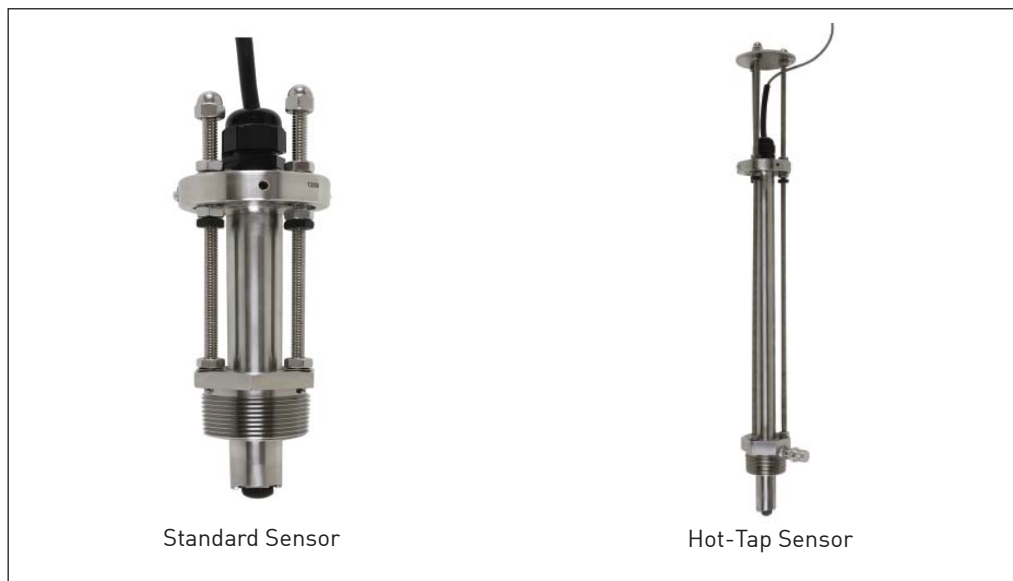


# Signet 2540 Stainless Steel High Performance Paddlewheel Flow Sensor



## Description

The Signet 2540 Paddlewheel Flow Sensor offers the strength and corrosion resistance of stainless steel for liquid applications with low velocity measurements. Unique internal circuitry eliminates the need for magnets in the process fluid, enabling flow measurement of 0.1 to 6 m/s (0.3 to 20 ft/s) while maintaining the advantages of insertion sensor design. Rulon® B (Fluoroloy B/PTFE) bearings and Tungsten Carbide pin provide exceptional wear resistance. The Signet 2540 offers field replaceable electronics and transient

voltage suppression (TVS) to provide greater immunity to large voltage disturbances (i.e. lightning) sometimes encountered in field wiring. Sensors can be installed in DN40 to DN600 (1½ to 24 inch) pipes using the 1½ inch or ISO 7/1-R 1.5 threaded process connection. The sensors are also offered in a hot-tap configuration with a bleed valve service without process shutdown in pipes up to DN900 (36 in.). Both styles of sensors must be used in full pipes and can be used in low pressure systems.

## Features





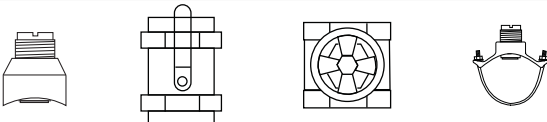
- Operating range 0.1 to 6 m/s (0.3 to 20 ft/s)
- Field replaceable electronics
- Non-magnetic RF detection
- Standard NPT or ISO process connections
- Hot-tap versions for installation/service without system shutdown
- For pipe sizes up to DN900 (36 in.)
- Adjustable sensor - one size for entire pipe range

- 7.6 m (25 ft) cable

## Applications

- HVAC
- Turf Irrigation
- Cooling Systems
- Filtration Systems
- Water Distribution
- Leak Detection
- Pump Protection
- Clarified Effluent Totalization
- Ground Water Remediation
- Gravity Feed Line

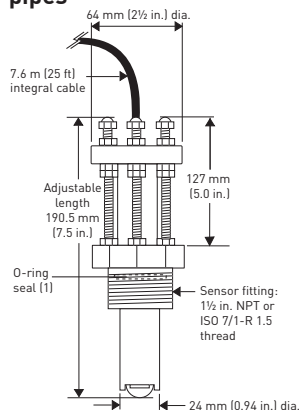
## System Overview

<b>Panel Mount</b> Signet Flow Instrument (sold separately) 5075    8550 5500    8900 5600 	<b>Pipe, Tank, Wall Mount</b> Signet Flow Instrument (sold separately) 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 
<b>Signet 2540 Standard or Hot-tap (not shown) Flow Sensor</b> 	
<b>Customer Supplied Fittings</b> 	

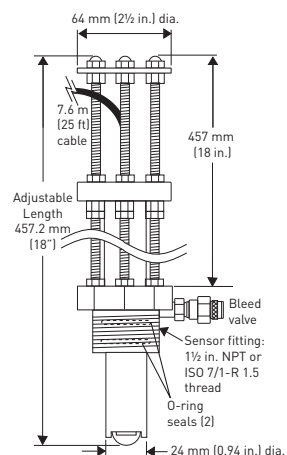


## Dimensions

### 2540 High Performance Flow Sensor for 1½ to 24 in. pipes



### 2540 Hot-Tap for 1½ to 36 in. pipes



### Model 2540

#### Ordering Notes

Installation fittings and Hot-Tap valves are customer supplied.

#### Application Tips

- For systems with components of more than one material, the maximum temperature/pressure specification must always be referenced to the component with the lowest rating.
- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments.
- Sensor electronics can be easily replaced by 3-2541.260-1 or 3-2541.260-2.

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

3-2540.099 Rev B (01/10)

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## Specifications

### General

Operating Range:  
0.1 to 6 m/s (0.3 to 20 ft/s)

Pipe size range:

- Standard Version:  
DN40 to DN600 (1½ to 24 in.)
- Hot-Tap Version:  
DN40 to DN900 (1½ to 36 in.)

Sensor Fitting Options:

- 1½ in. NPT threads
- ISO 7/1-R 1.5 threads

Linearity: ±1% of full range

Repeatability: ±0.5% of full range

Min. Reynolds Number Required: 4500

### Wetted Materials

- Body: 316 stainless steel (1.4401)
- Fitting: 316 stainless steel (1.4401)
- Fitting O-rings: FPM, optional EPR (EPDM)
- Rotor: 17-4 SS Alloy
- Rotor Pin:  
Tungsten Carbide GRP 1 (standard)  
stainless steel (optional)
- Retainers (2): 316 stainless steel (1.4401)
- Rotor Bearings (2): Rulon® B  
(Fluoroloy B/PTFE)

### Electrical

Frequency: 15 Hz per ft/s nominal

Power: 5 to 24 VDC ±10%,  
regulated, 1.5 mA max.

### Electrical continued

Output Type: Open collector, sinking,  
max 10.0 mA

Cable Length: 7.6 m (25 ft), can be  
extended up to 300 m  
(1,000 ft)

Cable Type: 2-conductor twisted-pair  
with shield, 22AWG

### Max. Temperature/Pressure Rating

- Sensor with standard FPM sensor  
fitting O-rings:  
17 bar @ 82 °C (250 psi @ 180 °F)
- Sensor with optional EPR (EPDM)  
sensor fitting O-rings:  
17 bar @ 100 °C (250 psi @ 212 °F)

See Temperature and Pressure graphs  
for more information.

Operating Temperature:  
-18 °C to 100 °C (0 °F to 212 °F)

### Shipping Weight



3-2540-1/-2/-1S/-2S: 1.79 kg 3.9 lb

3-2540-3/-4/-3S/-4S: 2.15 kg 4.7 lb

### Standards and Approvals

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

## Ordering Information

Sensor Part Number			
3-2540	Stainless Steel High Performance flow sensor with removable electronics		
	Mounting Option - Choose One		
	-1	1½ inch NPT thread	
	-2	1½ inch ISO thread	
	-3	1½ inch NPT thread, Hot-Tap design*	
	-4	1½ inch ISO thread, Hot-Tap design*	
		Rotor Pin Material	
		-	Tungsten Carbide
-S		Stainless Steel	
3-2540	-1	Example Part Number	

\*Must use 3-1500.663 Hot-Tap installation tool (ordered separately)

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2540-1	198 840 035	3-2540-1S	159 001 501
3-2540-2	198 840 036	3-2540-2S	159 001 502
3-2540-3	198 840 037	3-2540-3S	159 001 503
3-2540-4	198 840 038	3-2540-4S	159 001 504

## Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-1500.663	198 820 008	Hot-Tap Installation Tool (see Installation for more info)
1220-0021	198 801 186	O-ring, FPM (2 required per sensor)
1224-0021	198 820 006	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	198 820 007	O-ring, FFPM (2 required per sensor)
3-2540.320	198 820 040	Rotor kit, 2540 Peek Bearing (old version)
3-2540.321	159 000 623	Rotor kit, 2540 Tungsten Carbide Pin (new version since January 1, 2000)
3-2540.322	159 000 864	Rotor kit, stainless steel pin and rotor
P52504-3	159 000 866	Rotor pin, Tungsten Carbide
P52504-4	159 000 867	Rotor pin, 316 SS
P52503	198 820 013	Bearing, Rulon® B (Fluoroloy B/PTFE)
P52527	159 000 481	Retainers, SS (1.4401)
3-2541.260-1	159 000 849	Standard replacement electronics module
3-2541.260-2	159 000 850	Hot-Tap replacement electronics module
5523-0222	159 000 392	Cable (per foot), 2 cond. w/shield, 22 AWG
P51589	159 000 476	Conduit adapter kit
P31934	159 000 466	Conduit cap