

Microprocessor-Based, pH and ORP Transmitters



For accurate measurements of pH and ORP, the model PHTX-692 and ORTX-692 transmitters provide local indication as well as a 4-20 mA output. The large PHTX-692 LCD can alternately indicate pH, temperature, the sensor's millivolt signal or the 4-20 mA output. The ORTX-692 measures ORP and provides a similar indication, except for pH. Each model requires only two wires, common for both output and power. No special cables are necessary. The isolated, dc current loop output features high noise immunity, permitting use of a simple twisted pair of wires. A single dc voltage power source can power multiple transmitters. The PHTX-692 uses either a 1000 ohm RTD or 300 ohm thermistor for automatic temperature compensation. Compatible sensors are described in this section.

When calibrating and configuring the instrument, clear, easily understood procedure messages will prompt the operator. Preprogrammed diagnostic messages flash automatically if system operating problems occur.

The isolated 4-20 mA instrument output eliminates problems caused by electrical interference. An output hold function can maintain the output during calibration or while configuring the instrument. A range expand feature allows the 4-20 mA output to represent a single pH unit or larger segment of the measuring scale (50 mV for model ORTX-692).

Both models are simple to operate. Using a watertight keypad, an operator configures and calibrates the system, and displays measurement data, without having to open the enclosure door.

Shown smaller than actual size.

Models PHTX-692
and ORTX-692

\$915

- ✓ Indicates pH, Temperature, mV and mA Output
- ✓ Single or Two-Point Automated Calibration
- ✓ Automatic Recognition of Pre-Selected Buffer Values
- ✓ Diagnostic Error Messages
- ✓ Surface Mount, NEMA 4X Enclosure
- ✓ Isolated

Model PHE-6510
with PHEH-65-10
Submersible Flat
Surface Electrode.
See page DD-50
for details



SPECIFICATIONS

Operational Display: 4½ digit LCD with measurement unit and setup variable identifiers, 7/8" high digits

MEASURING RANGE

Model PHTX-692: 0.00 to 14.00 pH, -500 to +500 mV and -10.0 to 110.0°C
 Model ORTX-692: -2000 to +2000 mV and -10.0 to +110.0°C

Temperature

Compensation: Automatic
 0-100°C (32-212°F),
 300 ohm thermistor or Pt
 1000 RTD, switch selectable

Pressing EXAM/CANCEL changes the display from its measurement mode to an examination mode to show setup variables and their stored values. Pressing the NEXT key displays the next setup variable. The arrow keys change the displayed value to a new value. ENTER stores the displayed value into memory, and EXAM/CANCEL returns the display to its normal measurement mode without changing the stored value.

An internal, non-rechargeable battery retains user-entered setup values for approximately one year (at 25°C) if the loop power is lost or turned off. The battery's one-year backup capacity can be used over a period of up to ten years.

A security lock feature prevents unauthorized tampering of stored configuration values. For convenience, an operator can display stored data and calibrate the instrument while keypad entry is locked. Special codes lock and unlock keypad entry operation.

A NEMA 4X enclosure houses the PHTX-692 and the ORTX-692. The corrosion-resistant polycarbonate case has a hinged door which easily opens or removes to facilitate installation and servicing. Four screw fasteners provide quick access, and a terminal strip compartment, with separate access and weatherproof seals, permits electrical hookup without exposing the instrument circuitry to the environment. Each model contains four stainless steel mounting tabs for surface mounting.

Ambient Conditions: -30 to 50°C (-22 to 122°F), 0 to 95% relative humidity, non-condensing

Sensor-to-Transmitter Distance:

3 meters (10 feet) maximum for direct connection of conventional combination electrode

Power Requirements: 16 to 40 volts dc (24 Vdc recommended)

Analog Output: Isolated 4 to 20 mA with output hold feature

Range Expand: The 4-20 mA output can be made to represent a one pH unit or larger segment of the measuring scale (50 mV for Model ORTX-692 transmitter)

Maximum Loop Load† (in series with ORTX-692, PHTX-692 and power supply):

With 24 Vdc supply, 400 ohms
 With 32 Vdc supply, 800 ohms
 With 36 Vdc supply, 1200 ohms

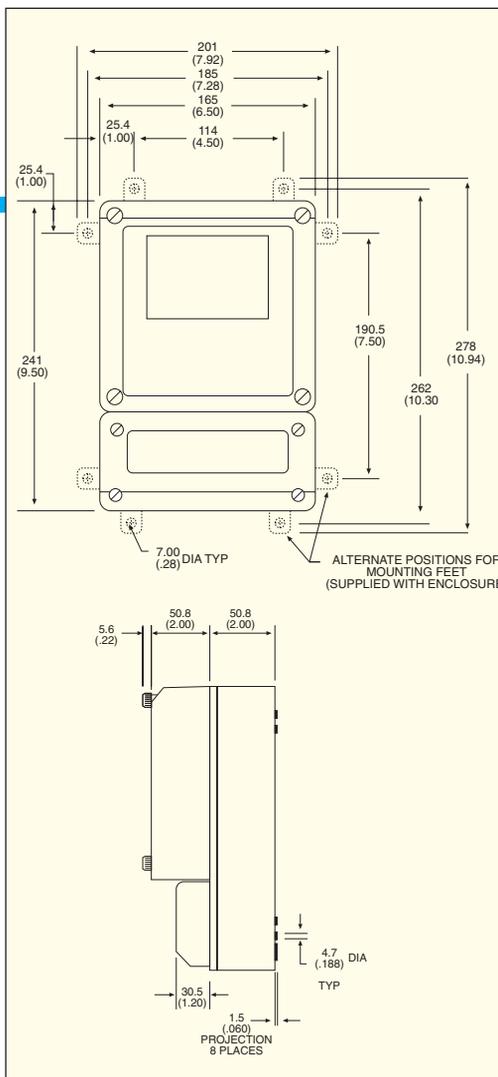
NOTE: For long cable runs, the resistance of the wire must be considered and may decrease maximum load capability.

† Not applicable when using barrier for intrinsic safety

Analyzer Performance (Electrical, Analog Output):

Sensitivity: 0.05% of span

Stability: 0.05% of span per 24 hrs., non-cumulative



Non-linearity: 0.05% of span

Repeatability: 0.1% of span or better

TEMPERATURE DRIFT

Zero: 0.01% of span per °C

Span: 0.01% of span per °C

Response Time: 1 second to 90% of value upon step change

MECHANICAL ENCLOSURE

General purpose—safe for Division 2; NEMA 4X. polycarbonate with two ½ inch conduit holes and four stainless steel mounting tabs (Carbon filled polycarbonate enclosure, silicone rubber seals, stainless steel fasteners)

Mounting Configurations: Surface mount; optional vertical or horizontal pipe mounting

Net Weight: 1.36 kg (3 lb) approximately

Dimensions: 278 H x 201 W x 107 mm D (10.94 x 7.92 x 4.22")

MOST POPULAR MODELS HIGHLIGHTED!

| To Order (Specify Model Number) | | |
|---------------------------------|-------|--------------------------|
| Model | Price | Description |
| PHTX-692 | \$915 | Two-Wire pH Transmitter |
| ORTX-692 | 915 | Two-Wire ORP Transmitter |

Ordering Example: PHTX-692 two wire pH transmitter, \$915.

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.

UNITED KINGDOM

www.omega.co.uk

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

CANADA

www.omega.ca

Laval(Quebec)
1-800-TC-OMEGA

FRANCE

www.omega.fr

0800-466-342

GERMANY

www.omega.de

Deckenfronn, Germany
0800-8266342

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