

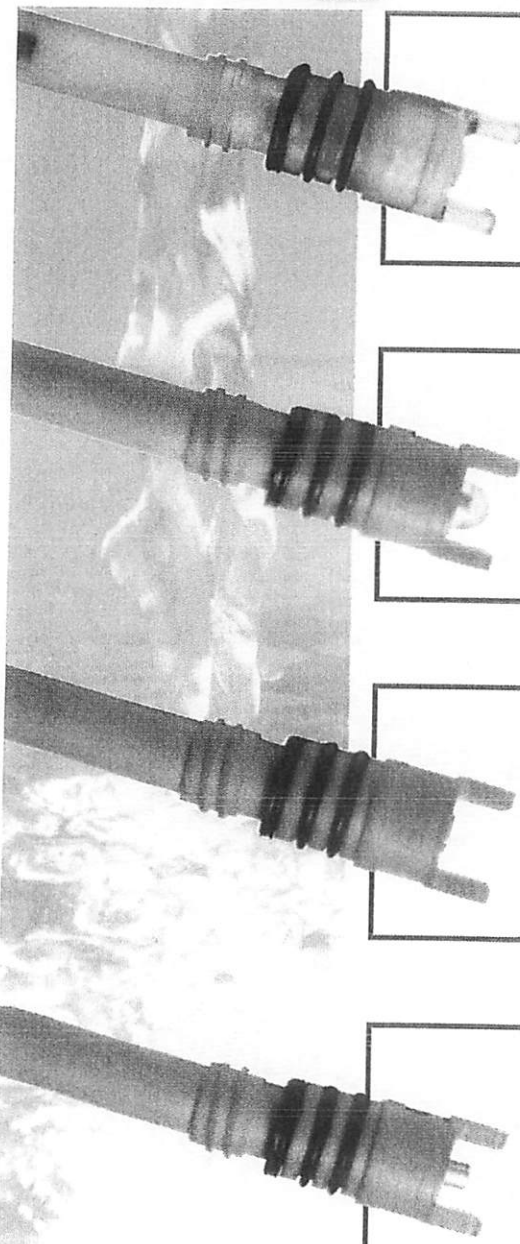
# pH and ORP Electrodes

The Model S80 Intelligent Sensors use replaceable electrode cartridges to provide application specific solutions for the most demanding pH measurements.

- Radel (PES) or PEEK construction
- Single tine, double tine or full crown style pH bulb protection.
- Spherical bulbs (best response), hemispherical bulbs (more durable) or a slightly radiused flat surface (easily cleaned)
- Platinum tip ORP electrodes.
- Double or Triple junction reference cells
- Porous Teflon® and ceramic junctions with various reference electrolytes.

One of these three widely used pH electrode cartridges will satisfy most installations, Consult our technical support staff for additional configurations.

## 6 Point Advantage



**2005145** – This **General Purpose Electrode** has a two tine Radel body, double junction reference and slightly radiused pH bulb. While suitable for higher temperatures it is optimized for fast and stable readings in ambient temperature applications. Neutralizations, waste effluent monitoring, rinse applications and potable water are just a few of the suggested applications.

**2005157** – This **High Temperature Electrode** has a two tine PEEK body, triple junction reference and hemispherical pH bulb. This electrode is designed for the process control or neutralization of most mineral acids and bases in applications up to 130°C. The triple junction design is resistant to sulfide ion poisoning making it ideal for use in petroleum refineries and metal processing plants.

**2005066** – This **Chemically Resistant Electrode** has a two tine PEEK body, double junction reference and slightly radiused pH bulb. The PEEK body is suitable for use in most aggressive solvents, oxidizing solutions and acids or bases. This electrode is optimized for a harsh chemical environment and is suitable for service up to 130°C. Chemical separations and solvent recovery in the CPI and pharmaceutical industries along with chlorine production and flotation in mining are suggested applications.

**2005167** – This **ORP (Oxidation Reduction Potential) Electrode** has a two tine PEEK body, double junction reference and a platinum tip. This general purpose sensor can be used for monitoring the oxidant level of cooling towers, swimming pools, aquariums or the de-chlorination of waste water. Metal finishing and mining also provide applications such as cyanide destruction and monitoring chrome plating baths.

Electro-Chemical Devices offers a complete line of liquid analytical sensors: pH, ORP, Specific Ion, Dissolved Oxygen, Conductivity & Resistivity. The technical advantage of the Model S80 Intelligent Sensors are the 6 points of design flexibility to configure a sensor that best fits your application.

## 6 Point Advantage

1

Intelligent sensor design with digital communication Calibration data is stored in the sensor allowing field installation of a pre-calibrated sensor. Detachable cable option simplifies the installation of pre-calibrated sensors.

2

Multiple individual measurement parameters in the same mechanical configuration- pH, ORP, Specific Ion, Dissolved Oxygen, Conductivity & Resistivity

3

Readily available application specific electrode cartridges. Many unique pH electrode design formulations and materials of construction which are field proven and selected for long life and accuracy.

4

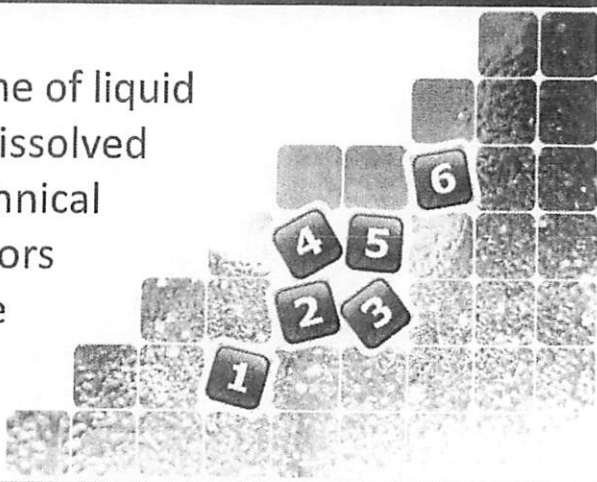
Long life replaceable electrode cartridges lower the over all operating cost.

5

Submersible and Retractable Sensors Various process fittings with adjustable insertion lengths - threaded fittings, sanitary fittings, flanges and valve retractable fittings.

6

Industrial housing materials for compatibility with process fluid. Stainless Steel, Titanium, Hastelloy C-22, Polypropylene or PVDF (Kynar™). Standard 10" or 17" lengths additional lengths available.



6

5

2

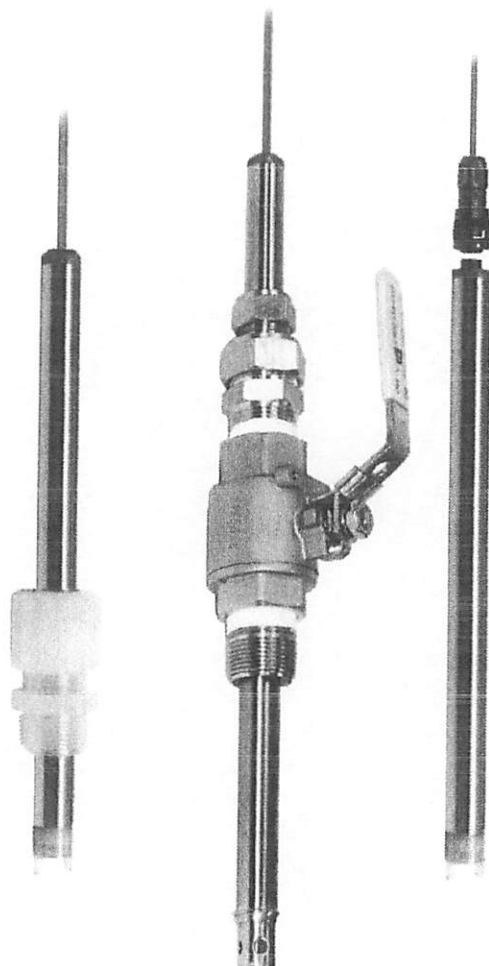
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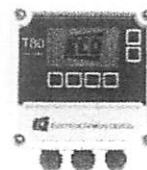
## Model S80 Intelligent Sensors



Measure pH, ORP, Specific Ion, Dissolved Oxygen,  
Turbidity, Conductivity or Resistivity with  
**Model T80 Universal Transmitter**



**ELECTRO-CHEMICAL DEVICES**



# Specifications

## Input Specification

Digital protocol, all ECD S80 sensors,  
Liquid, Gas, Process sensors (Optional  
analog to digital input board for mV  
sensors)

## Input Ranges

pH	-1.00 – 15.00 pH
ORP	-1500 – +1500 mV
pION	000.1 – 999.9, Auto Ranging: ppb ↔ ppm ↔ ppthousand
Dissolved Oxygen	000.1 – 999.9 Auto Ranging: ppb, ppm, % SAT, mg/L
Conductivity	0.055 µS – 2.00S Auto Ranging: µS, mS, S
Resistivity	0.001 – 20.00 meg-ohms
Turbidity	000.0 – 4000NTU Auto Ranging: NTU, FNU, mg/L, ppm, % Solids
Temperature	-30°C – 140°C

## Accuracy

pH	0.02 pH
ORP	± 1 mV
pION	Specific for ion type
Dissolved Oxygen	2% of calibrated range
Conductivity	2% of calibrated range
Resistivity	2% of calibrated range
Turbidity	4% of calibrated range
Temperature	± 0.3°C

## Enclosure

Polycarbonate, NEMA 4X, weatherproof, ½  
DIN, (L x W x D) 5.7" X 5.7" X 3.5" (14.4cm X  
14.4cm X 9.0cm)

## Environmental Conditions

Ambient Temperature	-20°C – 70°C
Storage Temperature	-30°C – 85°C
Relative Humidity	0 – 90% NC

## Display

128 x 64 pixels (2.75" x 1.5") LCD,  
Black/Grey background on loop powered  
instruments, Blue/White background LED

backlight on 100-240 VAC and 24 VDC  
powered instruments

## Input Power

Code -0	Loop powered, 24 VDC, 600 Ω maximum load (18-36VDC @ 35 mW minimum)
Code -1	24 VDC (18-36 VDC @ 250 mW minimum)
Code -2	100-240 VAC, 50/60 Hz, 4W

## Outputs

**4-20 mA output** (standard), Fault  
Condition: 3.5 mA, 22 mA or none  
**Modbus RTU** (standard)  
**HART®** (optional)  
**Alarm Relays** (Optional) Three (3) SPDT,  
form 1C, 250 VAC, 3 Amp resistive  
maximum relays, user configurable as  
Hi/Lo or Fault alarms

## Shipping

Size	8" x 8" x 5" (20.5 x 20.5 x 12.7 cm)
Weight	1.6 lbs. (0.75 kg)

T80 Mounting Dimensions

## Model T80-

## Transmitter Part Number Guide

Ch 1 Inputs	1	S80 Sensor, pH, ORP, pION, Conductivity, Resistivity and galvanic Dissolved Oxygen				
	2	TRITON® Optical DO and TRITON® ppb DO Sensors				
Ch 2 Inputs	6	TR6 Turbidity Sensors				
	0	No Input for Channel 2				
Power Supply	1	S80 Sensor, pH, ORP, pION, Conductivity, Resistivity and galvanic Dissolved Oxygen				
	2	TRITON® Optical DO and TRITON® ppb DO Sensors				
Alarm Relays	-0	Loop Powered Transmitter				
	-1	24 VDC Powered Transmitter				
Output	-2	100/240 VAC, 50/60Hz, 4W powered Transmitter				
	0	No Relays				
Mounting Hardware	1	(3) formC 250 V 3A relays				
	0	4-20 mA output and MODBUS RTU				
	1	HART®				
	2	2 x 4-20 mA with MODBUS RTU				
	-00	No Mounting Hardware				
	-01	Universal Mount				
	-02	Panel Mount				
	-03	Handrail Mount				
	-04	Sunshield Vertical Rail Mount				
	-05	Sunshield Horizontal Rail 1				
Model T80-	1	1	-0	0	1	-01

Specifications subject to change without notice.

Represented by:

## Electro-Chemical Devices

1681 Kettering  
Irvine, California, USA 92614  
Phone: +1-949-336-6060  
+1-800-729-1333  
Fax: +1-949-336-6064  
email: sales@ecdi.com  
web: www.ecdi.com





# Model T80 Universal Transmitter

Main Display screens; the Data Screen, the Millivolt Screen and the Graphical Display screen. The Data Screen displays the measurement type, the measured value with units, the % milliamp output of the 4-20 mA channel and the temperature. The mV Screen displays the measurement type, the raw millivolt signal from the sensor, the % milliamp output of the 4-20 mA channel and the temperature. The Graphical Screens display the measurement type, the measured value with units and a graphical representation of the % milliamp output. Three graphical styles are available; a Trend line, a Bar graph or a Gauge. The status of alarm relays, energized/de-energized is displayed on transmitters with relays.

## MENUS

Menu navigation is accomplished using membrane switch buttons. Soft keys display the function associated with each button. Pressing any of the buttons twice within 2 seconds activates the Model T80 soft key menus. The primary selections are the Calibration menu, Configuration menu, Info Screens and Simulate menu.

## CALIBRATION

Model S80 sensors come precalibrated from the factory. Field calibrations are easily performed with the Model T80. The Calibration menu includes the Auto Cal function, a two point calibration, the Standardize function, a single point calibration or the Manual Calibration, where previously determined Offset and Slope values are entered manually into the Model T80 transmitter.

## CONFIGURATION

The Configuration menus allow the Model T80 transmitter's Display and Output functions and the Model S80 sensor's characteristics to be configured or adjusted. Display screens include the Hold function, Graphical Display Style, Back Light and Contrast adjustments, Labels/Tags for naming the transmitter, Password Protection and a Factory Default reset. Output screens include setting the addresses for MODBUS or HART® outputs, setting the 4-20 mA Range and fault settings and configuring the Alarm Relays.

## INFO

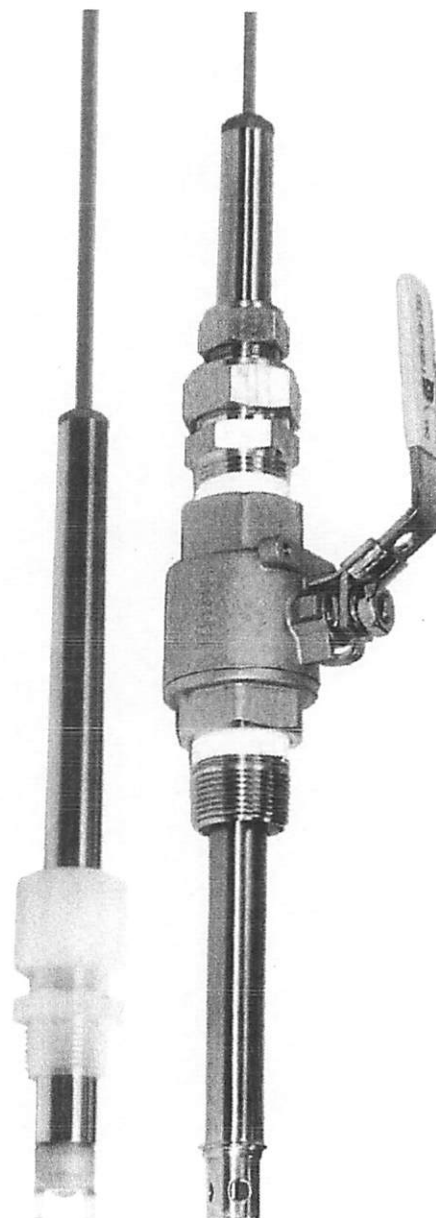
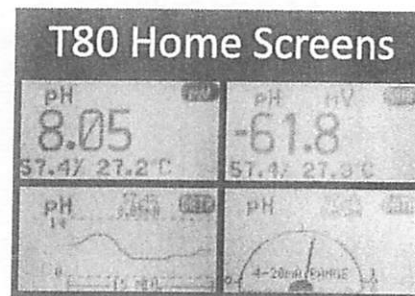
The Info screens provide Transmitter and Sensor Information. The transmitter screens display the Name, Power, Serial#, Firmware version and the output configuration. The sensor screens display the Name, Part #, Serial # and stored Calibration data.

## SIMULATE

The Simulate Menu allows the input and output signals to be simulated. The outputs are easily tested by entering a 4-20 mA output value or energizing and de-energizing a relay. The Ramp function cycles the signal across the configured 4-20 mA range, i.e. the transmitter generates a signal from 0 pH to 14 pH and back to 0 pH activating relays and generating a 4-20 mA output. The cycle time and the duration are adjustable allowing sufficient time for an individual to walk to the control room to verify the output.

## POWER SUPPLY and OUTPUTS

The Model T80 transmitter is available as a loop powered (single channel only), a 24 VDC or a 100/240 VAC powered transmitter. The loop powered version is available with an optional HART® output. The line powered instruments have one 4-20 mA output per channel and MODBUS RTU. Available options include HART® communication and an Alarm Relay package. The (3) relays can be configured as Alarm (set point) relays, timer activated relays or Fault relays.



**HART**  
COMMUNICATION PROTOCOL



# Model T80 Universal Transmitter

## The ECD 6 Point Advantage

- 1 Universal Transmitter:** single or dual channel, measures pH, ORP, DO, Specific Ion, Turbidity, Conductivity or Resistivity
- 2 Graphic LCD Display:** Easy to Read Graphical and Numerical Information
- 3 Simple Menu Structure:** Intuitive, Easy to navigate and Configure
- 4 Use with ECD Digital Intelligent Sensors** that are factory calibrated sensors and store data
- 5 4-20 mA output with MODBUS RTU and Alarm Relays:** Flexible configurations for all applications
- 6 HART® communication**

## Description

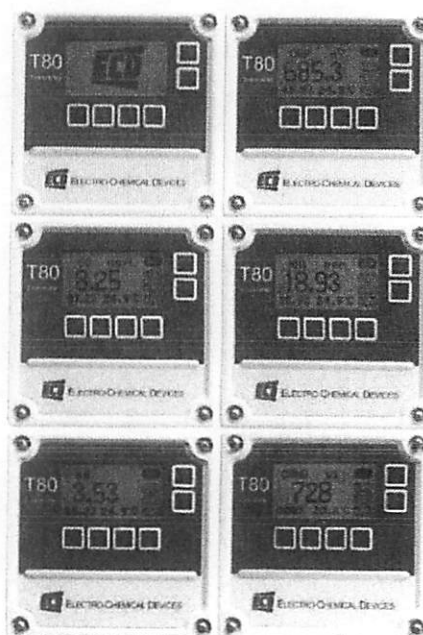
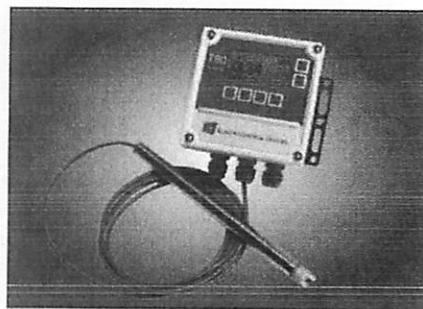
The ECD Model T80 Universal Transmitter is a single or dual channel transmitter designed for the continuous measurement of pH, ORP, pION, Dissolved Oxygen, Turbidity, Conductivity or Resistivity in a general purpose industrial environment. The Model T80 transmitter digitally communicates with any ECD Model S80 Intelligent Sensor, automatically configuring the transmitter's menus and display screens to the measured parameter. The same transmitter can be used for any of the measurements, i.e. plug an S80 Conductivity Sensor into a Model T80 pH transmitter and it will automatically reconfigure into a conductivity transmitter. There is no longer any need to inventory multiple instrument types, the one Model T80 transmitter will automatically configure to any of the listed measurements.

### SENSORS

The Model S80 Intelligent Sensors facilitate two way communication with the Model T80 transmitters. The type of sensor, identity and serial number are stored in the sensor's memory along with calibration registers. The Model S80 sensors are calibrated at the factory so they are ready to use when connected to a Model T80 transmitter. The Model S80 sensors are waterproof and submersible with all internal components epoxy encapsulated inside the 3/4" O.D. housing. The Model S80 sensors use the same field proven, easily replaceable electrodes as the Model S10 and S17 sensors saving time and money. A digital converter option is available for the Model T80 transmitter to allow the use of non-digital sensors. The digital converter is only available on line powered instruments.

### DISPLAY

The Model T80 Transmitter features a large easily viewed LCD display. Loop powered instruments have Black lettering on a Grey background, while 100-240 VAC and 24 VDC powered instruments have Blue lettering on a White background when the LED backlight is on. The Model T80 display is easily switched between the single and dual channel display modes. It has three



## Model T80 Universal Transmitter



Measure pH, ORP, Specific Ion, Dissolved Oxygen,  
Turbidity, Conductivity or Resistivity with  
**Model S80 Intelligent Sensors**



**ELECTRO-CHEMICAL DEVICES**

2.18

**Paul Rafuse**

ECD

**From:** Neal Dewitt <neald@AMCOig.com>  
**Sent:** Monday, August 11, 2014 2:56 PM  
**To:** prafuse@townsend.ma.us  
**Cc:** 'Mary Saras'; 'Christopher De Witt'  
**Subject:** ECD Model T80 pH Transmitter

Hi Paul,

Please take a moment to review the following:

- (1) ECD Model T80 pH Transmitter  
Digital Display, On-Board Programming  
2 Isolated 4-20mA Outputs, pH & Temperature  
3 Alarm Relays  
Nema 4X Wall Mount Enclosure  
P/N T80-10-21-0-01  
\$ 1200.00 Net
- (1) ECD Model S80 "Intelligent" pH Sensor Assembly  
10", 316SS Housing, 2005145 pH Electrode Included  
10' Cable, 3/4" NPT Polypro Compression Fitting  
\$ 415.00 Net
- (1) ECD Radel Style pH Electrode (Spare)  
P/N 2005145.VIT  
\$ 165.00 Net

**Delivery:** 2-3 Weeks  
**Terms:** Net 30 Days  
**F.O.B.:** Irvine, CA

In the event of an order, please issue to: Electro-Chemical Devices c/o AMCO Instrument Group



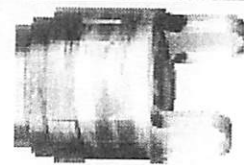
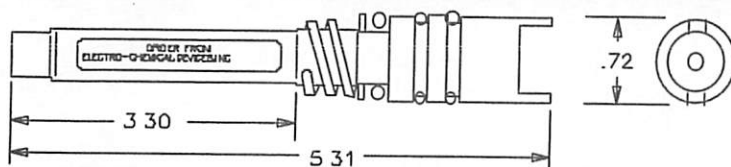
**AMCO INSTRUMENT GROUP**

Neal De Witt  
4 Evergreen Lane, Unit 7  
Hopedale, MA 01747  
Phone: 508-966-3060  
Cell: 781-727-5828  
neald@amcoig.com



# *ELECTRO-CHEMICAL DEVICES, INC.*

## pH CARTRIDGE SPECIFICATIONS



### ECD Part Number 2005145

#### Description:

GENERAL PURPOSE DOUBLE JUNCTION ELECTRODE WITH POLYMERIZED REFERENCE. pH CARTRIDGE.

#### General Specifications:

pH Range (optimum range):

0 to 14 pH (1 to 13 pH)

Temperature Range:

-5° to +90°C (+23°F to +194°F)

Pressure Range:

100 psi @ 25°C (690 kPa)

Body Material:

Translucent *RADEL*™ (polyphenylsulfone)

Connector:

BNC jack

Internal o-ring Material:

None, or viton

External o-ring Material:

Viton, standard. Options for EPR, fluorosilicone, silicone, kalrez and CV75.

Position Sensitive:

No

#### Measurement Specifications:

Membrane Material & Type:

Clear glass, flat bulb

Electrode slope per decade:

59.16 mV / pH unit

Bulb Diameter/Surface Area:

8.25 mm / 26 mm<sup>2</sup>

Process Reference Junction:

Teflon

#### Reference Specifications:

Reference Cell:

Ag/AgCl & KCL supersaturated in gel

Secondary Electrolyte:

Na<sub>2</sub>SO<sub>4</sub> supersaturated in cross-linked polymer

#### Electrode Interferences:

Sodium ion < 0.15 pH @ .1M Na<sup>+</sup> (12 pH)

H<sup>+</sup> < 0.1 pH in 1.0N HCl (1.0 pH)

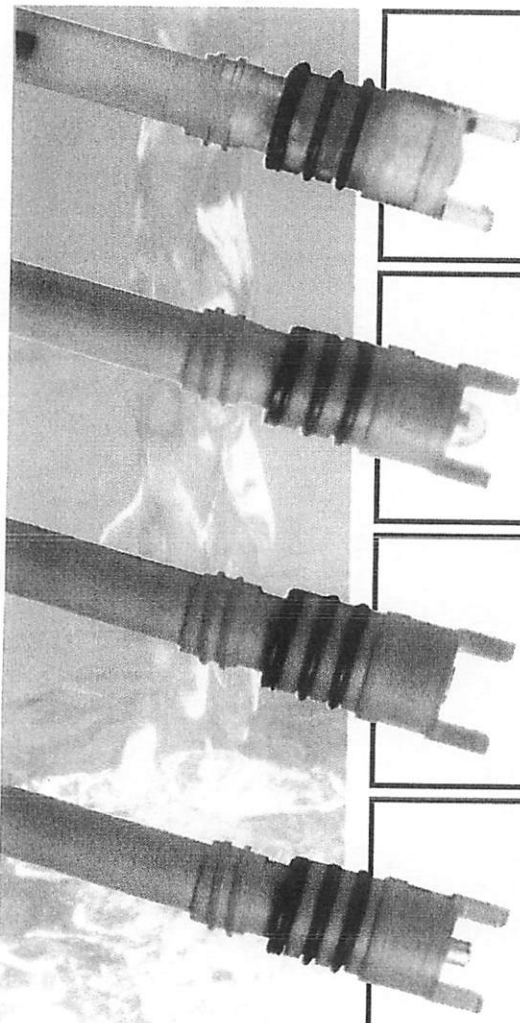
#### Shelf Life:

One (1) year, if kept hydrated.

# pH and ORP Electrode Cartridges

The S10 and S17 sensors use **replaceable electrode cartridges** to provide application specific solutions for the most demanding pH measurements. Available in either Radel (PES) or PEEK construction with full crown, double or single tine style pH bulb protection. Various pH glass formulations are available for General Purpose, High Temperature or Aggressive Chemical applications. These formulations are blown into spherical bulbs (best response), hemispherical bulbs (more durable) or a slightly radiused flat surface (easily cleaned) to address the process conditions. A Platinum tip replaces the pH glass bulb on ORP electrodes. The reference electrodes have double or triple junction reference cells with porous Teflon® and ceramic junctions and various electrolytes. This vast array of possibilities will solve most application problems - we have refined this offering to three widely used electrodes for most installations- consult our technical support staff for other unique electrode configurations.

## **ECD** **6** Point Advantage



**2005145** – This **General Purpose Electrode** has a two tine Radel body, double junction reference and slightly radiused pH bulb. While suitable for higher temperatures it is optimized for fast and stable readings in ambient temperature applications. Neutralizations, waste effluent monitoring, rinse applications and potable water are just a few of the suggested applications.

**2005157** – This **High Temperature Electrode** has a two tine PEEK body, triple junction reference and hemispherical pH bulb. This electrode is designed for the process control or neutralization of most mineral acids and bases in applications up to 130°C. The triple junction design is resistant to sulfide ion poisoning making it ideal for use in petroleum refineries and metal processing plants.

**2005066** – This **Chemically Resistant Electrode** has a two tine PEEK body, double junction reference and slightly radiused pH bulb. The PEEK body is suitable for use in most aggressive solvents, oxidizing solutions and acids or bases. This electrode is optimized for a harsh chemical environment and is suitable for service up to 130°C. Chemical separations and solvent recovery in the CPI and pharmaceutical industries along with chlorine production and flotation in mining are suggested applications.

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### **SENTINEL**



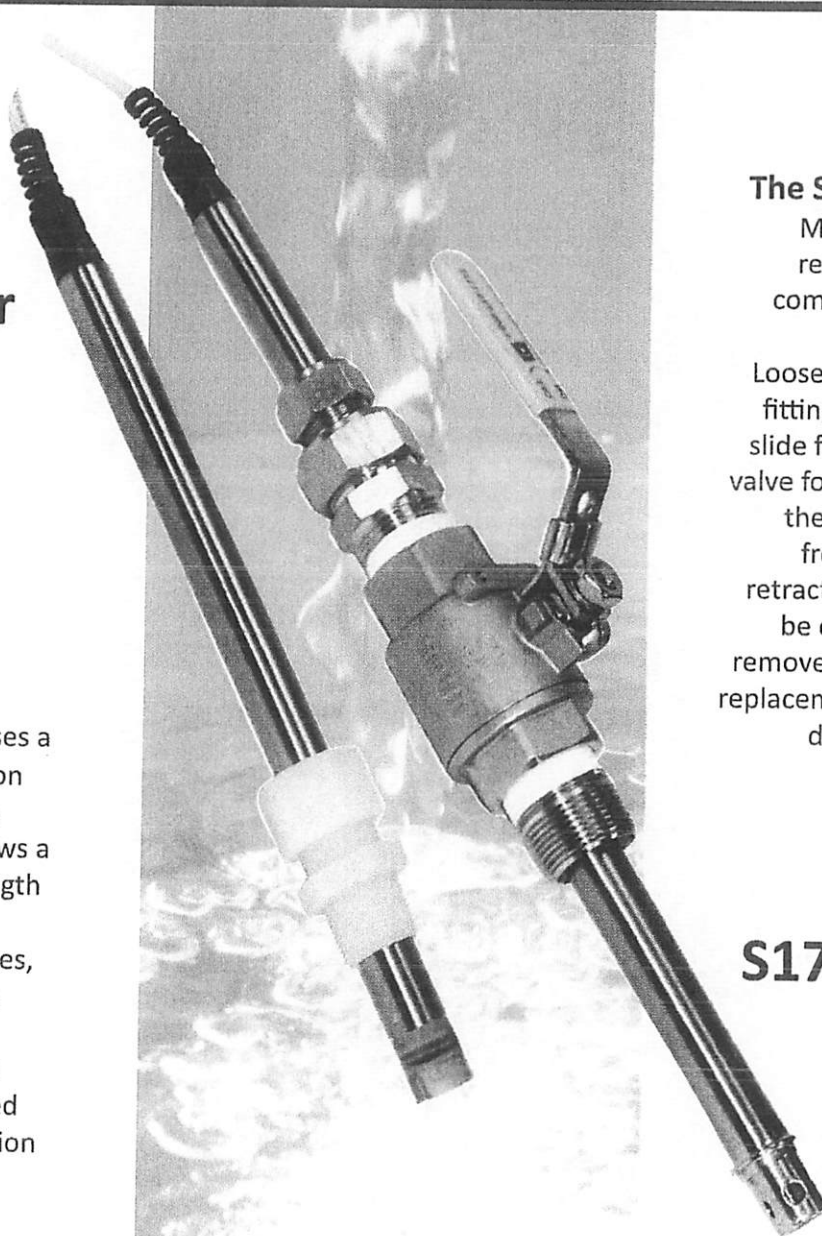
All reference electrodes degrade over time, some become poisoned, some depleted of electrolyte, and both cases cause the measurement to drift. **SENTINEL** is a feature that monitors the reference electrode potential and displays the drift graphically and/or with a 4-20 mA output providing a predictive maintenance alert before there is a problem. The **SENTINEL** option is available on all mV based sensors, pH, ORP and Specific Ion.

# S10 & S17 Sensors

**S10 & S17 Sensor Overview** - The ECD sensor family consists of two Universal Sensor Designs, the Model S10, an immersion or insertion sensor and the Model S17 a valve retractable sensor. The fully rebuildable S10 and S17 sensors have a rugged 316 stainless steel body that includes a sensing element, a temperature module and a signal conditioner for the process variable with cabling. Measurement cartridges for pH, ORP, Specific Ion, Dissolved Oxygen, Conductivity and Resistivity are available. The S10/S17 built-in electronic signal conditioner minimizes the influence of extraneous noise allowing the sensor to be located hundreds of feet from the instrument. Housings are available in 316 Stainless Steel (standard), Titanium, Hastelloy, Polypropylene, or PVDF and also in optional custom lengths.

## S10 Sensor

**The S10 Sensor** uses a  $\frac{3}{4}$ " MNPT compression fitting as the process connection. This allows a variable insertion length to accommodate installation in pipe tees, flow cells, or through tank walls and if the fitting is reversed the sensor can be installed in a pipe for submersion in a tank.



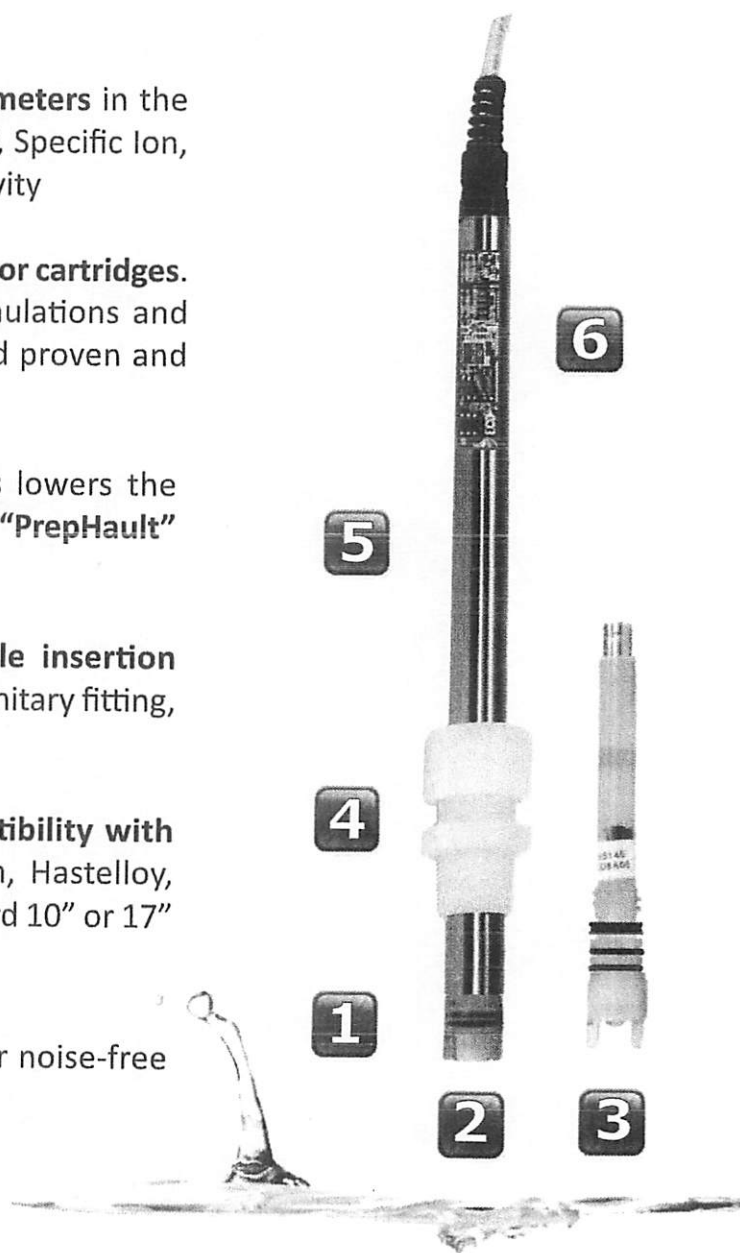
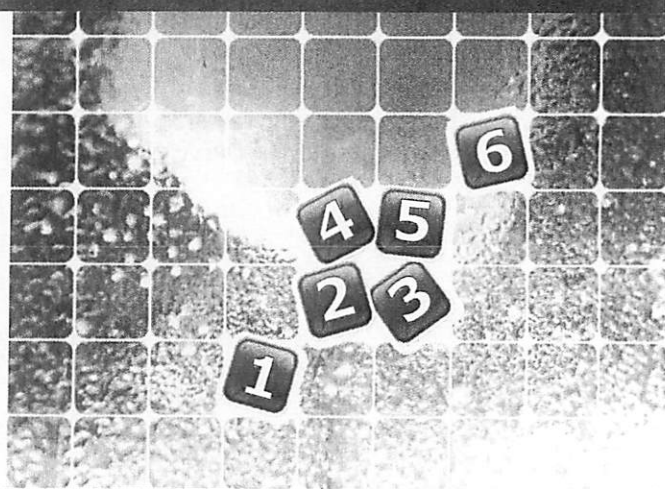
**The S17 Sensor** uses a 1" MNPT ball valve, 1"x  $\frac{3}{4}$ " reducer and a  $\frac{3}{4}$ " MNPT compression fitting as the process connection. Loosening the compression fitting allows the sensor to slide freely through the ball valve for either insertion into the process or retraction from the process. Once retracted, the ball valve can be closed and the sensor removed for maintenance or replacement without shutting down the process line.

## S17 Sensor

**Electro-Chemical Devices** offers a complete line of liquid analytical sensors - pH, ORP, Specific Ion, Dissolved Oxygen, Conductivity & Resistivity. The ECD technical advantage has 6 points of design flexibility to configure the sensor to best fit your application.

## **ECD** 6 Point Advantage

- 1** Multiple individual measurement parameters in the same mechanical configuration- pH, ORP, Specific Ion, Dissolved Oxygen, Conductivity & Resistivity
- 2** Readily available **application specific sensor cartridges**. Many unique pH electrode design formulations and materials of construction which are field proven and selected for long life and accuracy.
- 3** Long life **replaceable sensor cartridges** lowers the overall operating cost. Optional **SENTINEL "PrepHault"** sensor life indicator.
- 4** Various **process fittings with adjustable insertion lengths** - 3/4" NPT compression fitting, sanitary fitting, and valve retractable fittings.
- 5** **Industrial housing materials for compatibility with process fluid**. Stainless Steel, Titanium, Hastelloy, Polypropylene or PVDF (Kynar™). Standard 10" or 17" optional custom lengths.
- 6** **Built-in electronic signal conditioning** for noise-free signal transmission.







## Model S10 & S17 Sensors



pH, ORP, Specific Ion, Dissolved Oxygen,  
Conductivity & Resistivity Measurement



**ELECTRO-CHEMICAL DEVICES**



# pH/ORP Controllers



## WPH/WDP400 Series

The WPH/WDP400 Series pH/ORP on-line process controllers are designed for a broad range of industrial, commercial, and municipal water treatment applications. WPH/WDP controllers are easily configured to accurately measure pH or mV (ORP) values from Walchem's WEL and WDS differential combination electrodes, or any conventional combination electrode.

A versatile output configuration allows you to program up to four outputs in a variety of control modes. Select from on/off mechanical relays or pulse proportional control for direct connection to metering pumps. The easy-to-use menu format and pre-wired, pre-mounted panel system options make set-up and installation quick and simple.

Integrated datalogging is available to validate system performance. A USB memory stick is all that's needed to extract data and event logs that include electrode measurements, temperature and relay status. Download log files from the USB stick to a PC at your convenience. It couldn't be easier!



### Summary of Key Benefits

#### ➤ **Dual Input Reduces Cost**

Dual pH or ORP electrode inputs allow one controller to take the place of two, reducing cost and space requirements, and simplifying installation.

#### ➤ **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**

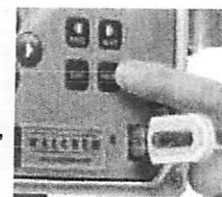
The NEMA 4X enclosure, combined with Walchem's WEL and WDS electrodes, provides a waterproof system with no BNC connectors exposed to wet or corrosive environments.

#### ➤ **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.



# WALCHEM

IWAKI America Inc.

2.10

**Paul Rafuse**

Walchem

**From:** Neal Dewitt <neald@AMCOig.com>  
**Sent:** Friday, August 08, 2014 8:27 AM  
**To:** prafuse@townsend.ma.us  
**Cc:** 'Mary Saras'; 'Christopher De Witt'  
**Subject:** Walchem pH Transmitter with ECD pH Electrode Assembly

Hi Paul,

Sorry for the delay. Please take a moment to review the following:

- (1) Walchem WPH410 pH Indicating Transmitter  
(2) 4-20mA Outputs, pH & Temperature  
Nema 4X Wall Mount Enclosure  
Part Number: WPH410-5-2-N

\$ 956.00 Net

- (1) ECD PHS10 pH Electrode Assembly  
10" Stainless Steel Insertion Assembly  
Double Junction Radel pH Electrode  
20' Cable, 3/4" NPT Compression Fitting  
Part Number: PHS10-WLK-CBL20-EG-75PP

\$ 565.00 Net

ECD Replacement pH Electrode Cartridge  
Part Number: 2005145.VIT

\$ 165.00 Net

**Delivery:** 1-2 Weeks  
**Terms:** Net 30 Days  
**F.O.B.:** Hopedale, MA



**AMCO INSTRUMENT GROUP**

Neal De Witt  
4 Evergreen Lane, Unit 7  
Hopedale, MA 01747  
Phone: 508-966-3060  
Cell: 781-727-5828  
neald@amcoig.com



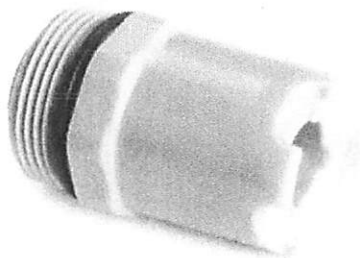
## PEEK Salt Bridge, Kynar (PVDF) Outer-Junction

[Gallery](#)

Product #: SB-P1SV  
 USD Price: \$67.00  
 Available  
 Quantity

### Optional Accessories |

[Shipping Policy and Rates](#)  
[Return Policy](#)  
[Hach Warranty](#)  
[Terms and Conditions](#)



[Buffer Solution, pH 7.00 \(NIST\),  
 color-coded yellow, 500 mL](#)

USD Price: \$11.95

[Add to Order](#)

Easily and inexpensively extend the life of your Hach differential sensors. By periodically replacing the salt bridge and standard cell solution, you can maximize the life of your Hach Differential Sensors. For optimum performance, Hach recommends that differential sensor salt bridges be replaced every 6 months.

- Lowers Lifetime Cost of Process pH Sensors



[Buffer Solution, pH 4.01 \(NIST\),  
 color-coded red, 500 mL](#)

USD Price: \$11.95

[Add to Order](#)



[Buffer Solution, pH 10.01 \(NIST\),  
 color-coded blue, 500 mL](#)

USD Price: \$11.95

[Add to Order](#)

### Recently Viewed Items



[3/4 Inch Combination  
 pH/ORP Sensor,  
 Convertible Sensor  
 Style, Ryton Body  
 Material, General  
 Purpose pH Glass  
 Electrode, Temperature  
 Compensation - PT1000  
 ohm RTD](#)



[pHD Differential pH  
 Convertible Sensor,  
 PEEK Body, Wide-range](#)



[pHD Convertible Sensor  
 with PRO Mount, PEEK®  
 Body, pH-Wide Range,  
 15 ft Cable](#)



[pHD™ Sensor, PEEK  
 Body, Convertible Body  
 Style, Glass Electrode,  
 pH-Wide Range, 25 ft  
 Cable](#)



[sc200 Universal  
 Controller: 100-240 V  
 AC with one analog  
 pH/ORP/DO sensor  
 input and two 4-20 mA  
 outputs](#)



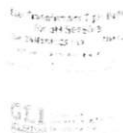
## Standard Cell Solution, Concentrated pH 7.0 Buffer (Equi-Transferrant), 500 mL

[Gallery](#)

**Product #:** 25M1A1025-115  
**USD Price:** \$63.85  
**Available**  
**Quantity**

### Optional Accessories |

[Shipping Policy and Rates](#)  
[Return Policy](#)  
[Hach Warranty](#)  
[Terms and Conditions](#)



PEEK Salt Bridge, Kynar (PVDF)  
Outer-Junction  
 USD Price: \$67.00  
[Add to Order](#)



Standard Cell Solution for Hach pHD Differential pH and ORP Sensors, packaged in resealable 500 mL bottle. Used to replenish standard cell chamber while replacing salt bridge.



Ryton Salt Bridge, Kynar (PVDF)  
Outer-Junction  
 USD Price: \$67.00  
[Add to Order](#)



PEEK Salt Bridge, Kynar (PVDF)  
Outer-Junction (5 pack)  
 USD Price: \$305.00  
[Add to Order](#)

### Recently Viewed items



PEEK Salt Bridge, Kynar  
(PVDF) Outer-Junction



3/4 Inch Combination  
pH/ORP Sensor,  
Convertible Sensor  
Style, Ryton Body  
Material, General  
Purpose pH Glass  
Electrode, Temperature  
Compensation - PT1000  
ohm RTD



pHD Differential pH  
Convertible Sensor,  
PEEK Body, Wide-range



pHD Convertible Sensor  
with PRO Mount, PEEK®  
Body, pH-Wide Range,  
15 ft Cable



pHD™ Sensor, PEEK  
Body, Convertible Body  
Style, Glass Electrode,  
pH-Wide Range, 25 ft  
Cable



## sc200 Universal Controller: 100-240 V AC with one analog pH/ORP/DO sensor input and two 4-20 mA outputs



[Gallery](#)

Product #: LXV404.99.00102  
USD Price: \$1,195.00  
Available

Quantity

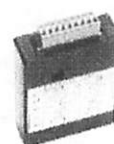
### Optional Accessories |



[sc200 Weather and Sun Shield with UV Protection Screen](#)

USD Price: \$181.00

[Add to Order](#)



[MODBUS RS232/485 Communication Module for sc200 Universal Controller](#)

USD Price: \$469.00

[Add to Order](#)



WATER QUALITY TESTING. DRAMATICALLY STREAMLINED.

[LEARN MORE](#)

**HACH SL1000**  
**PORTABLE PARALLEL ANALYZER™ (PPA)**

[Shipping Policy and Rates](#)  
[Return Policy](#)  
[Hach Warranty](#)  
[Terms and Conditions](#)



The sc200 Universal Controller is the most versatile controller on the market. It allows the use of digital and analog sensors, either alone or in combination, to provide compatibility with the broadest range of sensors. It replaces the Hach sc100 digital and GLI53 analog controllers with advanced features for easier operator use. The sc200 controller can be configured to operate two digital sensor inputs, two analog sensor inputs, or a combination of one digital and one analog input. Customers may add communication modules for a variety of protocols including MODBUS RTU, Profibus DPV1, and HART.

- Maximum Versatility
- Ease of Use
- Confidence in Results
- One Controller, Numerous Communication Options
- Broadest Range of Sensors

[Power cord kit \(North American\) for sc200](#)

USD Price: \$52.05

[Add to Order](#)

### Recently Viewed Items



[pH Differential pH Convertible Sensor, PEEK Body, Wide-range](#)



[CPVC Union Mount for Hach pH Sensor](#)



[Standard Cell Solution, Concentrated pH 7.0 Buffer \(Equivalent\), 500 mL](#)



[PEEK Salt Bridge, Kynar \(PVDF\) Outer-Junction](#)



[3/4 Inch Combination pH/ORP Sensor, Convertible Sensor Style, Ryton Body Material, General Purpose pH Glass Electrode, Temperature Compensation - PT1000 ohm RTD](#)





## pHD Differential pH Convertible Sensor, PEEK Body, Wide-range

[Gallery](#)

Product #: PD1P1  
 USD Price: \$752.00  
 Available  
 Quantity

### Optional Accessories |



[Analog Interconnect Extension Cable](#)  
 USD Price: \$3.89  
[Add to Order](#)



PEEK, Convertible Body Style, 4.5 m Analog Cable, General Purpose Glass pH Electrode

- Exceptional Performance with the Differential Electrode Measurement Technique
- Lower Maintenance Needs with the Double Junction Salt Bridge
- Extended Working Life with the Replaceable Salt Bridge/Protector
- Reliability with Built-in Encapsulated Preamp
- Patented Technology

[Pole Mount Assembly for 1 NPT Sensors](#)  
 USD Price: \$438.00  
[Add to Order](#)

[Shipping Policy and Rates](#)  
[Return Policy](#)  
[Hach Warranty](#)  
[Terms and Conditions](#)



[Float Mount Assembly for 1 NPT Sensors](#)  
 USD Price: \$603.00  
[Add to Order](#)

### Recently Viewed Items



[CPVC Union Mount for Hach pHD Sensor](#)



[Standard Cell Solution, Concentrated pH 7.0 Buffer \(Equivalent Transferrant\), 500 mL](#)



[PEEK Salt Bridge, Kynar \(PVDF\) Outer-Junction](#)



[3/4 Inch Combination pH/ORP Sensor, Convertible Sensor Style, Ryton Body Material, General Purpose pH Glass Electrode, Temperature Compensation - PT1000 ohm RTD](#)



[pHD Differential pH Convertible Sensor, PEEK Body, Wide-range](#)



## CPVC Union Mount for Hach pH Sensor


[Gallery](#)

Product #: 6131300

USD Price: \$310.00

Available

Quantity



Cpvc Union Mount For Hach Phd Sensor. Includes Standard 1-1/2 Inch Tee, Special Union Pipe With Adaptor, Sealing Hub, And Lock Ring In Cpvc, And Viton® O-Ring.

- Differential Electrode Measurement Technique
- Versatile Mounting Styles
- Replaceable Salt Bridge/Protector
- Built-in Encapsulated Preamp
- Durable Body Materials

[Shipping Policy and Rates](#)  
[Return Policy](#)  
[Hach Warranty](#)  
[Terms and Conditions](#)



Recently Viewed Items



Standard Cell Solution,  
Concentrated pH 7.0  
Buffer (Equi-  
Transferrant), 500 mL



PEEK Salt Bridge, Kynar  
(PVDF) Outer-Junction



3/4 Inch Combination  
pH/ORP Sensor,  
Convertible Sensor  
Style, Ryton Body  
Material, General  
Purpose pH Glass  
Electrode, Temperature  
Compensation - PT1000  
ohm RTD



pH Differential pH  
Convertible Sensor,  
PEEK Body, Wide-range



pH Convertible Sensor  
with PRO Mount, PEEK®  
Body, pH-Wide Range,  
15 ft Cable



**Be Right<sup>™</sup>**

2.18

Hach Company  
PO Box 608  
Loveland, CO 80539-0608  
Phone: (800) 227-4224  
Fax: (970) 669-2932  
Email: Quotes@Hach.com

Quote Number: 09C041201074R2  
Quote Date: 7/14/2014  
Quote Valid Until: 8/14/2014

**Quote For:**

Paul Rafuse  
Operations Manager  
Townsend Water Dept  
540 Main Street  
Townsend, MA  
prafuse@townsend.ma.us  
Work: (978) 230-3001

**Account Manager:**

Trina Picardi  
978-551-6751

Hach has two options for pH sensors connecting to the same controller. The controller is the upgrade from the P53/63 the plant has right now in 1 station.

<u>Part Number</u>	<u>Item Description</u>	<u>Qty</u>	<u>Unit Price</u>	<u>Discount</u>	<u>Ext. Price</u>
PD1P1	pH Sensor, Peek Body, Rebuildable With Temperature	1	\$ 639.20		\$ 639.20
LXV404.99.00102	Single Input, pH controller with 4-20mA outputs	1	\$ 1,114.00		\$1,114.00
6131300	Union Tee for Mounting the pH sensor	1	\$ 263.50		\$ 263.50

**COST & PARTS FOR REBUILDABLE SENSOR**

SB-P1SV	Salt Bridge	1	\$67.00		\$67.00
25M1A1025-115	Salt Bridge Solution (500 mL bottle)	1	\$63.85		\$63.85

**Total for Rebuildable Sensor \$ 2,016.70**

**Total for Throw-away Sensor \$ 1,629.50**

TOWNSEND WATER DEPARTMENT

QUOTES TO PURCHASE NEW PH CONTROLLERS AND SENSORS

COMPANY	CONTROLLER	SENSOR		SENSOR MOUNTING EQUIP.		TOTAL	REBUILD COST
		REBUILDABLE	THROW-AWAY				
HACH	\$1,114.00	\$639.20	\$260.00	\$263.50	RB	\$2,016.70	<sup>1</sup> \$130.85
	\$1,114.00				TA	\$1,637.50	<sup>2</sup> \$260.00
WALCHEM	\$956.00		\$565.00 <i>probe &amp; cart</i>		TA	\$1,521.00 <i>4563</i> ✓	\$165.00
ECD (ELECTRO CHEMICAL DEVICES)	\$1,200.00		\$415.00			\$1,615.00	\$165.00

<sup>1</sup> Price includes Salt Bridge \$67.00 & 500mL bottle cell solution \$63.85

<sup>2</sup> Price is for another Sensor/Cartridge

11:51 AM  
08/05/14  
Accrual Basis

Townsend Water Department  
Budget vs. Actual  
July 2013 through June 2014

	<u>Jul '13 - Jun 14</u>	<u>Budget</u>	<u>\$ Over Budget</u>
<b>061.400 · Special Projects 400</b>			
5005 · Master Plan Revision	0.00	0.00	0.00
5009 · Main St Station Upgrade	0.00	58,219.23	(58,219.23)
5012 · System Enhancement	218,885.82	1,068,565.47	(849,679.65)
5013 · Water Main Extensions	0.00	127,911.75	(127,911.75)
5014 · Well Development & Exploration	0.00	6,276.29	(6,276.29)
5016 · Harbor Trace Well Construction	0.00	0.00	0.00
<b>Total 061.400 · Special Projects 400</b>	<b>218,885.82</b>	<b>1,260,972.74</b>	<b>(1,042,086.92)</b>
<b>061.500 · Special Articles 500</b>			
5000 · Equipment Replacement Fund	8,573.93	10,000.00	(1,426.07)
5020 · Storage Tank Maintenance	0.00	13,883.40	(13,883.40)
5030 · Water Oper Emergency Res Fund	0.00	0.00	0.00
5035 · Water-CIP New Serv Truck	34,430.65	45,000.00	(10,569.35) <i>zero -</i>
5040 · Water-CIP-Cross St Well Maint	10,873.50	20,000.00	(9,126.50) <i>zero</i>
5050 · Water-CIP-VFD&Elec SVS Pump	0.00	25,000.00	(25,000.00) <i>carry forward</i>
<b>Total 061.500 · Special Articles 500</b>	<b>53,878.08</b>	<b>113,883.40</b>	<b>(60,005.32)</b>
<b>Total 061.000 · General Operations 000</b>	<b>761,092.71</b>	<b>1,896,353.43</b>	<b>(1,135,260.72)</b>
<b>061.009 · Debt Service 9</b>			
5910 · Long Term Debt-East Side Phase1	33,002.00	33,002.00	0.00
5911 · Long Term Debt-East Side Ph 2	47,012.98	48,030.00	(1,017.02)
5920 · Long term Interest-Phase1	9,371.68	9,378.00	(6.32)
5921 · Long Term Int East Side Ph2	14,569.95	14,970.00	(400.05)
5975 · Intermunicipal Agreement	218,856.34	183,000.00	35,856.34
<b>Total 061.009 · Debt Service 9</b>	<b>322,812.95</b>	<b>288,380.00</b>	<b>34,432.95</b>
<b>Total Expense</b>	<b>1,083,905.66</b>	<b>2,184,733.43</b>	<b>(1,100,827.77)</b>
<b>Net Ordinary Income</b>	<b>(1,082,599.56)</b>	<b>(2,184,733.43)</b>	<b>1,102,133.87</b>
<b>Net Income</b>	<b><u>(1,082,599.56)</u></b>	<b><u>(2,184,733.43)</u></b>	<b><u>1,102,133.87</u></b>





TOWN OF TOWNSEND  
BOARD OF WATER COMMISSIONERS  
APPLICATION TO ABATE OR ADJUST CHARGES

Name: W. Bismarck Account # 61095

Address: 1 Hayes Road

Phone # \_\_\_\_\_ Email Address \_\_\_\_\_

Billing date \_\_\_\_\_

AMOUNT: ~~(+)~~ (+) 64.00 ABATEMENT [ ] ADJUSTMENT [ ☒ ] (check one)

REQUESTED BY: CUSTOMER [ ] OFFICE [ ] OTHER [ ] - if other please explain below:

Reasons: (please attached supporting documentation if applicable)

64.00 Added back to his ACCT payment  
Should have been posted to ACCT 61096.

APPROVED [ ] DENIED [ ] (check one)

DATE: \_\_\_\_\_

TOWNSEND BOARD OF WATER COMMISSIONERS

[Signature]  
[Signature]  
[Signature]

New bill  
& letter  
mailed  
8-6-11



**TOWN OF TOWNSEND  
BOARD OF WATER COMMISSIONERS  
APPLICATION TO ABATE OR ADJUST CHARGES**

Name: Raymond Marchand Account # 61096

Address: 3 Haynes Rd

Phone # \_\_\_\_\_ Email Address \_\_\_\_\_

Billing date \_\_\_\_\_

AMOUNT: \_\_\_\_\_ ABATEMENT [ ] ADJUSTMENT [X] (check one)

REQUESTED BY: CUSTOMER [ ] OFFICE [ ] OTHER [ ] - if other please explain below:

Reasons: (please attached supporting documentation if applicable)

\$64.00 Adjusted to payments between Acct 61095  
(3.46) Adjusted to Control books 4/charges

APPROVED [ ] DENIED [ ] (check one)

DATE: \_\_\_\_\_

TOWNSEND BOARD OF WATER COMMISSIONERS

[Signature]  
[Signature]  
[Signature]

64.00 payment  
from Unibank  
was posted to  
ACCT 61095 in  
ERROR —

\$3.46 in late charges  
should not have been  
charged —



Office of the  
Townsend Water Department  
540 Main Street  
West Townsend, MA 01474  
Tel: 978-597-2212  
Fax: 978-597-5611

Application No. 2014-12  
Account No. 5635  
Date 8/5/2014

### APPLICATION FOR WATER SERVICE

Name of Property Owner: Rick Lamarre & Sons Inc  
Service Address: 17 Alyssa Drive  
Townsend MA, 01469  
Tel No.: 603-635-4555 Cell No. \_\_\_\_\_  
Billing Address 171 Kendell Street, Tewksbury, MA 01876  
Billing Address (If different from service address): 16 Pulpit Rock Road, Suite 1  
Pelham NH 03078

Units (Check all that apply):

☒ Single Family (If Professional Bldg.) No. of Businesses \_\_\_\_  
☐ Multi Family (Apartment Building) No. Apartments \_\_\_\_  
☐ Hotel/Motel No. Rooms: \_\_\_\_

Type of Use (Check One): ☒ Residential ☐ Industrial  
☐ Commercial/Business ☐ Municipal  
☐ Agricultural

Is a sprinkler system required for fire protection? \_\_\_\_ Yes ☒ No  
If yes a proposed design plan of the system must be submitted including required flows, required pipe size, and size and backflow prevention device.

Is a flow test/s required? \_\_\_\_ Yes ☒ No  
If yes the owner will be billed separately at the current rate per flow test.

Is there an existing or proposed automatic lawn irrigation system? ☒ Yes \_\_\_\_ No

Has a sketch or plot plan been provided showing the location of the septic system, automatic lawn irrigation system and any known or proposed additions to the existing building? ☒ Yes \_\_\_\_ No

I, the Owner understand this form is to be completed and all Fees, charges, and required documentation must be received before water service will be turned on. I also understand that I have from April 1st to November 1st of the same calendar year of the application date to complete the installation or this application shall be null and void and the Connection/System Development charge forfeited. In addition I acknowledge the receipt of the Townsend water Department's Rules and Regulations \_\_\_\_\_

Signature of Owner/Applicant \_\_\_\_\_ Date \_\_\_\_\_

### BOARD OF WATER COMMISSIONERS

Chairman

Vice Chairman

Clerk

Date Signed by Board of Water Commissioners \_\_\_\_\_



Office of the  
Townsend Water Department  
540 Main Street  
West Townsend, MA 01474  
Tel: 978-597-2212  
Fax: 978-597-5611

Application No. 2014-11  
Account No. 5630  
Date 8/5/2014

### APPLICATION FOR WATER SERVICE

Name of Property Owner: Rick Lamarre & Sons Inc  
Service Address: 21 Alyssa Drive  
Townsend MA, 01469  
Tel No.: 603-635-4555 Cell No. \_\_\_\_\_  
Billing Address 171 Kendell Street, Tewksbury, MA 01876  
Billing Address (If different from service address): 16 Pulpit Rock Road, Suite 1  
Pelham NH 03078

Units (Check all that apply):

☒ Single Family (If Professional Bldg.) No. of Businesses \_\_\_\_  
☐ Multi Family (Apartment Building) No. Apartments \_\_\_\_  
☐ Hotel/Motel No. Rooms: \_\_\_\_

Type of Use (Check One): ☒ Residential ☐ Industrial  
☐ Commercial/Business ☐ Municipal  
☐ Agricultural

Is a sprinkler system required for fire protection? ☐ Yes ☒ No  
If yes a proposed design plan of the system must be submitted including required flows, required pipe size, and size and backflow prevention device.

Is a flow test/s required? ☐ Yes ☒ No  
If yes the owner will be billed separately at the current rate per flow test.

Is there an existing or proposed automatic lawn irrigation system? ☒ Yes ☐ No

Has a sketch or plot plan been provided showing the location of the septic system, automatic lawn irrigation system and any known or proposed additions to the existing building? ☒ Yes ☐ No

I, the Owner understand this form is to be completed and all Fees, charges, and required documentation must be received before water service will be turned on. I also understand that I have from April 1st to November 1st of the same calendar year of the application date to complete the installation or this application shall be null and void and the Connection/System Development charge forfeited. In addition I acknowledge the receipt of the Townsend water Department's Rules and Regulations \_\_\_\_\_

Signature of Owner/Applicant \_\_\_\_\_

Date \_\_\_\_\_

BOARD OF WATER COMMISSIONERS

Chairman \_\_\_\_\_

Vice Chairman \_\_\_\_\_

Clerk \_\_\_\_\_

Date Signed by Board of Water Commissioners \_\_\_\_\_



Office of the  
Townsend Water Department  
540 Main Street  
West Townsend, MA 01474  
Tel: 978-597-2212  
Fax: 978-597-5611

Application No. 2014-10  
Account No. 5625  
Date 8/5/2014

### APPLICATION FOR WATER SERVICE

Name of Property Owner: Rick Lamarre & Sons Inc  
Service Address: 23 Alyssa Drive  
Townsend MA, 01469  
Tel No.: 603-635-4555 Cell No. \_\_\_\_\_  
Billing Address 171 Kendell Street, Tewksbury, MA 01876  
Billing Address (If different from service address): 16 Pulpit Rock Road, Suite 1  
Pelham NH 03078

Units (Check all that apply):

☒ Single Family (If Professional Bldg.) No. of Businesses       
☐ Multi Family (Apartment Building) No. Apartments       
☐ Hotel/Motel No. Rooms:     

Type of Use (Check One): ☒ Residential ☐ Industrial  
☐ Commercial/Business ☐ Municipal  
☐ Agricultural

Is a sprinkler system required for fire protection? ☐ Yes ☒ No  
If yes a proposed design plan of the system must be submitted including required flows, required pipe size, and size and backflow prevention device.

Is a flow test/s required? ☐ Yes ☒ No  
If yes the owner will be billed separately at the current rate per flow test.

Is there an existing or proposed automatic lawn irrigation system? ☒ Yes ☐ No

Has a sketch or plot plan been provided showing the location of the septic system, automatic lawn irrigation system and any known or proposed additions to the existing building? ☒ Yes ☐ No

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Signature of Owner/Applicant \_\_\_\_\_

Date \_\_\_\_\_

BOARD OF WATER COMMISSIONERS

Chairman \_\_\_\_\_

Vice Chairman \_\_\_\_\_

Clerk \_\_\_\_\_

Date Signed by Board of Water Commissioners \_\_\_\_\_





Office of the  
Townsend Water Department  
540 Main Street  
West Townsend, MA 01474  
Tel: 978-597-2212  
Fax: 978-597-5611

Application No. 2014-09  
Account No. 5615  
Date 8/5/2014

### APPLICATION FOR WATER SERVICE

Name of Property Owner: Rick Lamarre & Sons Inc  
Service Address: 25 Alyssa Drive  
Townsend MA, 01469  
Tel No.: 603-635-4555 Cell No. \_\_\_\_\_  
Billing Address 171 Kendell Street, Tewksbury, MA 01876  
Billing Address (If different from service address): 16 Pulpit Rock Road, Suite 1  
Pelham NH 03078

Units (Check all that apply):

☒ Single Family (If Professional Bldg.) No. of Businesses \_\_\_\_\_  
☐ Multi Family (Apartment Building) No. Apartments \_\_\_\_\_  
☐ Hotel/Motel No. Rooms: \_\_\_\_\_

Type of Use (Check One): ☒ Residential \_\_\_\_\_ Industrial \_\_\_\_\_  
☐ Commercial/Business \_\_\_\_\_ Municipal \_\_\_\_\_  
☐ Agricultural \_\_\_\_\_

Is a sprinkler system required for fire protection? \_\_\_\_\_ Yes ☒ No  
If yes a proposed design plan of the system must be submitted including required flows, required pipe size, and size and backflow prevention device.

Is a flow test/s required? \_\_\_\_\_ Yes ☒ No  
If yes the owner will be billed separately at the current rate per flow test.

Is there an existing or proposed automatic lawn irrigation system? ☒ Yes \_\_\_\_\_ No

Has a sketch or plot plan been provided showing the location of the septic system, automatic lawn irrigation system and any known or proposed additions to the existing building? ☒ Yes \_\_\_\_\_ No

I, the Owner understand this form is to be completed and all Fees, charges, and required documentation must be received before water service will be turned on. I also understand that I have from April 1st to November 1st of the same calendar year of the application date to complete the installation or this application shall be null and void and the Connection/System Development charge forfeited. In addition I acknowledge the receipt of the Townsend water Department's Rules and Regulations \_\_\_\_\_

Signature of Owner/Applicant \_\_\_\_\_

Date \_\_\_\_\_

BOARD OF WATER COMMISSIONERS

Chairman \_\_\_\_\_

Vice Chairman \_\_\_\_\_

Clerk \_\_\_\_\_

Date Signed by Board of Water Commissioners \_\_\_\_\_

**Townsend Water Department**

8/4/2014

540 Main Street West Townsend MA 01474 PH: 978-597-2212

7

## CUSTOMER HISTORY 06/05/2000 to 07/27/2014

**Acct: 2700 DAY ROBERT & MARY Home:978 597-8017**  
**32 BALSAM DRIVE TOWNSEND MA 01469 Current Balance: \$80.05 ACTIVE**  
**Loc ID: 13900877 @ 32 BALSAM DRIVE TOWNSEND**  
**Rte: 1 Seq.# 2850 Mtr S/N: 0000000000 Dep:\$0.00**

Date	Code	Description	Previous	Present	Used	Charge	Payment	Balance
10/24/2012	WATR	Check For \$161.50					124.00	37.50
10/24/2012	WR	Check For \$161.50					37.50	0.00
1/5/2013	WATR	Read on 12/17/2012 (X1000) RemMR	751	758	7	28.00		28.00
1/5/2013	WR	Unit Charge				37.50		65.50
2/12/2013	LAT	Added on 2/12/2013				0.83		66.33
2/12/2013	DEMAN	Added on 2/12/2013				1.00		67.33
2/27/2013	WATR	Check For \$65.50					26.17	41.16
2/27/2013	WR	Check For \$65.50					37.50	3.66
2/27/2013	DEMAN	Check For \$65.50					1.00	2.66
2/27/2013	LAT	Check For \$65.50					0.83	1.83
3/26/2013	WorkOrd	20130156 Get reading APPOINTMENT: MARCH 26, 2013 2PM						1.83
4/5/2013	WATR	Read on 03/27/2013 (X1000)	758	761	3			1.83
4/5/2013	WATR	Read on 03/27/2013 (X1000)				12.00		13.83
4/5/2013	WR	Unit Charge				37.50		51.33
4/8/2013	WATR	Check For \$51.33					13.83	37.50
4/8/2013	WR	Check For \$51.33					37.50	0.00
7/1/2013	WATR	Read on 05/31/2013 (X1000) RemMR		16	16	64.00		64.00
7/1/2013	WR	Unit Charge				37.50		101.50
7/1/2013	WR	Check For \$101.50					37.50	64.00
7/1/2013	WATR	Check For \$101.50					64.00	0.00
7/3/2013	WorkOrd	20140002 Check,Repair and paint hydrant per paul ...Week of July8-12						0.00
10/1/2013	WATR	Read on 09/03/2013 (X1000) RemMR	16	38	22	88.00		88.00
10/1/2013	WR	Unit Charge				37.50		125.50
10/9/2013	WATR	Check 2524 for \$125.50					88.00	37.50
10/9/2013	WR	Check 2524 for \$125.50					37.50	0.00
1/1/2014	WATR	Read on 12/04/2013 (X1000) RemMR	38	57	19	76.00		76.00
1/1/2014	WR	Unit Charge				37.50		113.50
2/6/2014	DEMAN	Added on 2/6/2014				1.00		114.50
2/6/2014	LAT	Added on 2/6/2014				1.55		116.05
2/25/2014	WorkOrd	20140302 Get unfiltered dump						116.05

Townsend Water Department

8/4/2014

540 Main Street West Townsend MA 01474 PH: 978-597-2212

8

**CUSTOMER HISTORY 06/05/2000 to 07/27/2014**

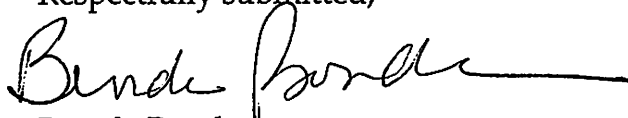
Acct: 2700 DAY ROBERT & MARY Home:978 597-8017  
 32 BALSAM DRIVE TOWNSEND MA 01469 Current Balance: \$80.05 ACTIVE  
 Loc ID: 13900877 @ 32 BALSAM DRIVE TOWNSEND  
 Rte: 1 Seq.# 2850 Mtr S/N: 0000000000 Dep:\$0.00

Date	Code	Description	Previous	Present	Used	Charge	Payment	Balance
2/25/2014	Commen	Bob called bill arrived late 2/24/14 and bill is high. He is requesting us to read the meter and email him with the reading. He left for Flordia on November 2, 2014 and 19000 gallons were used compared to 7000 gallons last year. [edited by FRONTOFFICE [en						116.05
3/3/2014	WATR	Check 2589 for \$113.50					73.45	42.60
3/3/2014	WR	Check 2589 for \$113.50					37.50	5.10
3/3/2014	LAT	Check 2589 for \$113.50					1.55	3.55
3/3/2014	DEMAN	Check 2589 for \$113.50					1.00	2.55
4/1/2014	WATR	Read on 03/05/2014 (X1000) RemMR	57	58	1	4.00		6.55
4/1/2014	WR	Unit Charge				37.50		44.05
4/28/2014	WATR	Check For \$41.50					4.00	40.05
4/28/2014	WR	Check For \$41.50					37.50	2.55
7/27/2014	WATR	Read on 06/03/2014 (X1000) RemMR	58	68	10	40.00		42.55
7/27/2014	WR	Unit Charge				37.50		80.05

Email decision to bmday 2000 @ Comcast  
 on Aug 12th

MM adjourned the meeting at 6:50 PM.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brenda Boudreau", with a long horizontal flourish extending to the right.

Brenda Boudreau

Office Administrator

061.500.5050 CIP-VFD & Electrical SVS Pump

\$25,000.00

**NM made a motion to close out account 061.500.5035 for \$10,569.35, 061.500.5040 for \$9,126.50 and to carry forward the balance of account #061.500.5050 for \$25,000.00. NB seconded. Unanimous vote.**

2.9 Discuss/Update on status of first official radio read and billing using new system. Paul reported that the new Radio Read software and billing software data was not transferring properly due to truncating issues. Because of that bills went out late. NB commented that he understood that there was also an issue of files being deleted on a database. Brenda explained that when the information was transferred through the software it calculated at 13 million dollars. After deleting that download there were some manual work orders that had been deleted as well, luckily we had those records and we were able to duplicate the information. Brenda also explained that in the future we will post future Itron readings on the first Sunday in that quarter until we can review the files for accuracy.

2.10 Discuss/ Approve the purchase of new pH controllers and sensors carried over from the July 14<sup>th</sup> meeting upon receiving additional information requested by the Board of Water Commissioners. Paul presented the Board with 3 quotes to replace the PH analyzers and probes at Main Street, Cross Street and Witches Brook pumping stations. Walchem came in with the lowest bid of \$1,521.00 each totaling \$4563.00. **NB made a motion to purchase from Walchem three PH probes and sensors at the cost of \$1,521.00 NM seconded. Unanimous vote.**

### **III. COMMISSIONERS UPDATES AND REPORTS.**

3.1 NB asked if there had been any hits at the Highland Street tank. Paul reported that after six months of clean tests they had just had a hit and had to chlorinate.

### **IV. WATER SUPERINTENDENTS UPDATES AND REPORTS.**

4.1 Update on Ford 2007 F-150 (W-1) truck repair. Paul reported that the repairs had been completed. The bill however is going to be a more than originally quoted due to extra repairs that were needed such as a new water pump, fuel pump etc. **NB made a motion to increase the previously approved amount to \$3,700.00 for the cost of repairs. NM seconded. Unanimous vote.**

4.2 Insurance claim: Lightning damage to electronic components inside Witch's Brook # 1 and upon further investigation the VFD , chart recorder and electric meter was also damaged. Paul reported that the forms have been submitted and we are waiting to find out what the cost will be to fix the damages. Paul expects the cost to run anywhere from \$16,000.00 - \$18,000.00.

### **V. OFFICE UPDATES AND REPORTS.**

5.4 NM made a motion to sign the bills payable warrants out of session. NB seconded. Unanimous vote.

5.5 The Board reviewed payroll.

### **VI. ADJOURNMENT:**



**TOWNSEND WATER DEPARTMENT**  
540 Main Street West Townsend, Massachusetts 01474

Michael MacEachern, Chairman  
Paul L. Rafuse,  
Water Superintendent

Niles Busler, Vice-Chairman

Nathan Mattila, Clerk  
(978) 597-2212  
Fax (978) 597-5561

**WATER COMMISSIONERS MEETING MINUTES**

August 11, 2014 - 5:30P.M.

Water Department 540 Main Street, Meeting Room

*MM*  
*NB*  
*9-8-14*  
*9/8/14*

**I. PRELIMINARIES:**

- 1.1 MM opened the meeting at 5:33 p.m. At 540 Main Street, West Townsend.
- 1.2 Roll call showed all members present. Chairman, (MM) Michael MacEachern, Vice Chairman, (NB) Niles Busler, Clerk, (NM) Nathan Mattilla, Superintendent, Paul Rafuse and Brenda Boudreau.
- 1.3 Announce that the meeting is being tape recorded
- 1.4 Chairman's additions or deletions. None
- 1.5 Review/ Approve meeting minutes of August 13, 2013, June 9, 2014, June 23, 2014 and July 14, 2014.  
The Board noted the August 13, 2013 minutes as written and not approved. NM and MM were not Board members at that time. NM made a motion to approve the minutes of June 9, 2014, June 23, 2014 and July 14, 2014. MM seconded. Niles Busler was absent from the June 9<sup>th</sup> meeting and did not vote.

**II. MEETING BUSINESS:**

- 2.1 Vote to adjust late charge on account # 2700, Bob Day, 32 Balsam Drive. NB made a motion to deny the request to abate the late charge on the premise that we cannot control the mail. NM seconded. Unanimous vote.
- 2.2 Approve 1" service #5615, Rick Lamarre, 25 Alyssa Drive.
- 2.3 Approve 1" service #5625, Rick Lamarre, 23 Alyssa Drive.
- 2.4 Approve 1" service #5630, Rick Lamarre, 21 Alyssa Drive.
- 2.5 Approve 1" service #5635, Rick Lamarre, 17 Alyssa Drive.  
NB made a motion to approve 1" services to 17, 21, 23 and 25 Alyssa Drive. NM seconded. Unanimous vote.
- 2.6 Approve adjustment to Acct #61095, 1 Haynes Road
- 2.7 Approve adjustment to Acct #61096, 3 Haynes Road  
NB made a motion to approve the adjustment to accounts #61095 and #61096 payment posted to wrong account in error. NM seconded. Unanimous vote.
- 2.8 Carry forward or close out CIP balances on the following accounts:

061.500.5035 CIP- New Service Truck	\$10,569.35
061.500.5040 CIP-Cross Street Well Maintenance.	\$9,126.50