Signet 2450 Pressure Sensors

+GF+

3/4 in. NPT   1/2 in. union mount

Blind transmitter or digital (S³L) sensor

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).

These sensors are available with a proprietary digital (S³L) output, or field-scaleable 4 to 20 mA output. Dual-threaded ends allow in-line installation with conduit connection, or add the integral adapters to create a compact assembly with a field mount version of the Signet 8250 Level or 8450 Pressure Transmitter.

Features

- **Test certificate included**

- **4 to 20 mA or digital (S³L) output**

- **Standard ¾ in. NPT or ½ 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**

CE   LEAD FREE (Pb) RoHS COMPLIANT

Applications

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

Specifications

General	
Output	Digital (S^{3}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
	Response Time	<100 ms
	Sensing-End Connection	¾ in. NPT male thread
		½ in. union male thread (requires end connector and union nut)
		(See installation section for end connector and nut recommendation)
Cable-end connection		¾ in. NPT male thread

Wetted Materials	
Sensor Housing	PVDF
Diaphragm	Ceramic
Diaphragm Seal	FPM

Electrical		
Power Requirements		
	Digital (S^{3}L)	5 to 6.5 VDC <1.5 mA
	4 to 20 mA	12 to 24 VDC ±10%, regulated
Cable Length	4.6 m	15 ft.
	15.2 cm	6 in.
Cable Type	3 cond. + shield, 22 AWG, PVC jacketed, Blk/Red/White/Shld	
Digital (S^{3}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	

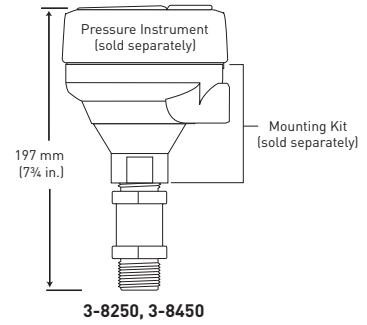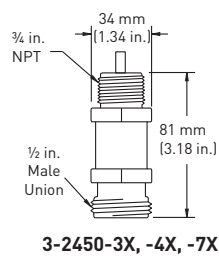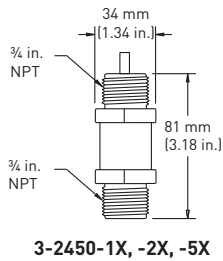| Max. Temperature/Pressure Rating		
Operating Temperature	15 ˚C to 85 ˚C	5 ˚F to 185 ˚F
Storage Temperature	-20 ˚C to 100 ˚C	-4 ˚F to 212 ˚F
Operating Pressure		
-XU	0 to 0.7 bar	0 to 10psig
-XL	0 to 3.4 bar	0 to 50 psig
-XH	0 to 17 bar	0 to 250 psig
Vacuum Range		
-XU	-0.1 to 0.7	-1.5 to 10 psi
-XL	-0.41 to 3.4 bar	-6 to 50 psi
-XH	-0.96 to 17.2 bar	-14.6 to 250 psi
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

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

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

34 mm (1.34 in.)
¾ in. NPT
81 mm (3.18 in.)
¾ in. NPT

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

34 mm (1.34 in.)
¾ in. NPT
81 mm (3.18 in.)
½ in. Male Union

3-8250, 3-8450

Pressure Instrument (sold separately)
Mounting Kit (sold separately)
197 mm (7¾ in.)

System Overview

Panel Mount	Field Mount - Pipe, Tank, Wall	4 to 20 mA input	Integral Mount
Signet Instruments 8250 8900 8450 9900	Signet Instruments 8250 8450 9900 with 3-8050 Universal Mount Kit	Customer Supplied Chart Recorder or Programmable Logic Controller	Signet Instruments 8250 8450 9900 with 3-8052 Integral Mount Kit

OR PLC

Signet 2450 Temperature Sensor*

All sold separately

In-Line Installation - Fittings customer supplied

Submersible Installation - Customer supplied pipe extension or conduit with 3/4 in. FNPT threads and pipe assembly**

* An alternative to the Signet 2450 submersible is to use the Signet 2250 Hydrostatic Pressure Sensor.

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

Operating Temperature/Pressure Graphs

Note:

The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.
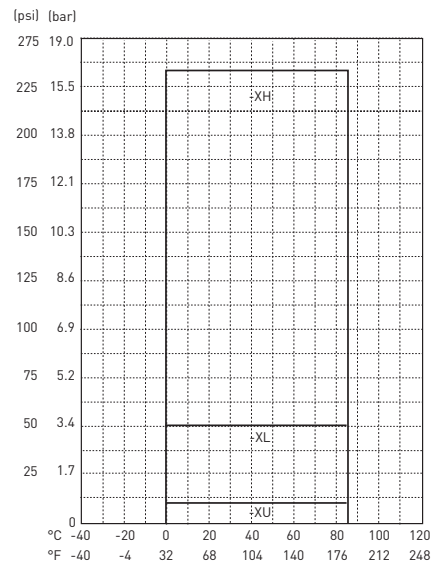
Application Tips

- These sensors can also be used for tank level measurements.
- Place a ball valve between tank and 2450 sensor for maintenance ease.
- Back end of sensor must be exposed to atmospheric pressure.
- To extend the cable, use a 3-conductor shielded cable & junction box.
- For submersible sensor mounting, always use the 3-2250 Submersible Hydrostatic Pressure Sensor.

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.

Ordering Information
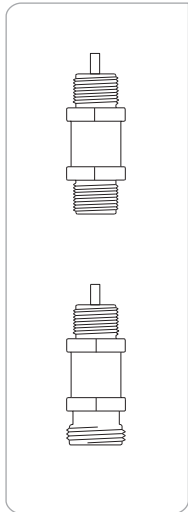
Mfr. Part No.	Code	Output	Process Connection
Pressure Sensor with 4.6 m (15 ft) cable			
Operating Pressure Range 0 to 10 psi			
3-2450-3U	**159 000 683**	Digital (S³L)	½ in. male union
3-2450-7U	**159 000 906**	Current (4 to 20 mA)	½ in. male union
Operating Pressure Range 0 to 50 psi			
3-2450-1L	**159 000 024**	Digital (S³L)	¾ in. male NPT
3-2450-3L	**159 000 682**	Digital (S³L)	½ in. male union
3-2450-5L	**159 000 907**	Current (4 to 20 mA)	¾ in. male NPT
3-2450-7L	**159 000 908**	Current (4 to 20 mA)	½ in. male union
Operating Pressure Range 0 to 250 psi			
3-2450-1H	**159 000 026**	Digital (S³L)	¾ in. male NPT
3-2450-3H	**159 000 681**	Digital (S³L)	½ in. male union
3-2450-5H	**159 000 909**	Current (4 to 20 mA)	¾ in. male NPT
3-2450-7H	**159 000 910**	Current (4 to 20 mA)	½ in. male union

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
5523-0322	**159 000 761**	Sensor cable (per ft), 3 cond. plus shield, 22 AWG
3-8052	**159 000 188**	¾ in. Integral mounting kit
3-8052-1	**159 000 755**	¾ in. NPT mount junction box with one liquid tight connector and cap with junction terminals
3-9000.392-1	**159 000 839**	Liquid tight connector kit, NPT (1 connector)
3-9000.392-2	**159 000 841**	Liquid tight connector kit, PG 13.5 (1 connector)
3-0250	**159 001 538**	USB to digital (S³L) configuration/diagnostic tool