

Signet 2536 Rotor-X Paddlewheel Flow Sensors



PVC
Sensor
(gray body
and cap)

Standard
Sensor
(blue cap)

Integral
Sensor

Wet-Tap
Sensor

Simple to install with time-honored reliable performance, Signet 2536 Rotor-X Paddlewheel Flow Sensors are highly repeatable, rugged sensors that offer exceptional value with little or no maintenance. The Model 2536 has a process-ready open collector signal with a wide dynamic flow range of 0.1 to 6 m/s (0.3 to 20 ft/s). The sensor measures liquid flow rates in full pipes and can be used in low pressure systems.

The Signet 2536 sensors are offered in a variety of materials for a wide range of pipe sizes and insertion configurations. The many material choices including PP and PVDF make this model highly versatile and chemically compatible to many liquid process solutions.

Sensors can be installed in DN15 to DN900 (½ to 36 in.) pipes (except the 2536 PVC versions, which can be installed in DN15 to DN100 (½ to 4 in.) pipes), using Signet's comprehensive line of custom fittings. These custom fittings, which include tees, saddles, and weldolets, seat the sensor to the proper insertion depth into the process flow. The sensors are also offered in configurations for wet-tap installation requirements.

Features

- Operating range 0.1 to 6 m/s (0.3 to 20 ft/s)
- Wide turndown ratio of 66:1
- Open-collector output
- Highly repeatable output
- Simple, economical design
- Installs into pipe sizes DN15 to DN900 (½ to 36 in.)
- PVC 2536 version DN15 to DN100 (½ to 4 in.) for concentrated Sodium Hypochlorite 12.5% applications
- High resolution and noise immunity
- Test certificate included for -X0, -X1
- Chemically resistant materials



Certified to
NSF/ANSI 61 & 372

(3-2536-PX
version only)

Applications

- Pure Water Production
- Filtration Systems
- Chemical Production
- Liquid Delivery Systems
- Pump Protection
- Scrubber/Gas Stacks
- Gravity Feed Lines
- Not suitable for gas
- Sodium Hypochlorite transfer/
injection/batching (3-2536-U0)

Specifications

General		
Operating Range	0.1 to 6 m/s	0.3 to 20 ft/s
Pipe Size Range	DN15 to DN900	½ to 36 in.
	PVC	DN15 to DN100 ½ to 4 in.
Linearity	±1% of max. range @ 25 °C (77 °F)	
Repeatability	±0.5% of max. range @ 25 °C (77 °F)	
Min. Reynolds Number Required	4500	

Wetted Materials	
Sensor Body	Glass-filled PP (black), PVDF (natural) or PVC (gray)
O-rings	FKM (std) optional EPR (EPDM) or FFKM
Rotor Pin	Titanium, Hastelloy-C or PVDF; optional Ceramic, Tantalum or Stainless Steel
Rotor	Black PVDF or Natural PVDF; optional ETFE, with or w/o carbon fiber reinforced PTFE sleeve for rotor pin

Electrical		
Frequency	49 Hz per m/s nominal	15 Hz per ft/s nominal
Supply Voltage	5 to 24 VDC ±10%, regulated	
Supply Current	<1.5 mA @ 3.3 to 6 VDC	<20 mA @ 6 to 24 VDC
Output Type	Open collector, sinking 10 mA max.	
Cable Type	2-conductor twisted pair with shield, 22 AWG	
Cable Length	7.6 m (25 ft) can be extended up to 305 m (1000 ft) maximum	

Max. Temperature/Pressure Rating - Standard and Integral Sensor			
PP		12.5 bar @ 20 °C	180 psi @ 68 °F
		1.7 bar @ 85 °C	25 psi @ 185 °F
PVDF		14 bar @ 20 °C	200 psi @ 68 °F
		1.7 bar @ 85 °C	25 psi @ 185 °F
PVC		12.5 bar @ 20 °C	180 psi @ 68 °F
		6.9 bar @ 60 °C	100 psi @ 140 °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
PVC		0 °C to 50 °C	32 °F to 122 °F

Max. Temperature/Pressure Rating - Wet-Tap Sensor			
PP		7 bar @ 20 °C	100 psi @ 68 °F
		1.4 bar @ 60 °C	20 psi @ 140 °F
Operating Temperature		-18 °C to 60 °C	0 °F to 140 °F
Max. Wet-Tap Sensor Removal Rating		1.7 bar @ 22 °C	25 psi @ 72 °F

Shipping Weight		
3-2536-X0	0.454 kg	1.00 lb
3-2536-X1	0.476 kg	1.05 lb
3-2536-X2	0.680 kg	1.50 lb
3-2536-X3	0.780 kg	1.72 lb
3-2536-X4	0.800 kg	1.76 lb
3-2536-X5	0.880 kg	1.94 lb
3-8512-X0	0.35 kg	0.77 lb
3-8512-X1	0.37 kg	0.81 lb

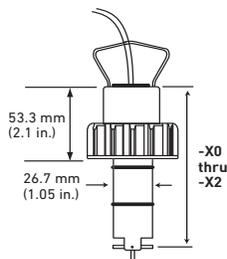
Standards and Approvals	
CE, FCC, NSF (3-2536-PX only)	
RoHS compliant, China RoHS	
Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety	

See Temperature and Pressure Graphs for more information

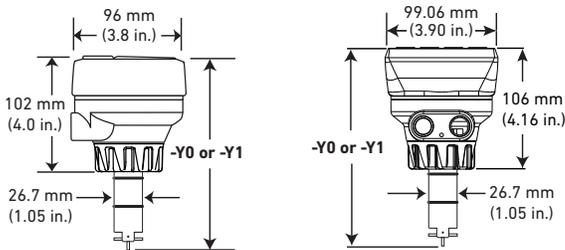
Dimensions

Standard Mount

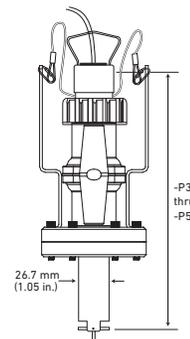
PVC Mount
(0.5 to 4 in. pipe range only)



Integral Mount
(shown with Transmitter sold separately)



Wet-Tap Mount Sensor with 3519 Wet-Tap Valve
(See 3519 product page for more information).



Pipe range

0.5 to 4 in.	-X0 = 104 mm (4.1 in.)
5 to 8 in.	-X1 = 137 mm (5.4 in.)
10 in. and up	-X2 = 213 mm (8.4 in.)

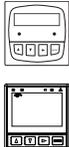
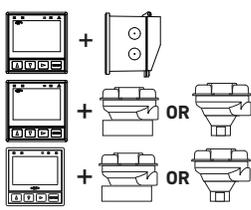
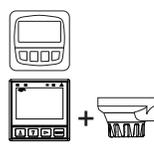
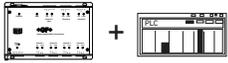
Pipe range

0.5 to 4 in.	-Y0 = 152 mm (6.0 in.)
5 to 8 in.	-Y1 = 185 mm (7.3 in.)

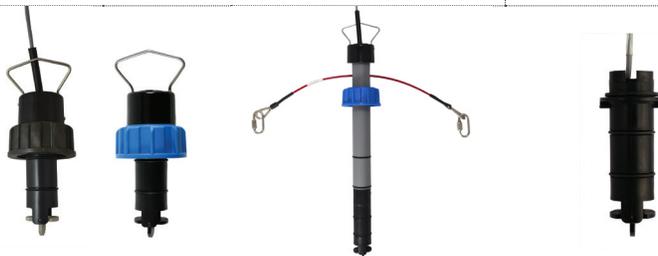
Pipe range

0.5 to 4 in.	-P3 = 297 mm (11.7 in.)
5 to 8 in.	-P4 = 333 mm (13.1 in.)
10 in. and up	-P5 = 409 mm (16.1 in.)

System Overviews

Panel Mount	Pipe, Tank, Wall Mount	Field (Integral) Mount	Automation System
Signet Instruments - 8900 - 9900 - 9900-1BC - 9950 	Signet Instruments - 9900-1P with Rear Enclosure - 9900-1BC with Rear Enclosure - 9900 with 3-8050-1 Universal Mount Kit or 3-8052-1 Integral Mount Kit - 9950 with 3-8050-1 Universal Mount Kit or 3-8052-1 Integral Mount Kit 	Signet Instruments - 9900-1 with 3-8051-X Integral Mount Kit 	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Control 

Signet 2536 PVC, Standard, Wet-Tap or 8512 Integral Mount Flow Sensors



Signet Fittings



All sold separately

For overview of Wet-Tap System, see 3519 product page

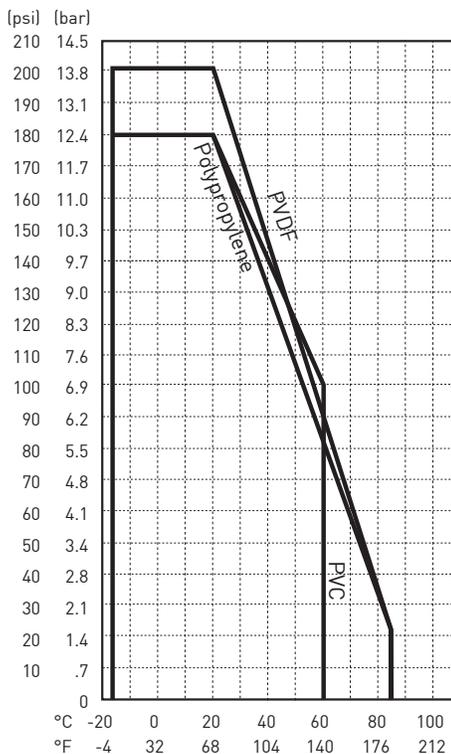
Application Tips

- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments. See Accessories section for more information.
- Use a sleeved rotor in abrasive liquids to reduce wear.
- Sensor plug can be used to plug installation fitting after extraction of sensor from pipe.
- For liquids containing ferrous particles, use 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.

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.



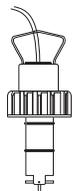
Ordering Notes

- 1) Most common part number combinations shown. For all other combinations contact factory.
- 2) Other rotor and pin materials are available for purchase from the factory and can be easily replaced in the field. See Accessories section.

Ordering Information

Model 2536 Standard Mount Paddlewheel

When choosing this style of sensor, the instrument can be mounted nearby on a pipe or wall or in a remote location up to 305 m (1000 ft) by connecting the sensor through a standard 3-8050-1 universal junction box. Standard cable length is 7.6 m (25 ft). Use Signet fittings for proper seating of the sensor into the process flow.

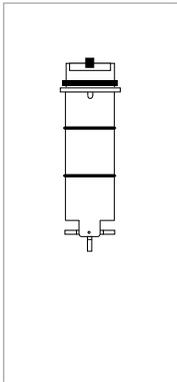


Mfr. Part No.	Code	Body	Rotor	Pin Material
Flow Sensor for use with remote mount instrument				
DN15 to DN100 - ½ to 4 in.				
3-2536-P0	198 840 143	Polypropylene	Black PVDF	Titanium
3-2536-T0	198 840 149	Natural PVDF	Natural PVDF	Natural PVDF
3-2536-U0	159 001 843	PVC	Sleeved ETFE	Titanium
3-2536-V0	198 840 146	Natural PVDF	Natural PVDF	Hastelloy-C
DN125 to DN 200 - 5 to 8 in.				
3-2536-P1	198 840 144	Polypropylene	Black PVDF	Titanium
3-2536-V1	198 840 147	Natural PVDF	Natural PVDF	Hastelloy-C
DN250 to DN900 - 10 to 36 in.				
3-2536-P2	198 840 145	Polypropylene	Black PVDF	Titanium

Ordering Information (continued)

Model 2536 Integral Mount Paddlewheel

When choosing this style of sensor, the instrument is mounted directly onto the sensor for a local display. See guidelines below for instructions.



Mfr. Part No.	Code	Body	Rotor	Pin Material
Flow sensor for integral mounting on the 8150 instrument using the 3-8051-X Flow Sensor Integral Mount Kit (sold separately)				
DN15 to DN100 - ½ to 4 in.				
3-8512-P0	198 864 513	Polypropylene	Black PVDF	Titanium
3-8512-T0	198 864 518	Natural PVDF**	Natural PVDF	Natural PVDF
3-8512-V0	198 864 516	Natural PVDF**	Natural PVDF	Hastelloy-C
DN125 to DN200 - 5 to 8 in. (PP only)				
3-8512-P1	198 864 514	Polypropylene	Black PVDF	Titanium

**Natural PVDF available ½ in. to 4 in. only

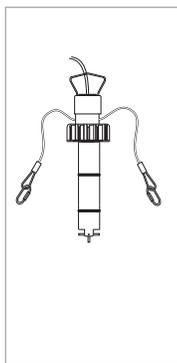
Guidelines: Combining a 2536 integral mount flow sensor with an integrally mounted instrument

Once an integral mount sensor is chosen, it can be mounted directly to a field mount transmitter by following these guidelines:

- Order the 3-8051-X flow sensor integral mounting kit (sold separately) to connect the sensor to an instrument.
- Order a field mount transmitter (sold separately). The following part numbers are compatible: 3-9900-1.

Model 2536 Wet-Tap Mount Paddlewheel Flow Sensor

When choosing this style of sensor, the instrument can be mounted nearby on a pipe or wall or in a remote location up to 305 m (1000 ft) by connecting the sensor through a standard 3-8050-1 universal junction box. Standard cable length is 7.6 m (25 ft). This style of sensor uses the 3519 Wet-Tap valve only (see individual product page for more information).



Mfr. Part No.	Code	Body	Rotor	Pin Material
Flow Sensor for Wet-Tap mounting with the 3519 Wet-Tap Valve (sold separately)				
DN15 to DN100 - ½ to 4 in.				
3-2536-P3	159 000 758	Polypropylene	Black PVDF	Titanium
DN125 to DN200 - 5 to 8 in.				
3-2536-P4	159 000 759	Polypropylene	Black PVDF	Titanium
DN250 to DN900 - 10 to 36 in.				
3-2536-P5	159 000 760	Polypropylene	Black PVDF	Titanium

Guideline: Combining a 2536 Wet-Tap Sensor with a 3519 Wet-Tap Valve

- Once a sensor is chosen, it can be mounted in a 3519 Wet-Tap Valve (sold separately).
- Assembling a sensor with a 3519 Wet-Tap valve is quick and simple. These parts can also be ordered as complete assemblies. See 3519 product page.

Model 2536 Ordering Notes

Other rotor and pin materials are available for purchase from the factory and can be easily replaced in the field. See Accessories section.

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

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Rotors		
3-2536.320-1	198 820 052	Rotor, PVDF Black
3-2536.320-2	159 000 272	Rotor, PVDF Natural
3-2536.320-3	159 000 273	Rotor, ETFE
3-2536.322-1	198 820 056	Sleeved Rotor, PVDF Black
3-2536.322-2	198 820 057	Sleeved Rotor, PVDF Natural
3-2536.322-3	198 820 058	Sleeved Rotor, ETFE
Rotor Pins		
M1546-1	198 801 182	Pin, Titanium
M1546-2	198 801 183	Pin, Hastelloy-C
M1546-3	198 820 014	Pin, Tantalum
M1546-4	198 820 015	Pin, Stainless Steel
P51545	198 820 016	Pin, Ceramic
O-Rings		
1220-0021	198 801 000	O-ring, FKM (2 required per sensor)
1224-0021	198 820 006	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	198 820 007	O-ring, FFKM (2 required per sensor)
Miscellaneous		
P31536	198 840 201	Sensor Plug, Polypropylene
P31542-3	159 000 464	Sensor Cap, Blue
3-2536.555	159 500 532	Sensor Cap, Gray
P31934	159 000 466	Conduit Cap
P51589	159 000 476	Conduit Adapter Kit
5523-0222	159 000 392	Cable (per foot), 2 cond. w/shield, 22 AWG
3-2536.321	198 820 054	PVDF Natural, Rotor Kit (rotor and pin)
3-8050	159 000 184	Universal Mount Kit
3-8050-1	159 000 753	Universal Junction Box
3-8050.390-1	159 001 702	Retaining Nut Replacement Kit, NPT, Valox (for use with 8510 and 8512)
3-8050.390-3	159 310 116	Retaining Nut Replacement Kit, NPT, PP (for use with 8510 and 8512)
3-8050.390-4	159 310 117	Retaining Nut Replacement Kit, NPT, PVDF (for use with 8510 and 8512)
3-8051	159 000 187	Transmitter Integral Adapter (for use with 8510 and 8512)
3-8051-1	159 001 755	Transmitter Integral Mounting Kit, NPT, PP (for use with 8510 and 8512)
3-8051-2	159 001 756	Transmitter Integral Mounting Kit, NPT, PVDF (for use with 8510 and 8512)