTE NEUTRALIZATION/ RECYCLING



COOLING TOWER

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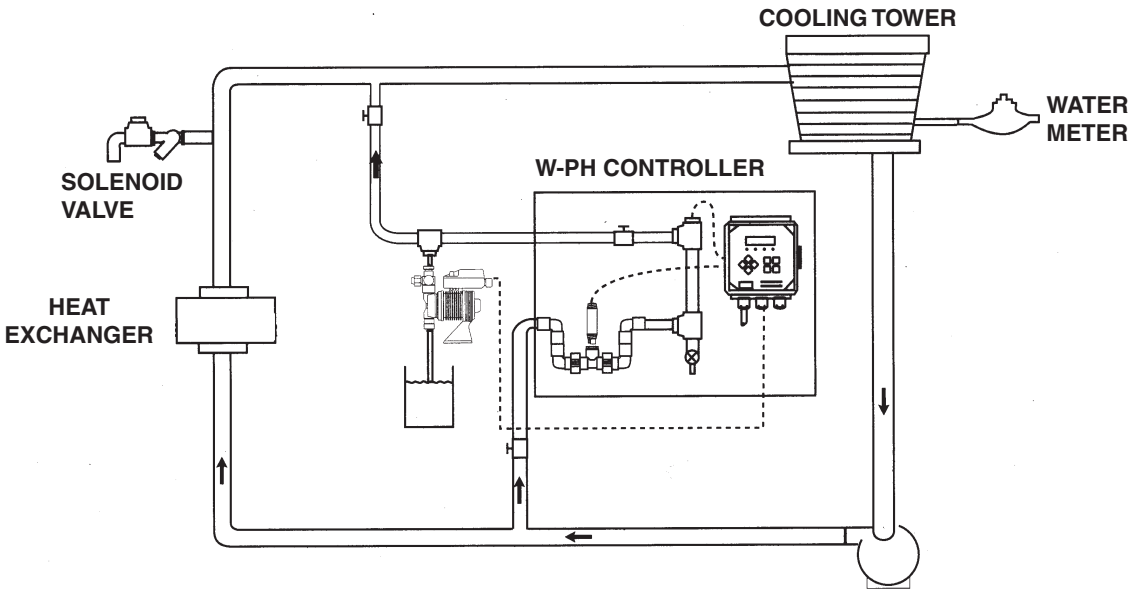
W-PH410 Series On/Off Control

Four control relays may be set as all high or all low or any combination. The control deadband is fully adjustable.

W-PH420 Series Pulse Proportional Control

Two pulse outputs that may be set independently, enhanced by an adjustable minimum and maximum pulse per minute setting, plus three dry-contact relays for control or alarm.

- **Microprocessor-based with intuitive menu format** - No potentiometers to adjust, all set points are known precisely, no repetition of adjustments is necessary.
- **pH or ORP measurement** is configurable via a software menu setting - Reduces inventory requirements.
- **Versatile relay configuration** - Control outputs can be set as high or low set points via keypad. Auxiliary outputs can be set as:
  High alarm
  Low alarm
  In-range output
  Out-of-range alarm
  Probe wash
- **Probe wash feature** - For applications that require frequent electrode cleaning, automatic probe wash stretches out reliable measurement life between maintenance interruptions.
- **Auto buffer recognition** - software selectable for U.S. or European calibration standards.
- **Optional 4-20 mA output** - internally powered and fully isolated, for sending clear signal to a chart recorder, PLC or other control device.
- **At-a-glance status display** - Look at any set point without interrupting control or needing the access code. Able to view:
  Analog graph relative to set points
  pH-ORP values
  Status of alarms, outputs
- **Calibration reminder** - Calibration menu displays the date of the last sensor calibration and allows the user to set the number of days between calibrations. The controller will prompt the user to perform a calibration at the specified time.
- **Self diagnostics** - Software and electronics are constantly monitored, without having to take the controller off line. Any operator-action-needed messages are displayed in plain English. A fifth relay is activated by any diagnostic failures.
- **Self test** - selected via menu, a simulated pH and temperature signal is input to the controller. This on-line diagnostic allows sensor or controller problems to be deciphered quickly.
- **USB feature -** Easily create charts and graphs that demonstrate system performance and identify system upsets



W-PH Controller with In-Line Electrode

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AGENCY CERTIFICATIONS

UL	ANSI/UL 61010-1:2004, 2nd Edition*
CAN/CSA	C22,2 No.61010-1:2004 2nd Edition*
CE Safety	EN 61010-1 2nd Edition (2001)*
CE EMC	EN 61326 :1998 Annex A*

Note: For EN61000-4-6,-3 the controller met performance criteria B.
*Class A equipment: Equipment suitable for use in establishments other than domestic, and those directly connected to a low voltage (100-240 VAC) power supply network which supplies buildings used for domestic purposes.

MEASUREMENT PERFORMANCE

Range	-2 to 16 pH ± 1500 mV (ORP)
Resolution	.0015 pH units (.01 pH displayed) 92 µV (1 mV displayed) (ORP)
Accuracy (Calibrated)	± .01 pH ± 1 mV (ORP)
Temperature Range	32 to 212°F (0 to 100°C)
Temperature Resolution	± .09°F (.05°C)
Temperature Accuracy	± .9°F (± .5°C)

INPUTS

Power	100-240 VAC, 50/60 Hz, 8A
Preamp Power	± 5 VDC, 5 mA
Signal pH/ORP	± 1500 mV
Temperature Comp. (opt.)	Pt 100 or Pt 1000
Interlock (opt.)	solated dry contact closure required (i.e. flow, level, etc.)

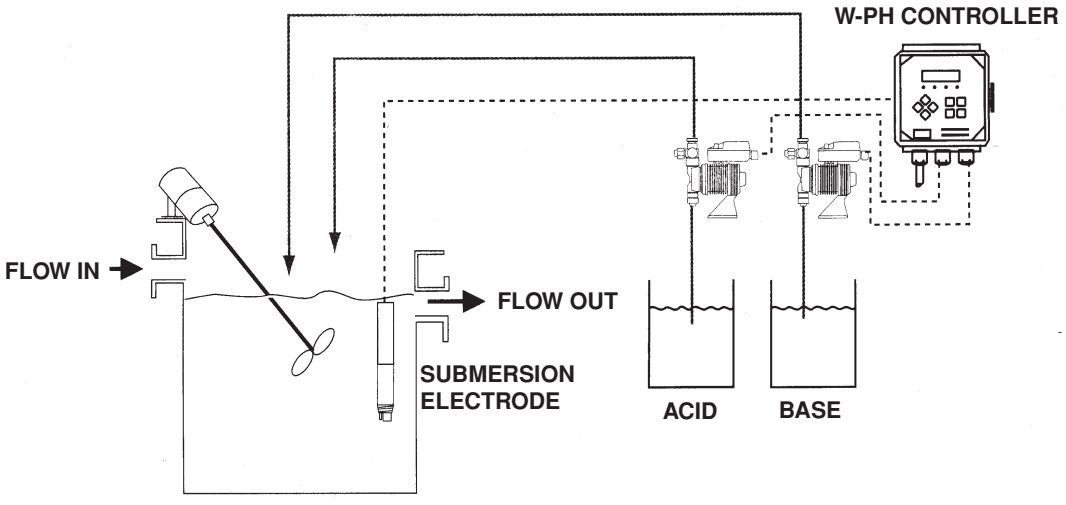
MECHANICAL

Controller	
Enclosure	Polycarbonate
NEMA Rating	NEMA 4X (IP 65)
Dimensions	7.25" x 7.5" x 5.0"
Display	2 x 16 character backlit liquid crystal
Ambient Temperature	32 to 122°F (0 to 50°C)
Shipping Weight	7 lbs (3kg) (approximately)

OUTPUTS

Powered Relays	Internally powered relays switching line voltage 6A (resistive), 1/8 HP All relays are fused together as one group, total current for this group must not exceed 6A
Pulse Outputs	Opto-isolated, Solid state relay 150 mA, 40 VDC Max. VLOWMAX = .13V @ 18 mA
Dry contact relays	6 A (resistive), 1/8 HP Dry contact relays are not fuse protected

	CTRL1	CTRL2	CTRL3	CTRL4	ALARM
W-PH410	Powered		Dry		
W-PH420	Pulse		Dry		



W-PH Controller with Submersion Electrode

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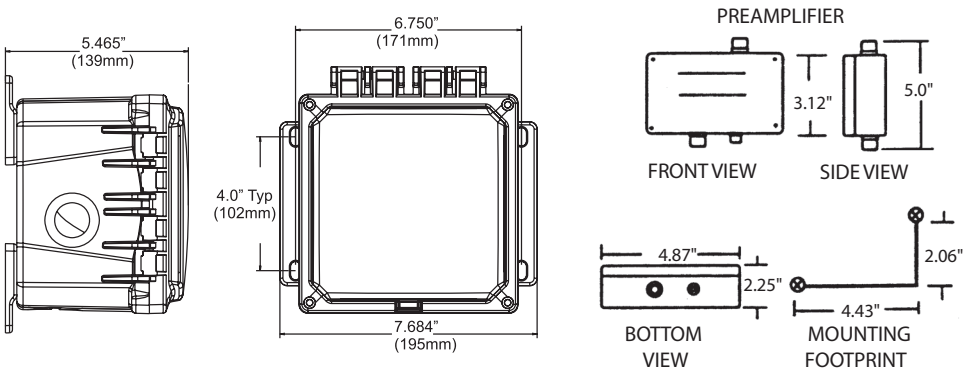
DIMENSIONS



ORDERING INFORMATION

W-PH4 ☐ 0 – ☐ ☐ ☐ **U**

(Control) (Voltage) (Outputs) (Option) (USB)

CONTROL OUTPUTS
1 = Two powered, three dry contact relays
2 = Two proportional relays, three dry contact relays

VOLTAGE
1 = 120 VAC, prewired, 6" pigtails (WPH410) or 10 ft. cables (WPH420 only)
3 = 120 VAC, prewired, 10 ft. cables with connectors (EW pumps)
5 = Hardwired, cable glands

OUTPUT
N = NONE
4 = 4-20 mA
2 = Two 4-20 mA

OPTIONS
N = NONE (requires electrode with pre-amp)
1 = Prewired preamp with 10 ft. cable (electrode not included. Electrode should have BNC connector)

USB FEATURES
U = Integrated datalogging, event /reset logging and configuration file import/export

ELECTRODE ASSEMBLY without PREAMP

Cartridge type, gel-filled double junction, CPVC with 20 ft. cable and BNC connections. Wetted materials of construction: CPVC, HDPE, Viton®, glass (pH) and platinum for (ORP)			PRICE CODE NO.
pH ORP pH	Submersion, 1" NPT (User supplies pipe and coupling)	N-TC[1] N-TC[1] A-TC[2]	W-ELPHF41 W-ELMVF41 W-ELPHF31
pH ORP pH	In-line, 1¼" NPT (User supplies pipeline tee)	N-TC[1] N-TC[1] A-TC[2]	W-ELPHF42 W-ELMVF42 W-ELPHF32

ELECTRODE ASSEMBLY with PREAMP

Cartridge type, gel-filled double junction, CPVC with 20 ft. cable and finned leads. Wetted materials of construction: CPVC, HDPE, Viton®, glass (pH) and platinum for (ORP)			PRICE CODE NO.
pH ORP pH	Submersion, 1" NPT (User supplies pipe and coupling)	N-TC[1] N-TC[1] A-TC[2]	W-ELPHF21 W-ELMVF21 W-ELPHF11
pH ORP pH	In-line, 1¼" NPT (User supplies pipeline tee)	N-TC[1] N-TC[1] A-TC[2]	W-ELPHF22 W-ELMVF22 W-ELPHF12

[1] Non-temperature compensated.
[2] Automatic temperature compensated.

REPLACEMENT ELECTRODES

DESCRIPTION	PRICE CODE NUMBER
pH electrode, flat surface ORP electrode, flat surface	W-ELPHFNN W-ELMVFNN

CABLE ASSEMBLY

DESCRIPTION	PRICE CODE NUMBER
4 pin pulse connection for AA7, B7 and C7 metering pumps	L-33796