

# Signet 2350 Temperature Sensor



## Features

- 4 to 20 mA or digital (S<sup>3</sup>L) output
- Standard 3/4 in. NPT process connection
- One-piece injection molded PVDF body
- PT-1000 platinum RTD in extended tip for quick response
- Easy installation
- Threaded for in-line or submersible installation

## Application

- Plating Bath Temperature Control
- Heat Exchange Monitor
- R.O. and D.I. System Monitor
- Hot/Cold Mixing System Monitor
- Data Acquisition
- Cooling Loops
- Effluent Monitoring
- HVAC
- Chemical Processing

## Description

The Signet 2350 Temperature Sensor has a one piece injection molded PVDF body that is ideal for use in high purity applications. It also outlasts metal sensors in aggressive liquids and eliminates the need for costly custom thermowells. These sensors are available with a proprietary digital output (S<sup>3</sup>L) or field-scaleable 4 to 20mA out-

put. Dual threaded ends (3/4 in. NPT) allow submersion in process vessels, or in-line installation with conduit connection. An integral adapter kit (sold separately) may be used to create a compact assembly with field mount versions of the Signet 8350 Temperature Transmitter.



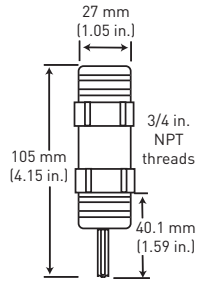
## System Overview

In-Line Installation				Submersible Installation*
<b>Panel Mount</b> Signet 8350 or 8900 Instrument (sold separately) 	<b>Pipe, Tank, Wall Mount</b> Signet 8350 or 8900 Instrument (sold separately) 	<b>Integral Mount</b> Signet 8350 or 8900 Instrument (sold separately) 	<b>4 to 20 mA Input</b> Chart Recorder OR Programmable Logic Controller 	<b>Panel, Pipe, Tank, Wall Mount</b>  Signet 8350 or 8900 Instrument Pipe extension or conduit with 3/4 in. FNPT threads 
<b>Signet 2350 Temperature Sensor</b> 	<b>Signet 2350 Temperature Sensor</b> 	<b>Signet 2350 Temperature Sensor</b> 	<b>Signet 2350 Temperature Sensor</b> 	<b>Signet 2350 Temperature Sensor</b> 
Fittings - Customer supplied				

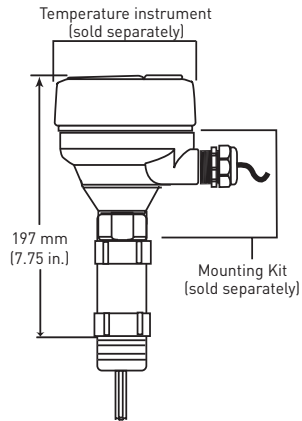
\* For submersible pipe, tank or wall mount installations, user must use the Universal Adapter Kit (3-8050).



## Dimensions



2350-X



### Model 2350

#### Ordering Notes:

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

- 1) Order Integral adapter kit 3-8052 (sold separately) to connect the instrument (sold separately) directly onto the sensor.
- 2) Order an instrument (sold separately). The following instrument part numbers are compatible with the 2350 for integral mounting: 3-8350-1, 3-8350-2

#### Application Notes:

- For submersible sensor mounting, always use a water tight conduit and a cable gland to prevent moisture intrusion.
- To extend the cable, use a 3-conductor shielded cable and junction box.

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

## Specifications

### General

Output: Digital (S<sup>3</sup>L) output or 4 to 20mA  
 Accuracy:  $\pm 0.5^{\circ}\text{C}$  ( $\pm 0.9^{\circ}\text{F}$ )  
 Response Time,  $\tau$ : 10 secs.  
 Repeatability:  $\pm 0.1^{\circ}\text{C}$  ( $\pm 0.2^{\circ}\text{F}$ )  
 Resolution:  $0.01^{\circ}\text{C}$  ( $0.02^{\circ}\text{F}$ )  
 Sensing-end connection:  
 3/4 in. NPT male thread  
 Cable-end connection:  
 3/4 in. NPT male thread

**Wetted Material:** PVDF

### Electrical

Power Requirements:

Type of output is automatically selected when appropriate power is applied.

- Digital (S<sup>3</sup>L): 5 to 6.5VDC <1 .5mA
- 4 to 20mA: 9 to 26VDC

Cable Type:

PVC jacketed, 3-conductor with shield  
 22 AWG, Blk/Red/White/Shld

Cable Length:

- 4.6m (15 ft.)
- 15.2cm (6 in.); cable length can also be extended up to 121m (400 ft)

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

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

### Electrical (continued)

4 to 20mA Output:

- Accuracy:  $\pm 32\mu\text{A}$
- Resolution:  $<5\mu\text{A}$
- Span:  
 4 to 20mA factory calibrated  
 0°C to 100°C (32°F to 212°F)
- Max. Loop Impedance:  
 50  $\Omega$  @ 12V  
 325  $\Omega$  @ 18V  
 600  $\Omega$  @ 24V
- Update Rate:  $<100\mu\text{s}$

### Max. Temperature/Pressure Rating

Operating Temperature:

- In-line Mounting:  
 -10°C @ 16 bar to 100°C @ 7.5 bar  
 (14°F @ 232 psi to 212°F @ 108 psi)
- Submersible Mounting:  
 -10°C @ 16 bar to 85°C @ 7.5 bar  
 (14°F @ 232 psi to 185°F @ 108 psi)

Storage Temperature:

-55°C to 100°C (-67°F to 212°F)

Relative Humidity:

0 to 95% non-condensing

See Temperature and Pressure graphs for more information.

**Shipping Weight:** 0.151kg (0.33 lbs.)

### Standards & Approvals

- CE
- Immunity: EN 61326-2
- Emissions: EN55011
- Manufactured under ISO 9001:2000 for Quality and ISO 14001:2004 for Environmental Management

## Ordering Information

Sensor Part Number	
<b>3-2350</b>	Temperature Sensor
	Output and Cable Length - Choose one
-1	Digital (S <sup>3</sup> L) and 4.6m (15 ft.) cable
-2	Digital (S <sup>3</sup> L) and 15.2 cm (6 in.) cable for use with 3-8052 or 3-8052-1 (sold separately)
-3	Current (4 to 20 mA) and 4.6m (15 ft.) cable
<b>3-2350</b>	<b>-1 Example Part Number</b>

Mfr. Part No.	Code
3-2350-1	<b>159 000 021</b>
3-2350-2	<b>159 000 022</b>
3-2350-3	<b>159 000 920</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 piece)
3-9000.392-2	<b>159 000 841</b>	Liquid tight connector kit, PG 13.5 (1 piece)