



INDUSTRIAL pH INSTRUMENTATION & ELECTRODES

2-Wire Isolated pH/ORP Transmitter Systems

PHTX-45
\$1337
Meter and Electrode



- ✓ PEEK Sensor Body Construction
- ✓ Dual-Glass Style Sensor
- ✓ Replaceable Sensor Saltbridge
- ✓ Electrode Breakage Diagnostic
- ✓ Universal Mounting Configurations
- ✓ Microprocessor Based System
- ✓ Large Dual Display Format
- ✓ Loop Powered, Fully Isolated

Sensor Features

Sensor housings are constructed of PEEK, a high performance thermoplastic that provides outstanding mechanical strength and chemical resistance. Multiple sealing materials are used to preserve sensor integrity over a wide range of applications.

A large volume, dual junction saltbridge is used to maximize the in-service time of the sensor. The annular junction provides a large surface area to minimize the chance of fouling. Large electrolyte volume and dual reference junction minimizes contamination of the reference solution. The replaceable saltbridge allows for easy sensor regeneration.

The reference element of this sensor is a second pH electrode immersed in a reference buffer solution. This glass reference system allows the sensor to be used in applications that poison conventional pH sensors.

An integral preamplifier is encapsulated in the body of the sensor. This creates a low impedance signal output which ensures stable readings in harsh environments, and maximize the distance between sensor and transmitter. Sensor diagnostics are used to alarm the user in the event of electrode breakage, loss of sensor seal integrity, or integral temperature sensor failure.

Sensor electrodes can be user-specified to ensure measurement reliability and maximum sensor lifetime. The type of glass used in the pH electrode can be selected for optimal performance. The metal electrode used for ORP measurements can be platinum or gold, depending on chemical makeup of the process solution.

Shown smaller than actual size.



PHTX-45, transmitter, \$737 shown with PHE-45P electrode, \$600.

MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)		
Model No.	Price	Description
PHTX-45	\$737	pH transmitter
PHE-45P	600	pH electrode
ORTX-45	737	ORP transmitter
ORE-45P	622	ORP sensor, -1000 mV to 2000 mV
U24Y101	169	24 Vdc power supply
PHTX-45-SMH	191	Submersion mounting hardware, 1.8 m (6')
PHTX-45-RK	75	pH/ORP sensor regeneration kit: 1 saltbridge plus 1 to 125 mL bottle of reference cell solution, pH 7.00 (for Models PHE-45P and ORTX-45E sensors only)
PHA-4	5	pH 4.01 buffer solution, 475 ml bottle
PHA-7	5	pH 7.01 buffer solution, 475 ml bottle
PHA-10	5	pH 10.01 buffer solution, 475 ml bottle
FW-332	89	Reference Book: Advanced pH Measurement and Control

Comes complete with operator's manual.

Ordering Example: PHTX-45, pH transmitter, PHE-45P, electrode and PHA-4, buffer solution, \$737 + 600 + 5 = \$1342.





Transmitter Features

The microprocessor-based transmitter is loop-powered and fully isolated for high service reliability. The transmitter includes devices to protect the system from power surge and brownout events.

The large, high contrast, super-twist display provides excellent readability over a wide operating temperature range, even in low light conditions. The main display line consists of large, segmented characters with measurement units. The secondary display line utilizes easily readable dot matrix characters for clear display of calibration and diagnostic messages. Two of four measured parameters may be displayed simultaneously.

Four-button programming provides intuitive navigation through the menu driven user interface. The 4 to 20 mA transmitter output can be configured to represent any portion of the measurement range. Output HOLD, ALARM and SIMULATION features provide the user with complete control of the system output under any condition.

Diagnostic messages provide a clear description of system condition, which eliminates confusing error codes that must be looked up in the operator's manual.

The flexible two-point and sample calibration options include auto-buffer recognition from thirteen built-in buffer tables. Manual override of the automatic buffer values allows the user to customize calibration values. To ensure high accuracy, all calibration methods include stability monitors that check temperature and main parameter stability before accepting data.

Specifications

PHE-45P and ORE-45P

Sensor Specifications

Sensor Cable: 3 m (10')

Measuring Range:

PHE-45P: 0 to 14.00 pH

ORE-45P: -1000 to 2000 mV

Sensitivity: 0.002 pH, 0.2 mV (ORP)

Stability: 0.02 pH or 2 mV per

24 hours, non-cumulative

Wetted Materials:

PHE-45P: PEEK, ceramic, titanium, glass, FKM, EDPM (316 stainless steel with 316SS body option)

ORE-45P: PEEK, ceramic, titanium, glass, FKM, EDPM, platinum or gold

Temperature Compensation:

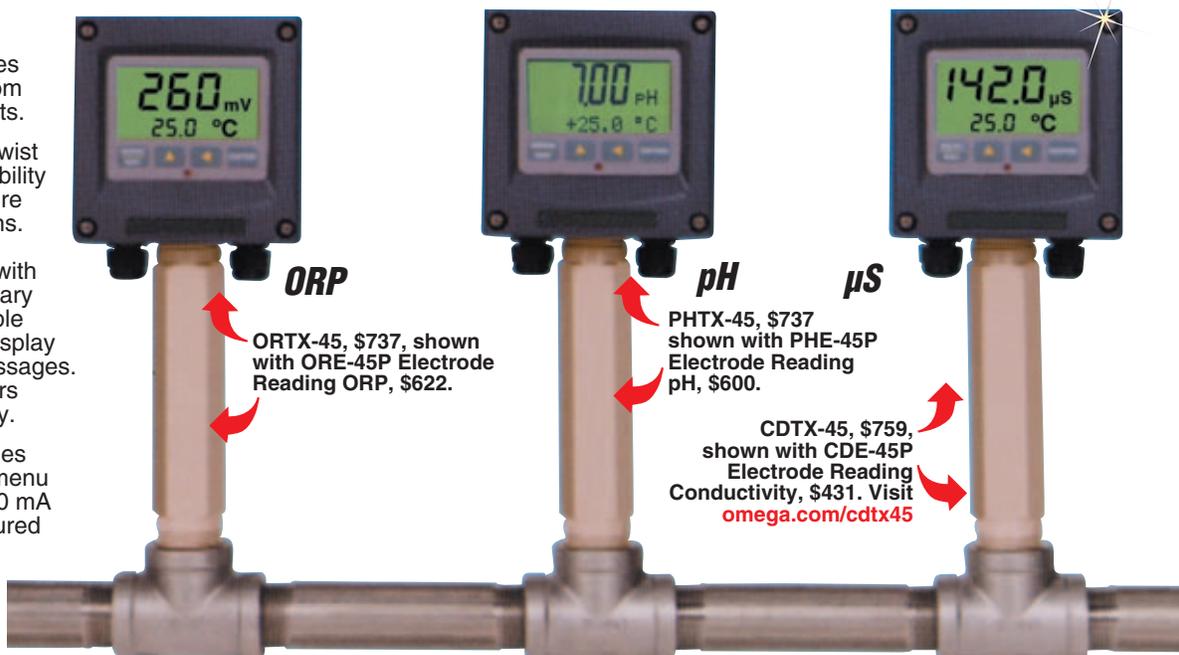
Pt1000 Sensor Cable:

6 Conductor plus 2 shields

Temperature Range:

-5 to 95°C (23 to 203°F)

PHTX-45 in Line Application Solution



ORP

ORTX-45, \$737, shown with ORE-45P Electrode Reading ORP, \$622.

pH

PHTX-45, \$737 shown with PHE-45P Electrode Reading pH, \$600.

μS

CDTX-45, \$759, shown with CDE-45P Electrode Reading Conductivity, \$431. Visit omega.com/cdtx45

Pressure Range: 0 to 100 psig

Maximum Flow Rate:

3 m (10') per second

Sensor to Transmitter Distance:

914 m (3000')

Mounting Options: 1 NPT convertible

Weight/Shipping Weight:

0.45 kg (1 lb)

PHTX-45 Transmitter

Specifications

Enclosure: NEMA 4X, IP65, polycarbonate, stainless steel hardware, weatherproof and corrosion resistant, 112 H x 112 W x 89 mm D (4.4 x 4.4 x 3.5")

Mounting Options: Wall, panel, pipe, Din rail, integral-sensor

Conduit Openings: 2-PG9 openings, 1 to 1 NPT center opening, cord grips and plug included

Weight/Shipping Weight:

0.45 kg (1 lb)

Display: Large, high-contrast, super-Twist (STN) LCD; 4-digit main display with 19.1 mm (0.75") seven-segment character, 12-digit secondary display, 7.6 mm (0.3") 5 x 7 dot matrix character

Keypad: 4-key membrane type with tactile feedback, polycarbonate with UV coating, integral EMI/static shield and conductivity coated window

Ambient Temperature:

Service: -20 to 60°C (-4 to 140°F)

Storage: -30 to 70°C (-22 to 158°F)

Ambient Humidity:

0 to 95%, non-condensing

Location: Designed for hazardous and non-hazardous areas

EMI/RFI Influence:

Designed to EN61326-1

Voltage Range:

16 to 35 Vdc (two-wire device)

Output Isolation:

600 V galvanic isolation

Transmitter Cable Type:

Belden twisted-pair, shielded

Filter: Adjustable 1 to 99 seconds

additional damping to 90% step input

Temperature Input: Selectable Pt1000 or Pt100, automatic compensation

PHE-45P Performance

Specifications

Displayed Parameters:

Main Input: 0 to 14.00 pH;

Sensor Voltage: ±500 mV;

Loop Current: 4 to 20 mA;

Sensor Temperature:

-10 to 110°C (14 to 230° F)

Main Parameter Range: 0 to 14.00 pH

Input Impedance: Greater than 1013 Ω

Repeatability: 0.1% of or better

Sensitivity: 0.05% of span

Non-Linearity: 0.1% of span

Stability: 0.1% of span

per 24 hours, non-cumulative

Warm-Up Time: 4 seconds to

rated performance

Supply Voltage Effects: ±0.05% span

Transmitter Response Time:

4 seconds to 90% of step input at

lowest setting

Temperature Drift:

Span or zero, 0.02% of span/°C

Sensor to Transmitter Distance:

914 m (3000') w/preamp,

9.1 m (30') w/o preamp

Order Online

omega.com

Over 100,000 Products Available!

D-X

omega.co.uk[®]

Your One-Stop Source for Process Measurement and Control!

Freephone 0800 488 488 | International +44(0) 161 777 6622 | Fax +44(0) 161 777 6622 | Sales@omega.co.uk

www.omega.co.uk



UNITED STATES

www.omega.com

1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca

Laval(Quebec)
1-800-TC-OMEGA

GERMANY

www.omega.de

Deckenfronn, Germany
0800-8266342

UNITED KINGDOM

www.omega.co.uk

Manchester, England
0800-488-488
+44-(0)161-777-6611

FRANCE

www.omega.fr

0800-466-342

BENELUX

www.omega.nl

0800-099-33-44



More than 100,000 Products Available!

• Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders, Relative Humidity Measurement Instruments, PT100 Probes, PT100 Elements, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples, Thermowells and Head and Well Assemblies, Transmitters, Thermocouple Wire, RTD Probes

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485, Ethernet and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Pressure Transmitters, Strain Gauges, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters