

# Signet 2250 Submersible Hydrostatic Pressure Sensor For Level and Depth Control



Blind Transmitter or Digital (S<sup>3</sup>L) Sensor

The Signet 2250 Hydrostatic Level Sensor for level and depth control has a one-piece injection molded PVDF body and ceramic diaphragm for superior compatibility in corrosive liquids. Utilizing hydrostatic pressure, the 2250 disregards false level signals from steam vapors, foam or any other debris on the liquid surface. Two pressure ranges allow for optimal resolution matched to your sensing needs. Solid state circuitry eliminates drift (no internal potentiometers).

These sensors are available with a proprietary digital (S<sup>3</sup>L) output, or 4 to 20 mA output. The extended cable and capillary tubing with the union connection and a customer supplied conduit, allow submersion in process vessels.

## Features

- Level and depth measurement
- 4 to 20 mA or digital (S<sup>3</sup>L) output
- Flush ceramic diaphragm
- Easy submersible installation
- Choice of two pressure ranges
- Standard union connection and extended cable and capillary tubing (10 m)



## Applications

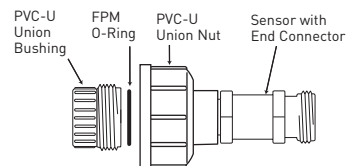
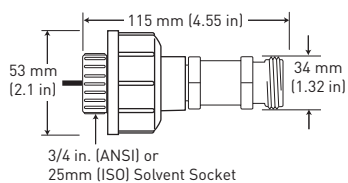
- Inventory Management
- Storage Tank Monitoring
- Neutralization Tanks
- Plating Lines
- Waste Sumps
- Clarifiers
- Overflow Protection

# Specifications

| General                           |  |  |
|-----------------------------------|--|--|
| Output                            | Digital (S <sup>3</sup> L) or 4 to 20 mA   |  |
| Accuracy                          | ±1% of full scale  |  |
|                                   | -XU  | 0.001 psi  |
|                                   | -XL  | 0.01 psi   |
| Response Time                     | <100 ms  |  |
| Wetted Materials                  |  |  |
| Union and Union Bushing           | PVC-U  |  |
| Sensor Housing                    | PVDF   |  |
| Diaphragm                         | Ceramic  |  |
| Diaphragm Seal                    | FPM  |  |
| Electrical                        |  |  |
| Power Requirements                |  |  |
|                                   | Digital (S <sup>3</sup> L)   | 5 to 6.5 VDC <1.5 mA (power supplied by the 8250, 8450 and 8900) |
|                                   | 4 to 20 mA   | 12 to 24 VDC ±10%, regulated                                     |
| Cable Length                      | 10 m (32.8 ft)   |  |
| Cable Type                        | 3 cond. plus shield, 22AWG, PVC jacketed, Blk/Red/White/Shld with capillary tube   |  |
| Digital (S <sup>3</sup> L) Output | Serial ASCII, TTL level 9600 bps.  |  |
|                                   | Reverse polarity and short circuit protected.                                      |  |
| 4 to 20 mA Output                 |  |  |
| Accuracy                          | ±32 µA   |  |
| Resolution                        | <5 µA  |  |
| Span                              | 4 to 20 mA factory calibrated to operating ranges shown below                      |  |
| Max. Loop Impedance               | 100 Ω @ 12 V   |  |
|                                   | 325 Ω @ 18 V   |  |
|                                   | 600 Ω @ 24 V   |  |
| Max. Temperature/Pressure Rating  |  |  |
| Operating Temperature             | 15 °C to 85 °C   | 5 °F to 185 °F   |
| Storage Temperature               | -20 °C to 100 °C   | -4 °F to 212 °F  |
| Operating Pressure                | -XU: 0 to 0.7 bar (0 to 10psig)  |  |
|                                   | -XL: 0 to 3.4 bar (0 to 50 psig)   |  |
| Proof Pressure                    | -XU: 1.4 bar (20 psig)   |  |
|                                   | -XL: 5.2 bar (75 psig)   |  |
| Burst Pressure                    | 82 bar (1,200 psig)  |  |
| Standards and Approvals           |  |  |
|                                   | CE   |  |
|                                   | RoHS compliant   |  |
|                                   | China RoHS   |  |
|                                   | Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management |  |

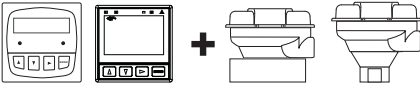
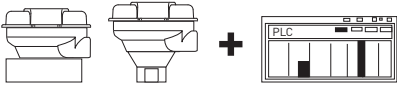


See Temperature and Pressure graphs for more information.

## Dimensions



## Submersible Installation

System Overview

| Field Mount - Pipe, Tank, Wall   | 4 to 20 mA Input  |
|--|---|
| Signet Instruments<br>8250    8450    8900    9900<br>with 3-8050-1 Universal Mount kit or<br>3-8052-1 Integral Mount Kit      | 3-8050-1 Universal Mount kit or<br>3-8052-1 Integral Mount Kit<br>with a Customer Supplied Programmable<br>Logic Controller |
|   |   |
| Customer supplied pipe extension or conduit<br>with pipe assembly**  |   |
|   |   |
| <b>Signet 2250 Submersible Hydrostatic Pressure Sensor with union connection, extended cable and capillary tubing (10 m)**</b> |   |
|   |   |
| All sold separately  |   |

\*Refer to the Signet Submersion brochure located in the K-Factors Fittings and More Kit (3-0000-709) for installation suggestions and options.

\*\* Cable must be exposed to the atmosphere

### Ordering Notes

- 1) Instrument is sold separately. The following instrument part numbers are compatible with the 2250: 8250, 8450, 8900, 9900.
- 2) Union mount installs into pipe w/end connector and union nut.
- 3) Refer to the Signet Submersion brochure located in the K-Factors Fittings and More Kit (3-0000-709) for installation suggestions and options.

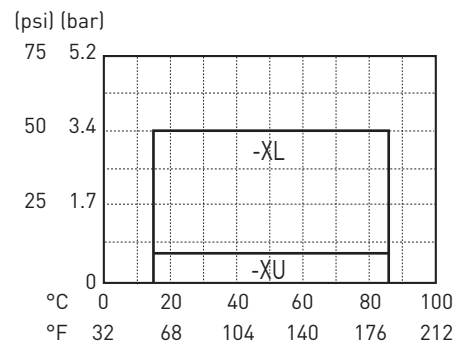
### Pressure/Level ranges\*

3-2250-XU    0 to 10 psi = 0 to 7.03 m = 0 to 23.06 ft

3-2250-XL    0 to 50 psi = 0 to 35.15 m = 0 to 115.32 ft

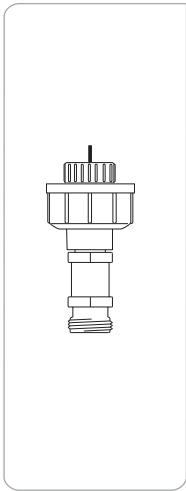
\*Ranges calculated using specific gravity of water. Maximum ranges may vary for other liquids.

### Operating Temperature/Pressure Graphs



Please refer to Wiring, Installation, and Accessories sections for more information.

## Ordering Information



| Mfr. Part No.   | Code               | Sensor Output                              | Operating Pressure     |
|---|--------------------|--|------------------------|
| Hydrostatic Level Sensor with 1/2 in. union connector |                    |  |                        |
| PVC Union connection - 3/4 in. pipe connection        |                    |  |                        |
| 3-2250-11L  | <b>159 001 241</b> | Digital (S <sup>3</sup> L), 10 m (32.8 ft) | 0 - 3.4 bar (0-50 psi) |
| 3-2250-11U  | <b>159 001 242</b> | Digital (S <sup>3</sup> L), 10 m (32.8 ft) | 0 - 0.7 bar (0-10 psi) |
| 3-2250-21L  | <b>159 001 247</b> | Current (4 to 20 mA), 10 m (32.8 ft)       | 0 - 3.4 bar (0-50 psi) |
| 3-2250-21U  | <b>159 001 248</b> | Current (4 to 20 mA), 10 m (32.8 ft)       | 0 - 0.7 bar (0-10 psi) |
| PVC Union connection - Metric pipe connector          |                    |  |                        |
| 3-2250-11U-1  | <b>159 001 478</b> | Digital (S <sup>3</sup> L), 10 m (32.8 ft) | 0 - 0.7 bar (0-10 psi) |
| 3-2250-11L-1  | <b>159 001 479</b> | Digital (S <sup>3</sup> L), 10 m (32.8 ft) | 0 - 3.4 bar (0-50 psi) |
| 3-2250-21U-1  | <b>159 001 482</b> | Current (4 to 20 mA), 10 m (32.8 ft)       | 0 - 0.7 bar (0-10 psi) |
| 3-2250-21L-1  | <b>159 001 483</b> | Current (4 to 20 mA), 10 m (32.8 ft)       | 0 - 3.4 bar (0-50 psi) |

## Accessories and Replacement Parts

| Mfr. Part No. | Code               | Description  |
|---------------|--------------------|--|
| 5523-0322     | <b>159 000 761</b> | Sensor cable (per ft), 3 cond. plus shield, 22 AWG   |
| 3-8052        | <b>159 000 188</b> | 3/4 in. Integral mounting kit  |
| 3-8052-1      | <b>159 000 755</b> | 3/4 in. NPT mount junction box with one liquid tight connector and cap with junction terminals |
| 3-8050        | <b>159 000 184</b> | Universal mount kit  |
| 3-8050-1      | <b>159 000 753</b> | Universal mount junction box   |
| 3-9000.392-1  | <b>159 000 839</b> | Liquid tight connector kit, NPT (1 connector)  |
| 3-9000.392-2  | <b>159 000 841</b> | Liquid tight connector kit, PG 13.5 (1 connector)  |
| 3-0250        | <b>159 001 538</b> | USB to digital (S <sup>3</sup> L) configuration/diagnostic tool                                |

3-2250.099 Rev B (10/11)

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