

# Signet 2450 Pressure Sensors



## Features

- Test certificate included
- 4 to 20 mA or digital (S<sup>3</sup>L) output
- Standard 3/4 in. NPT or 1/2 in. male union process connection
- One-piece injection molded PVDF body
- Flush ceramic diaphragm
- Easy installation
- Choice of three pressure ranges
- Pressure or level measurement

## Description

The 2450 Pressure Sensor has a one-piece injection molded PVDF body and ceramic diaphragm for superior compatibility in corrosive liquids. Three pressure versions allow for optimal resolution matched to your sensing needs. Solid state circuitry eliminates drift (no internal potentiometers). Built-in temperature compensation provides outstanding accuracy over wide temperature ranges.

These sensors are available with a proprietary digital output (S<sup>3</sup>L), or field-scalable 4 to 20 mA output. Dual-threaded ends allow submersion in process vessels, or in-line installation with conduit connection. Integral adapters (sold separately) may be used to create a compact assembly with a field mount version of the Signet 8250 Level or 8450 Pressure Transmitter.

## Applications

- Level or Depth Sensing
- HVAC
- Scrubber Systems
- Pump Protection
- Water Management
- Irrigation Systems
- Wastewater
- Chemical Processing
- Pressure Regulation/Monitoring



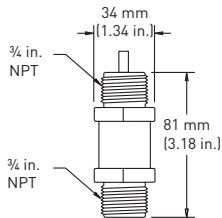
## System Overview

In-Line Installation				Submersible Installation*
<b>Panel Mount</b> Signet Instrument (sold separately) 8250 8450 8900 	<b>Pipe, Tank, Wall Mount</b> Signet Instrument (sold separately) 8250 8450 	<b>Integral Mount</b> Signet Instrument (sold separately) 8250 8450 	<b>4 to 20 mA Input</b> Chart Recorder OR Programmable Logic Controller 	<b>Panel, Pipe, Tank, Wall Mount</b> Signet 8350, 8450 or 8900 Instrument (sold separately) 
	Signet Universal Adapter Kit (3-8050) (sold separately) 	Signet Integral Adapter Kit (3-8052) (sold separately) 		Pipe extension or conduit with 3/4 in. FNPT threads** 
<b>Signet 2450 Pressure Sensor</b> 				<b>Signet 2450 Pressure Sensor*</b> 
In-Line Installation - Fittings (Customer supplied)				

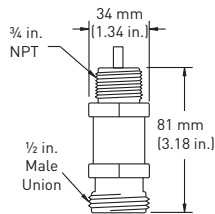
\* For pipe, tank or wall mount installations, user must use the Universal Adapter Kit (3-8050). An alternative to the Signet 2450 submersible is to use the Signet 2250 Hydrostatic Pressure Sensor.

\*\* Cable must be exposed to the atmosphere.

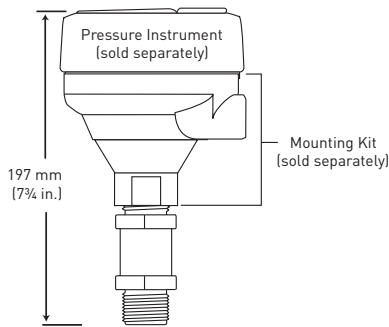
## Dimensions



**3-2450-1X, -2X, -5X**



**3-2450-3X, -4X, -7X**



**3-8250, 3-8450**

### Model 2450 Ordering Notes

Any sensor can be mounted with an instrument in an integral configuration by doing the following:

1. Order Integral adapter kit PN 3-8052 or 3-8052-1 (sold separately) to connect the instrument (sold separately) directly on to the sensor.
2. Order an instrument (sold separately). The following instrument part numbers are compatible with the 2450 for integral mounting: 3-8450-1, 3-8450-2, 3-8250-2
3. Union mount version installs into pipe w/end connector and union nut. See Installation and Wiring section for more information on parts required.

### Application Tips

- These sensors can also be used for tank level measurements.
- For submersible sensor mounting, always use a water tight conduit and a cable gland to prevent moisture intrusion.
- Cable end of sensor must be exposed to atmospheric pressure.
- To extend the cable, use a 3-conductor shielded cable & junction box.

### Rev A (3/09)

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## Specifications

### General

Output: Digital (S<sup>3</sup>L) or 4 to 20 mA

Accuracy:

- For all pressure ranges: ±1% of full scale @ 25 °C
- 0 to 10 psig: ±1% of reading when unit is field calibrated

Vacuum Range: 0 to -10 psig

Response Time: <100 ms

Sensing-End Connection:

- 3/4 in. NPT male thread
- 1/2 in. union male thread (requires end connector and union nut)

(See installation section for end connector and nut recommendation)

Cable-end connection:

3/4 in. NPT male thread

### Wetted Material

- Sensor housing: PVDF
- Diaphragm: Ceramic
- Diaphragm seal: FPM

### Electrical

Power Requirements:

- Digital (S<sup>3</sup>L): 4.5 to 6.5 VDC <1.5 mA
- 4 to 20 mA: 12 to 24 VDC ±10%, regulated

Cable Type:

3 cond. + shield, 22 AWG, PVC jacketed, Blk/Red/White/Shld

Cable Length:

- 4.6 m (15 ft)
- 15.2 cm (6 in.)

Digital (S<sup>3</sup>L) Output:

- Serial ASCII, TTL level 9600 bps.
- Reverse polarity and short circuit protected.

### Electrical (continued)

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 Temp.: -15 °C to 85 °C  
(5 °F to 185 °F)

Storage Temp.: -20 °C to 100 °C  
(-4 °F to 212 °F)

Operating Pressure:

- -XU: 0 to 0.7 bar (0 to 10 psig)
- -XL: 0 to 3.4 bar (0 to 50 psig)
- -XH: 0 to 17 bar (0 to 250 psig)

Proof Pressure:

- -XU: 1.4 bar (20 psig)
- -XL: 5.2 bar (75 psig)
- -XH: 20.7 bar (300 psig)

Burst Pressure: 82 bar (1,200 psig)

See Temperature and Pressure graphs for more information.

### Standards and Approvals

- CE
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

## Ordering Information

Sensor Part Number	
<b>3-2450</b>	Pressure Sensor
	Output, Process Connection and Cable Length - Choose One
-1	Digital (S <sup>3</sup> L), 3/4 in. male NPT, 4.6 m (15 ft) cable
-2	Digital (S <sup>3</sup> L), 3/4 in. male NPT, 15.2 cm (6 in.) cable used with 3-8052 or 3-8052-1 (sold separately)
-3	Digital (S <sup>3</sup> L), 1/2 in. male union, 4.6 m (15 ft.) cable
-4	Digital (S <sup>3</sup> L), 1/2 in. male union, 15.2 cm (6 in.) cable used with 3-8052 or 3-8052-1 (sold separately)
-5	Current (4 to 20 mA), 3/4 in. male NPT, 4.6 m (15 ft) cable
-7	Current (4 to 20 mA), 1/2 in. male union, 4.6 m (15 ft) cable
	Operating Pressure Range - Choose One
U	0 to 10 psi
L	0 to 50 psi
H	0 to 250 psi
<b>3-2450</b>	<b>-1 L</b> Example Part Number

Mfr. Part No	Code	Mfr. Part No	Code
3-2450-3U	<b>159 000 683</b>	3-2450-5L	<b>159 000 907</b>
3-2450-4U	<b>159 000 686</b>	3-2450-7L	<b>159 000 908</b>
3-2450-7U	<b>159 000 906</b>	3-2450-1H	<b>159 000 026</b>
3-2450-1L	<b>159 000 024</b>	3-2450-2H	<b>159 000 027</b>
3-2450-2L	<b>159 000 025</b>	3-2450-4H	<b>159 000 684</b>
3-2450-3L	<b>159 000 682</b>	3-2450-5H	<b>159 000 909</b>
3-2450-4L	<b>159 000 685</b>	3-2450-7H	<b>159 000 910</b>

## 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
3-9000.392-1	<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)