



# GAS & SPECIALTY SENSORS

## PH OR ORP TRANSMITTER

### 50000 PH & ORP SERIES

#### DESCRIPTION

The **Burkert 50000 pH and ORP transmitter** is a compact device designed for measuring the pH or oxidation-reduction potential (ORP) in clean liquids or liquids that may have low conductivity. The transmitter consists of a replaceable standard 120 mm pH or ORP probe screwed in a probe holder with integrated Pt1000 temperature sensor.

This assembly is then mated to an enclosure containing the electronic module and a removable display for a quick and easy installation. The pH/ORP transmitter can operate independent of the display, but it will be required for programming the transmitter and also for visualizing the measured and processed data.

The **50000 Standard** is available with either two transistors and one 4-20 mA output or two transistors and two 4-20 mA outputs. The **50000 Neutrino** Series is a cost effective less featured product measuring pH and ORP but with one 4-20 mA output and is not available with an LCD display.

**Principles of Operation:** The 50000 device can be used as a pH or a ORP transmitter according to the probe version mounted into the holder. The pH or redox probe is a glass membrane with variable selectivity according to the pH or the redox, which must be calibrated with buffer solution before the installation of the transmitter into the pipe.

When a pH probe is immersed into the solution a difference in potential is formed due to ions (H+) between the glass membrane and the solution. This difference in potential measured in relation to a reference electrode is directly proportional to the pH value.

NEW!

**bürkert**  
Fluid Control Systems



559168  
w/ 561025



559168

UL US

CE



560693

#### FEATURES

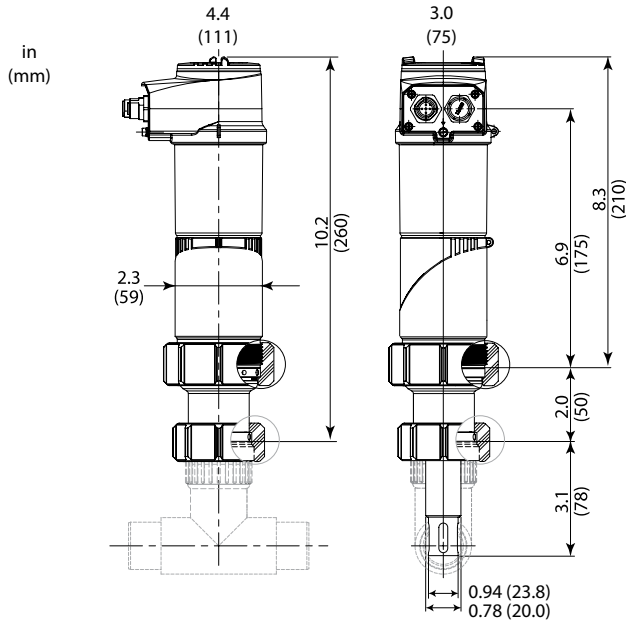
- **Programmable outputs:** two transistor and single or dual analog 4-20 mA
- **Removable backlighted display**
- **Universal process connection**
- **Compatible with pH/ ORP probes**
- **Diagnostic functions**
- **Additional material construction:** PVC or PVDF

#### SPECIFICATIONS

<b>Supply Voltage</b>	14-36 VDC reversed polarity protection	<b>Fluid Pressure Limit</b>	0 to 87 PSI (0 to 6 bar)
<b>Supply Current</b>	With Sensor: ≤ 1 A (with transistor loads) analog output: ≤ 25 mA (at 14 VDC without transistor loads, with current loop)	<b>Maximum Pressure</b>	58 psi (4 bar)
<b>Signal Output Standard</b>	Switch: Transistor Current: 4-20 mA Current: 4-20 mA	<b>Media Compatibility</b>	
<b>Neutrino</b>		<b>pH</b>	Contaminated fluids (viscous, suspended solids, small volumes)
<b>Maximum Output</b>		<b>ORP</b>	Clean (cooling-water, waste water or slightly contaminated)
<b>Impedance mA</b>	610 Ω at 24 V DC	<b>Media Temperature Range</b>	
<b>Accuracy</b>		<b>pH</b>	32° to 176°F (0° to +80°C) 14° to 122°F (-10° to +50°C)
<b>pH</b>	±0.02 pH or 0.5 mV	<b>Operating Humidity</b>	≤ 85%, without condensation
<b>ORP</b>	± 3 mV temperature: ±1°C (1.8°F)	<b>Operating Temperature Transmitter</b>	14° to 140°F (-10° to +60°C)
<b>Resolution</b>		<b>Probe (Flatrobe)</b>	32° to 140°F (0° to +60°C)
<b>pH</b>	0.01 pH or 0.1 m	<b>Enclosure Rating Standard</b>	IP65 and IP67 with M12 cable plug mounted and cover tightened also includes NEMA 4X and NEMA 6P
<b>ORP</b>	1 mV	<b>Neutrino</b>	
<b>Temperature</b>	0.1°C (0.18°F)	<b>Dimensions</b>	12"H x 3"W x 4.4"D (30.5 x 7.6 x 11.2 cm)
<b>Measurement Range</b>		<b>Approvals</b>	UL file E27737, CAN/CSA-C22
<b>pH</b>	-2 to 16 pH or -580 to +580 mV	<b>Warranty</b>	1 year
<b>ORP</b>	-2000 to +2000 mV		
<b>Temperature</b>	-40 to +130°C (-40 to 266°F)		
<b>Display</b>	Grey dot matrix 128x64 with backlighting		
<b>Response Time</b>	150 ms (10 to 90%)		
<b>Wiring Terminations</b>	Single analog output: 1x 5-pin M12 male fixed connector		

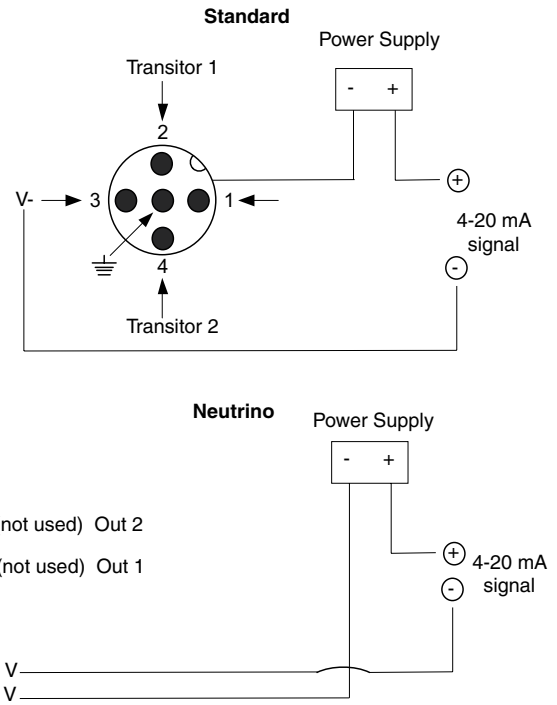


### DIMENSIONS



**Installation:** The 50000 series pH/ORP transmitter can be installed into 560693 Tee. Install it in a vertical position with an angle no greater than 75° from the vertical center line.

### WIRING



### ORDERING INFORMATION

559168  
559634  
560693  
917116  
561025

#### Parts needed for unit with display and single 4-20 mA and two transistors

Display programming module  
Standard pH transmitter, PVC mounting nut  
1 in NPT mounting adapter tee  
Electrical plug  
pH probe 0 to 14 pH

**For ORP, order 561027 probe instead of pH probe listed above**

562557  
560693  
917116  
561025

#### Parts needed for unit without display and single 4-20 mA

Neutrino pH transmitter, PVC mounting nut  
1 in NPT mounting adapter tee  
Electrical plug  
pH probe 0 to 14 pH

**For ORP, order 561027 probe instead of pH probe listed above**

### RELATED PRODUCTS

561228  
561232

SO22 threaded adapter for use with threaded tank or pipe, 1 1/4" NPT, PVC-U/FKM, EPD  
SO22 welded adapter for use directly on a pipe, Stainless steel/FKM, EPD

### ACCESSORIES

418540  
418541  
418543  
418555  
418557  
560949  
DCP-1.5-W  
DCPA-1.2

Buffer solution, 500 ml, pH = 4  
Buffer solution, 500 ml, pH = 7  
Buffer solution, 500 ml, pH = 10  
Buffer solution, 500 ml, ORP = 475 mV  
Storage solution for probes (KCl 3M), 500 ml  
Cleaning solution set for probes, 3x 500 ml  
Power supply, 24 VAC IN to 24 VDC OUT  
Power supply, 120 VAC IN to 24 VAC/24 VDC OUT

### PAGE

995  
994