

# NEW! Signet 2537 Paddlewheel Flow Sensor



## Features

- Digital (S<sup>3</sup>L), or 4 to 20mA outputs, or Flow Switch, or Pulse output (multi-function)
- Allows for up to six sensors to Signet 8900 Controller
- Low flow capabilities down to 0.1m/s (0.3 ft/s)
- Polypropylene or PVDF wetted materials
- Installs into pipe sizes DN 15 to DN 200 (0.5 to 8 in.)
- Built-in user interface for on-site configuration
- Low power and high resolution

## Description

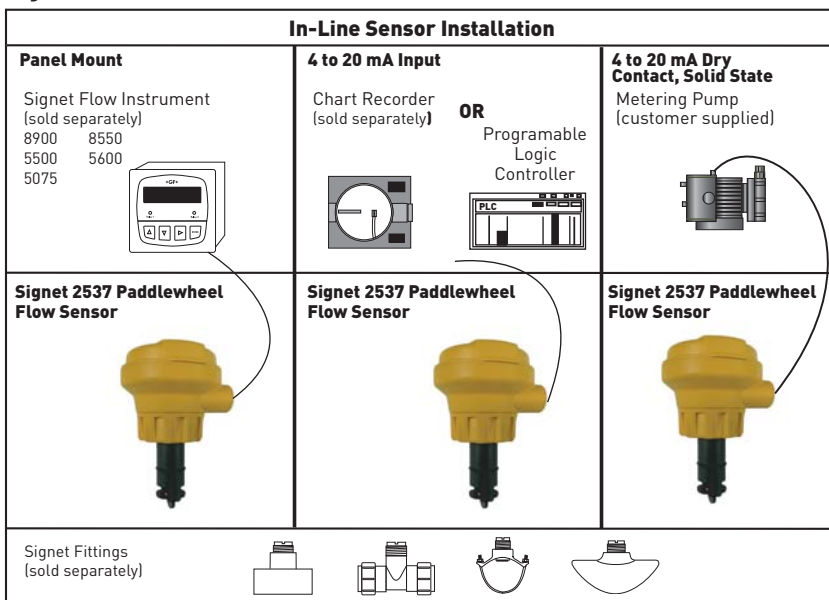
The Signet 2537 Flow Sensor is the next generation in fluid measurement technology from the inventor of the original paddlewheel flowmeter. This new sensor is an improvement on what's already an industry standard. It has the added functionality of various output options including flow switch, multi-functional pulse divider, digital (S<sup>3</sup>L) or 4 to 20mA. Additionally, it offers low flow, low power and high resolution and can be configured on-site directly through the built-in user interface.

Installation is simple because the Signet 2537 utilizes the same fittings as the popular Signet 515 and 2536 Paddlewheel Sensors and fits into pipe sizes ranging from DN15 to DN200 (0.5 to 8 inches). Available in Polypropylene and PVDF, it is ideal for a variety of applications including chemical processing, water and wastewater monitoring and scrubber control.

## Applications

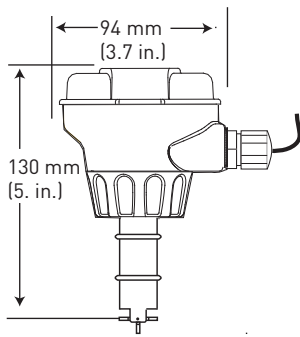
- Process Flow Monitoring
- Pump Protection
- Pure Water Production
- Filtration Systems
- Chemical Production
- Reverse Osmosis
- Demineralization/Regeneration
- Fume Scrubbers
- Cooling Towers
- Proportional metering pump

## System Overview

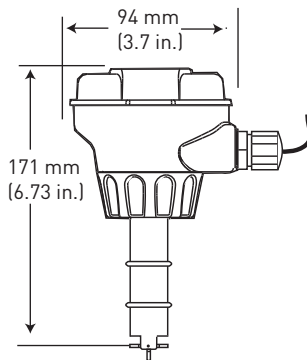


## Dimensions

### 2537 Paddlewheel Flowmeter for ½ in. to 4 in. pipe



### 2537 Paddlewheel Flowmeter for 5 to 8 in. pipe



## Specifications

### General

Input Frequency Range: 1 Hz to 1000 Hz

Operating Range:

0.1 m/s to 6 m/s (0.3 ft/s to 20 ft/s)

Linearity:

±1% of max. range @ 25°C (77°F)

Repeatability

±0.5% of max. range @ 25°C (77°F)

System Response:

100 ms update rate nominal

Operating Range: 0.3 to 20 ft/s

### Wetted materials:

- Sensor body:
  - P0,-P1: Polypropylene
  - TO: PVDF
- O-ring: FPM
- Rotor Pin:
  - P0,-P1: Titanium
  - TO: PVDF
- Rotor:
  - P0,-P1: Black PVDF
  - TO: PVDF

### Electrical

Pulse, Flow Switch

- With dry-contact relay:
  - 24 VDC nominal
  - (21.6 VDC min. to 26.4 VDC max.)
  - 30 mA max current
- With solid-state relay:
  - 5 to 24 VDC nominal
  - (5.0 VDC min to 26.4 VDC max.)
  - 30 mA max current
- Digital (S<sup>3</sup>L):
  - 5 VDC nominal
  - (5.0 VDC min to 6.5 VDC max.)
  - 3 mA max current
- 4 to 20 mA:
  - 12 VDC to 32 VDC nominal
  - (10.8 VDC min to 35.2 VDC max.)
  - 21 mA max current
- Reverse Polarity and short circuit protected: Up to 40V, 1 hour
- Over-voltage protection: > 40 VDC over 1 hour

Output Specifications

Signal Averaging:

Programmable 0 to 100 seconds

Sensitivity Response:

Programmable 0 to 9 scale

Pulse Divider/Total Pulse Output

- Pulse Divider Setting: 1.0000 to 99999
- Maximum pulse rate: 300 Hz
- Maximum pulse width: 50 ms

### Electrical (continued)

Flow Switch Output

- Relay Modes: Low, High
- Time Delay: 0.0 to 6400.0 seconds
- Hysteresis: Adjustable in Engineering Units

Relay Specifications

- Mechanical SPDT:
  - 5A @ 30 VDC, 5A @ 250VAC
- Solid-State Relay:
  - 100mA @ 40VDC, 70 mA @ 33 VAC

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

- Type: Serial ASCII, TTL level 9600 bps
- Max. cable length: Refer to Signet 8900 wiring specifications.

Current Output (Passive 4 to 20 mA)

- Loop Accuracy:
  - ±32 µA @ 25°C @ 24 VDC
- Loop resolution: 5 µA
- Temp. drift: ±1 µA per °C max.
- Power supply rejection: ±1 µA per V
- Max. cable: 300 m (1000 ft.)
- Maximum Loop Resistance:
  - 600Ω @ 24 VDC
  - 1KΩ @ 32 VDC

### Max. Temperature/Pressure Rating:

- Storage Temperature:
  - 10°C to 75°C (14°F to 167°F)
- Operating Temperature:
  - 0°C to 65°C (32°F to 149°F)
- Relative Humidity:
  - 0 to 90% RH, non-condensing

Flow Sensor

- PP: 12.5 bar @ 20°C, 1.7 bar @ 85°C (180 psi @ 68°F, 25 psi @ 185°F)
- PVDF: 14 bar @ 20°C, 1.7 bar @ 85°C (200 psi @ 68°F, 25 psi @ 185°F)

Operating Temperature:

- PP: -18°C to 85°C (0°F to 185°F)
- PVDF: -18°C to 85°C (0°F to 185°F)

### Standards & Approvals

- CE
- Enclosure rating: NEMA 4X/IP65
- UL pending (for mechanical relays only)
- EN61326: Immunity and Emissions for Control Equipment
- EN61010: Safety requirements for electrical equipment.
- Manufactured under ISO 9001:2000 and ISO 14001:2004

# Ordering Information

Sensor Part Number - Choose one					
<b>3-2537</b>	Paddlewheel Flow Sensor				
↓	Sensor Output Type				
	<b>-1</b>	Pulse Divider via Dry Contact Relay			
	<b>-2</b>	Pulse Divider via Solid-State Relay			
	<b>-3</b>	Flow Switch via Dry-Contact Relay			
	<b>-4</b>	Flow Switch via Solid-State Relay			
	<b>-5</b>	Digital (S <sup>3</sup> L) output			
	<b>-6</b>	4 to 20mA output			
	↓	<b>C</b>	Integral Mount (8512 sensors)		
		Material Options			
		<b>-P</b>	Polypropylene body, black PVDF rotor, Titanium pin, FPM O-rings		
	↓	<b>-T</b>	Natural PVDF body, rotor and pin, FPM O-rings		
		Pipe Size			
		<b>0</b>	DN15 to DN 100 (0.5 to 4 inch)		
	↓	<b>1</b>	DN125 to DN200 (5 to 8 inch pipes) <sup>1</sup>		
<b>3-2537</b>		<b>-1</b>	<b>C</b>	<b>-P 0</b>	<b>Example Part Number</b>

<sup>1</sup> PVDF available 0.5 in. to 4 in. only

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2537-1C-P0	<b>159 001 291</b>	3-2537-4C-P1	<b>159 001 306</b>
3-2537-2C-P0	<b>159 001 292</b>	3-2537-5C-P1	<b>159 001 307</b>
3-2537-3C-P0	<b>159 001 293</b>	3-2537-6C-P1	<b>159 001 308</b>
3-2537-4C-P0	<b>159 001 294</b>	3-2537-1C-T0	<b>159 001 315</b>
3-2537-5C-P0	<b>159 001 295</b>	3-2537-2C-T0	<b>159 001 316</b>
3-2537-6C-P0	<b>159 001 296</b>	3-2537-3C-T0	<b>159 001 317</b>
3-2537-1C-P1	<b>159 001 303</b>	3-2537-4C-T0	<b>159 001 318</b>
3-2537-2C-P1	<b>159 001 304</b>	3-2537-5C-T0	<b>159 001 319</b>
3-2537-3C-P1	<b>159 001 305</b>	3-2537-6C-T0	<b>159 001 320</b>

### Application Tips:

- Use PVDF Rotor Pin for use in Deionized Water.
- Use a sleeved rotor in abrasive liquids to reduce wear.
- Sensor plug is used to plug installation fitting after extraction of sensor from pipe.
- For liquids containing ferrous particles use only Signet Magmeters.
- 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.

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

## Accessories and Replacement Parts

Mfr. Part No.	Code	Description
<b>Rotors</b>		
3-2536.320-1	<b>198 820 052</b>	Rotor, PVDF Black
3-2536.320-2	<b>159 000 272</b>	Rotor, PVDF Natural
3-2536.320-3	<b>159 000 273</b>	Rotor, Tefzel®
3-2536.321	<b>198 820 054</b>	Rotor and Pin (matched set), PVDF Natural
3-2536.322-1	<b>198 820 056</b>	Sleeved Rotor, PVDF Black
3-2536.322-2	<b>198 820 057</b>	Sleeved Rotor, PVDF Natural
3-2536.322-3	<b>198 820 058</b>	Sleeved Rotor, Tefzel®
<b>Rotor Pins</b>		
M1546-1	<b>198 801 182</b>	Pin, Titanium
M1546-2	<b>198 801 183</b>	Pin, Hastelloy-C
M1546-3	<b>198 820 014</b>	Pin, Tantalum
M1546-4	<b>198 820 015</b>	Pin, Stainless Steel
P51545	<b>198 820 016</b>	Pin, Ceramic
<b>O-Rings</b>		
1220-0021	<b>198 801 186</b>	O-Ring, FPM
1224-0021	<b>198 820 006</b>	O-Ring, EPR
1228-0021	<b>198 820 007</b>	O-Ring, FFPM - Kalrez®
<b>Miscellaneous</b>		
P31536	<b>198 840 201</b>	Sensor Plug, Polypro
P31536-2	<b>159 000 649</b>	Sensor Plug, PVDF
3-8050.396	<b>159 000 617</b>	RC Filter kit (for relay use)
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, PG13.5 (1 piece)
7300-7524	<b>159 000 687</b>	24 VDC Power Supply 7.5W, 300mA
7300-1524	<b>159 000 688</b>	24 VDC Power Supply 15W, 600mA
7300-3024	<b>159 000 689</b>	24 VDC Power Supply 30W, 1.3A
7300-5024	<b>159 000 690</b>	24 VDC Power Supply 50W, 2.1A
7300-1024	<b>159 000 691</b>	24 VDC Power Supply 100W, 4.2A