

Signet 515 Rotor-X Paddlewheel Flow Sensors

Features

- Operating range 0.3 to 6 m/s (1 to 20 ft/s)
- Wide turndown ratio of 20:1
- Highly repeatable output
- Simple, economical design
- Installs into pipe sizes DN15 to DN900 (½ to 36 in.)
- Self-powered/no external power required
- Test certificate included for -X0, -X1
- Chemically resistant materials

Description

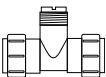
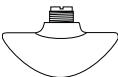
Simple to install with time-honored reliable performance, Signet 515 Rotor-X Paddlewheel Flow Sensors are highly repeatable, rugged sensors that offer exceptional value with little or no maintenance. The output signal of the Model 515 is a sinusoidal frequency capable of driving a self-powered flowmeter (Model 3-5090). The wide dynamic flow range of 0.3 to 6 m/s (1 to 20 ft/s) allows the sensor to measure liquid flow rates in full pipes and can be used in low pressure systems.

The Model 515 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 up to DN900 (36 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 and intrinsically safe installation requirements.

Applications

- Pure Water Production
- Filtration Systems
- Chemical Production
- Liquid Delivery Systems
- Pump Protection
- Scrubber Systems
- Water Monitoring
- Not suitable for gases

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

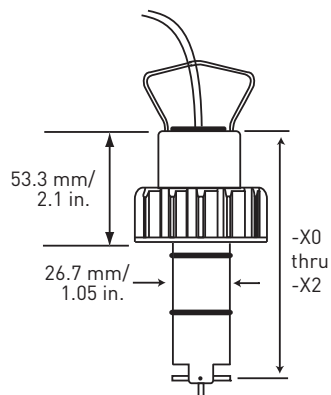
Panel Mount Signet Flow Instrument (sold separately) 5075 8150 5090 8550 5500 8900 5600 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately) 8150 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 	Integral Mount Signet Flow Instrument (sold separately) 8150 8550  Signet Integral Adapter Kit (3-8051) (sold separately) 
Signet Model 515 Standard or Wet-Tap (not shown) Flow Sensor 	Signet Model 515 Standard or Wet-Tap (not shown) Flow Sensor 	Signet Model 515 Integral Mount Flow Sensor 
Signet Fittings* (sold separately) 	 	 



* See Fittings section for more information.

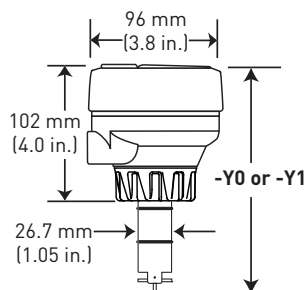
Dimensions

515 Standard Mount Sensor



Pipe Range
 ½ 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.)

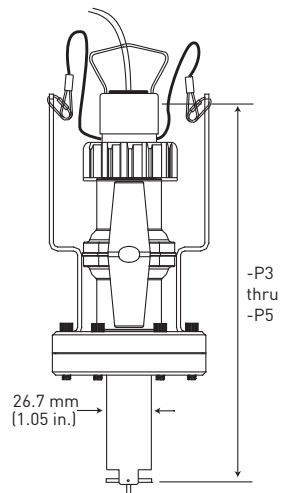
515 Integral Mount Sensor shown with Transmitter (sold separately)



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

515 Wet-Tap Mount Sensor with 3519 Wet-Tap Valve

See more information on the 3519 Wet-Tap Valve, refer to the 3519 product page.



Pipe Range
 ½ 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.)

Specifications

General

Operating Range:

0.3 to 6 m/s (1 to 20 ft/s)

Pipe Size Range:

DN15 to DN900 (½ to 36 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) or PVDF (natural)
- O-rings:
FPM (std)
optional EPR (EPDM) or FFPM
- Rotor Pin:
Titanium, Hastelloy-C or PVDF;
optional Ceramic, Tantalum, or Stainless Steel
- Rotor:
Black PVDF or Natural PVDF;
optional Tefzel®, with or without Fluoroloy G® sleeve

Electrical

Frequency:

19.7 Hz per m/s nominal
 (6 Hz per ft/s); sinusoidal

Amplitude:

3.3 V p/p per m/s nominal
 (1 V p/p per ft/s)

Source Impedance: 8 KΩ

Cable Type:

2-conductor twisted pair with shield,
 22 AWG

Cable Length:

7.6 m (25 ft) can be extended up to 60 m
 (200 ft) maximum

Max. Temperature/Pressure Rating Standard and Integral Sensor

- PP: 12.5 bar @ 20 °C,
1.7 bar @ 90 °C
(180 psi @ 68 °F, 25 psi @ 194 °F)
 - PVDF: 14 bar @ 20 °C,
1.4 bar @ 100 °C
(200 psi @ 68 °F, 20 psi @ 212 °F)
- Operating Temperature:
- PP: -18 °C to 90 °C (0 °F to 194 °F)
 - PVDF: -18 °C to 100 °C (0 °F to 212 °F)

Wet-Tap Sensor

- PP: 7 bar @ 20 °C, 1.4 bar @ 66 °C
(100 psi @ 68 °F, 20 psi @ 150 °F)
- Operating temperature:
 -18 °C to 66 °C (0 °F to 150 °F)
- Max. wet-tap sensor removal rating:
 1.7 bar @ 22 °C (25 psi @ 72 °F)

See Temperature and Pressure Graphs for more information.

Shipping Weight

P51530-X0	0.454 kg	1.00 lb
P51530-X1	0.476 kg	1.04 lb
P51530-X2	0.680 kg	1.50 lb
P51530-X3	0.794 kg	1.75 lb
P51530-X4	0.850 kg	1.87 lb
P51530-X5	1 kg	2.20 lb
3-8510-X0	0.23 kg	.50 lb
3-8510-X1	0.23 kg	.50 lb

Standards and Approvals

- FM Class I, II, III/Div. 1/groups A-G
- RoHS compliant
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

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.

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

Ordering Information

Model 515 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 60 m/200 ft (standard cable length is 7.6 m/25 ft) by connecting the sensor through a standard 3-8050-1 universal junction box. Use Signet fittings for proper seating of the sensor into the process flow.

Model 515 Standard Paddlewheel Flow Sensor



Sensor Part Number	
P51530	Flow Sensor for use with remote mount instrument
↓	Body/Rotor/Pin Material-Choose One*
	- H Polypropylene/Black PVDF/Hastelloy-C
	- P Polypropylene/Black PVDF/Titanium
	- S Polypropylene/Black PVDF/Natural PVDF
	- T Natural PVDF/Natural PVDF/Natural PVDF
	- V Natural PVDF/Natural PVDF/Hastelloy-C
	Pipe Size - Choose One
	0 ½ to 4 in.
	1 5 to 8 in.
	2 10 to 36 in.
P51530	- P 0 Example Part Number

Mfr. Part No.*	Code	Mfr. Part No.*	Code
P51530-H0	198 801 659	P51530-T0	198 801 663
P51530-P0	198 801 620	P51530-T1	198 801 664
P51530-P1	198 801 621	P51530-V0	198 801 623
P51530-P2	198 801 622	P51530-V1	198 801 624
P51530-S0	198 801 661	P51530-V2	198 801 625

*Model 515

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.

Model 515 Integral Mount Paddlewheel

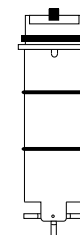
When choosing this style of sensor, the instrument is mounted directly onto the sensor for a local display. See Guideline below for instructions.

Sensor Part Number	
3-8510	Flow Sensor for integral mounting on the 8150 or 8550 instrument using the 3-8051 adapter (instrument and adapter sold separately)
↓	Body/Rotor/Pin Material-Choose One*
	- P Polypropylene/Black PVDF/Titanium
	- T Natural PVDF/Natural PVDF/Natural PVDF**
	- V Natural PVDF/Natural PVDF/Hastelloy-C**
	Pipe Size - Choose One
	0 ½ to 4 in.
	1 5 to 8 in. (PP only)
3-8510	- P 0 Example Part Number

**PVDF available ½ in. to 4 in. only

Mfr. Part No.*	Code	Mfr. Part No.*	Code
3-8510-P0	198 864 504	3-8510-T0	159 000 622
3-8510-P1	198 864 505	3-8510-V0	198 864 506

Model 515 Integral Mount Paddlewheel Flow Sensor



Guideline: Combining a 515 Integral mount flow sensor with an integrally mounted instrument

Option 1

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

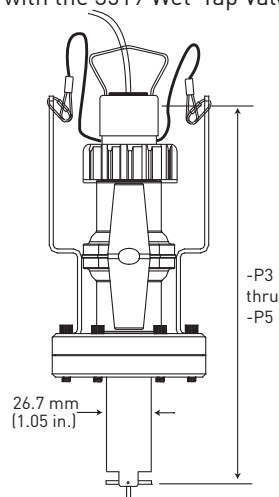
- a) Order the integral adapter kit 3-8051 (sold separately) to connect the sensor to an instrument.
- b) Order a field mount transmitter (sold separately). The following part numbers are compatible: 3-8550-1, 3-8550-2, 3-8550-3, 3-8150-1.

- c) Assembling the sensor with the integral adapter and instrument is quick and simple.

Option 2

These parts can also be ordered as an assembled part. See page 74 "Integral Mount" for more information.

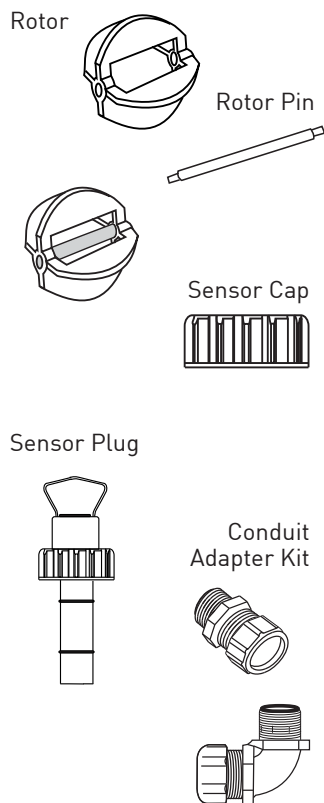
Signet 515 Wet-Tap Sensor
with the 3519 Wet-Tap Valve



Pipe Range
½ 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.)

*Model 515 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.



Ordering Information (continued)

Model 515 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 60 m (200 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).

Sensor Part Number		
P51530	Flow Sensor for wet-tap mounting with the 3519 Wet-Tap Valve (sold separately)	
	Body/Rotor/Pin Material*	
	- P	Polypropylene/Black PVDF/Titanium
	Pipe Size - Choose One	
	3	½ to 4 in.
	4	5 to 8 in.
	5	10 to 36 in.
P51530	- P	3
Example Part Number		

Mfr. Part No.*	Code
P51530-P3	198 840 310
P51530-P4	198 840 311
P51530-P5	198 840 312

Guideline: Combining a 515 Wet-Tap Sensor with a 3519 Wet-Tap Valve

- Sensor 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.

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Rotors		
M1538-2	198 801 181	Rotor, PVDF Black
P51547-3	159 000 474	Rotor, PVDF Natural
M1538-4	198 820 018	Rotor, Tefzel®
P51550-3	198 820 043	Rotor and pin (matched set), PVDF Natural
3-0515.322-1	198 820 059	Sleeved rotor, PVDF Black
3-0515.322-2	198 820 060	Sleeved rotor, PVDF Natural
3-0515.322-3	198 820 017	Sleeved rotor, Tefzel®
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
P51550-3	198 820 043	Rotor and pin, PVDF Natural
P51545	198 820 016	Pin, Ceramic
O-Rings		
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)
Miscellaneous		
P31536	198 840 201	Sensor plug, Polypropylene
P31542	198 801 630	Sensor cap, Red
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
3-8051	159 000 187	Transmitter integral adapter (for use with 8510 and 8512) (see system overview for graphics)
6400-9001	159 001 466	Intrinsic safety barriers (2 required)
3-8051-1	159 000 753	Universal junction box

3-0515.099 Rev A (01/10)

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Signet Rotor Replacement Sheet

Austauschanleitung für den Signet Sensor Rotor

Signet Remplacement du Rotor

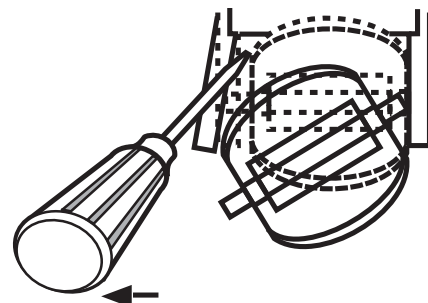
Cambio del rotor Signet



3-0515.092-1 Rev. D 9/09 E G F S

Signet Plastic Flow Sensor Rotor/Shaft Replacement Instructions

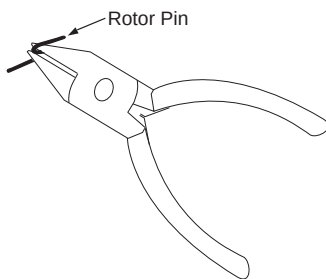
1. To remove the rotor, insert a small screwdriver between the rotor and the sensor ear.
2. Twist the screwdriver blade to flex the sensor ear outward enough to remove one end of the rotor/shaft assembly. DO NOT flex the ear any more than necessary! If it breaks, the sensor cannot be repaired.
3. Install the new rotor and shaft assembly by inserting one end into the hole in the sensor ear, then flex the opposite sensor ear back enough to slip new rotor and shaft into place.



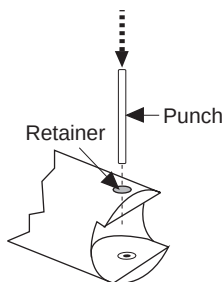
Note: Always replace both Rotor and Shaft together!

Signet Metal Flow Sensor Rotor Replacement Instructions

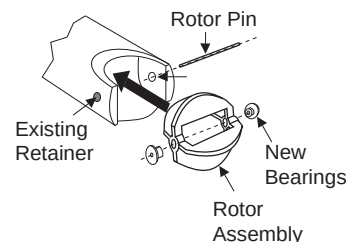
1. With a small pair of needle-nose pliers, firmly grip the center of the rotor pin (axle) and with a twisting motion, bend the rotor pin into an "S" shape. This should pull the ends of the pin out of the retainers and free the rotor assembly.



2. Remove rotor pin retainer from each side by gently tapping it inwards using a punch. Install a new retainer into the sensor body with its rotor pin clearance hole inward. Only install one retainer at this time.

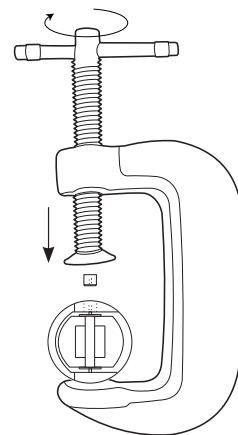


3. Insert the new rotor assembly and bearings into the rotor housing of the sensor and place the new rotor pin (axle) through the open end of the rotor housing, through the rotor and bearings, and into the previously installed retainer.



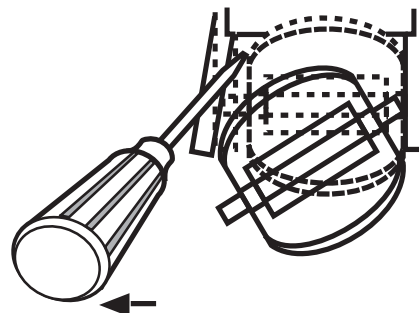
4. Using a vise or C-clamp, press the second retainer into the hole in the sensor body while lining up the rotor pin with the center of the retainer hole.

Note: A hammer and center punch can also be used if a clamp or vise is not available.



Austauschanleitung für den Signet Kuststoff Sensor Rotor/Achse

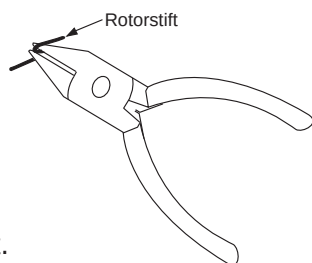
1. Zum Austausch des Rotors einen kleinen Schraubendreher zwischen den Rotor und die Rotorhalterung des Sensors bringen.
2. Die Klinge des Schraubendrehers drehen und die Halterung vorsichtig nach außen biegen; den Rotor und die Achse an einem Ende herausnehmen. Die Halterung nicht mehr als nötig biegen! Sollte sie abbrechen, gibt es keine Möglichkeit den Sensor zu reparieren.
3. Um den neuen Rotor und die neue Achse einzubauen setzt man den Rotor in einer Seite der Halterung ein und biegt die gegenüberliegende Seite vorsichtig und gerade weit genug zurück, um das andere Ende des Rotors und Achse einzusetzen.



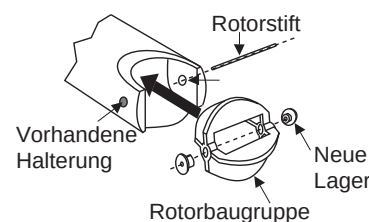
Anmerkung: Ersetzen Sie den Rotor und die Achse!

Anleitung zum Austausch des Schaufelrades

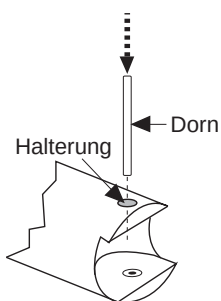
1. Halten Sie den Rotorscheft (Achse) mit einer kleinen Spitzzange in der Mitte fest und verdrehen Sie den Stift zu einer "S"-Form. Dadurch werden die Enden des Stiftes aus den Lagerhülsen gehoben und das Rotorbauteil freigelegt.



3. Setzen Sie das neue Rotorbauteil und neue Lager in das Rotorgehäuse des Sensors ein und schieben Sie den neuen Rotorscheft (Achse) durch das offene Ende des Rotorgehäuses, den Rotor und die Lager in die vorher installierte Lagerhülse.

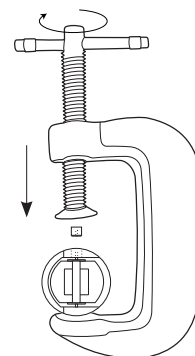


2. Entfernen Sie an jeder Seite die Lagerhülse, indem Sie sie mit einem Durchschlag vorsichtig nach innen treiben. Bauen Sie einen neuen Rotor so ein, daß das Schaftabstandsloch nach innen zeigt. Setzen Sie zunächst nur eine Lagerhülse ein.



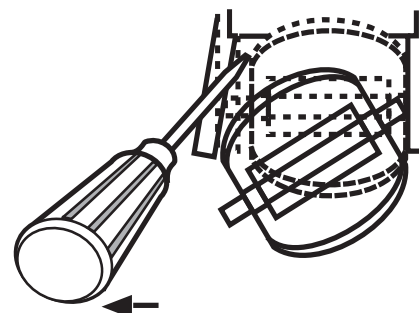
4. Einen Schraubstock oder eine Schraubzwinde verwenden und den zweiten Halter in die Öffnung im Sensorkörper drücken, während die Rotorachse auf die Mitte der Halteröffnung ausgerichtet wird.

Hinweis: Alternativ kann ein Hammer und Körner verwendet werden, wenn kein Schraubstock und keine Schraubzwinde zur Verfügung stehen.



Instructions pour le remplacement du rotor/d'axe du capteur Signet Plastique

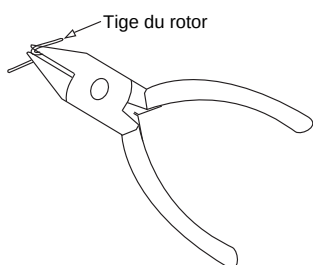
1. Pour retirer le rotor, insérer un petit tourne-vis entre le rotor et l'oreille du capteur.
2. Tourner la lame du tourne-vis de façon à fléchir vers l'extérieur l'oreille afin de retirer une extrémité du rotor ainsi que d'axe. Ne pas fléchir l'oreille plus qu'il n'est nécessaire! Si elle venait à casser, il n'y aurait aucun moyen de réparer le capteur.
3. Le nouveau rotor et axe peuvent être installés en insérant une oreille dans le trou, puis en fléchissant l'oreille opposée suffisamment en arrière pour pouvoir glisser l'autre extrémité en place.



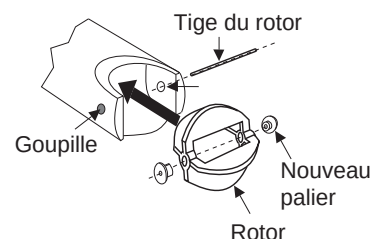
Attention! Le rotor/axe doivent toujours être remplacés ensemble.

Instructions pour le remplacement de la roue à palettes Signet metall

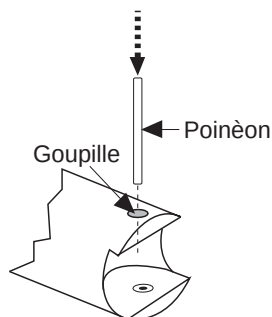
1. Avec une pince plate à becs pointus, saisir fermement le centre de l'axe du rotor, tourner la pince pour donner à l'axe du rotor la forme d'un S. Cette opération devrait sortir l'axe de ses dispositifs de retenue et permettre de libérer le rotor.



3. Poser le rotor et les paliers neufs dans le boîtier du rotor du capteur, et poser l'axe de rotor neuf (dans l'extrémité ouverte du boîtier du rotor) dans le rotor et les paliers, puis dans le dispositif de retenue déjà installé.

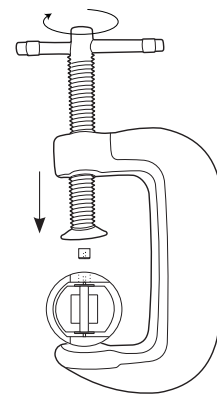


2. Marteler doucement à l'aide d'un poinçon. Remettre un nouveau dispositif de retenue en place avec son trou de dégagement d'axe de rotor vers l'intérieur. Installer un seul dispositif de retenue à ce stade.



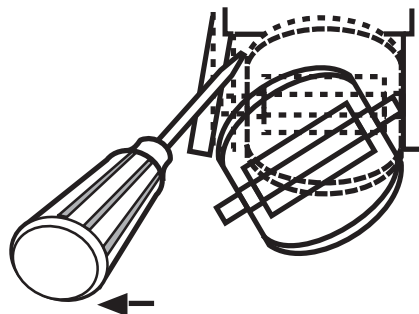
4. À l'aide d'un étau ou d'un serre-joint en C, appuyer la seconde retenue dans le trou du corps du capteur tout en alignant l'axe du rotor sur le centre du trou de retenue.

Remarque : Il est également possible d'utiliser un marteau ou un poinçon en l'absence de serre-joint ou d'étau.



Instrucciones para el cambio del conjunto rotor y eje del sensor de flujo del plástico Signet

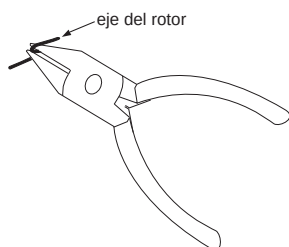
1. Para desmontar el rotor, inserte un destornillador pequeño entre el rotor y el asidero del sensor.
2. Gire la pala del destornillador para doblar el asidero del sensor hacia afuera, lo suficiente como para retirar un extremo del conjunto rotor-eje. ¡NO doble el asidero más de lo necesario! Si se llega a romper, no se podrá reparar el sensor.
3. Instale el nuevo juego de rotor y eje insertando un extremo en el agujero del asidero del sensor, y seguidamente doblando hacia atrás el asidero opuesto, lo suficiente como para que se pueda deslizar el nuevo juego de rotor y eje en su lugar.



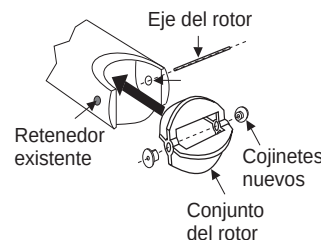
Nota: ¡Cambie siempre el rotor y el eje al mismo tiempo!

Instrucciones para el cambio del rotor del sensor de acero inoxidable Signet

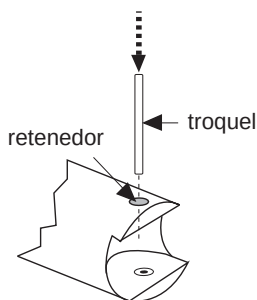
1. Con un pequeño par de pinzas afiladas, sujete firmemente el centro del eje del rotor (eje) y con un movimiento de torsión, doble el eje del rotor en una forma de "S". Esta acción extraerá los extremos del eje de los retenedores y liberará el conjunto del rotor.



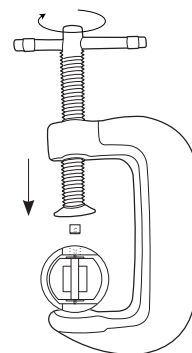
3. Inserte el nuevo conjunto del rotor y los cojinetes en el cuerpo del rotor que se encuentra en el sensor y coloque un nuevo eje de rotor a través del extremo abierto del cuerpo del rotor, a través del rotor y los cojinetes y en el retenedor instalado previamente.



2. Saque el retenedor de cada lado dando un golpecito suave hacia adentro con un troquel. Instale un nuevo retenedor con el orificio de pase del eje del rotor hacia adentro. Instale solamente un retenedor en este momento.



4. El uso de un tornillo de banco o una abrazadera en "C", encaje a presión el segundo retenedor en el agujero del cuerpo del sensor mientras alinea el pasador del rotor con el centro del agujero del retenedor.



Nota: También se puede usar un martillo y un punzón central si no se dispone de una abrazadera o un tornillo de banco



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Signet 525 Metalex Paddlewheel Flow Sensor

Features

- For up to 103 bar (1500 psi @ safety factor 1.5) pressure
- For up to 149 °C (300 °F) temperature
- DN15 to DN300 (½ to 12 in.) pipe range
- Simple installation
- Self-powered/ no external power required
- 316 SS body (1.4401)
- Tungsten Carbide or SS shaft
- 7.6 m (25 ft) cable included
- FM approved
- Operating range 0.5 to 6m/s (1.6 to 20 ft/s)

Description

The Signet 525 Metalex Paddlewheel Flow Sensor combines stainless steel construction with insertion paddlewheel technology. The result is a highly reliable sensor suitable for operation at extreme pressures and temperatures. The Tungsten Carbide shaft and Rulon® B (Fluoropoly B/PTFE) bearing provides excellent wear resistance for extended service.

A comprehensive fitting program allows installation in steel lines with the mini-block for small diameters, and either the mini-tap or saddle for pipes up to DN300 (12 in.). The self-generating output signal allows use with the battery operated flow totalizer 8150.

Applications

- Boiler Feedwater Monitoring
- HVAC Systems
- Chemical Transport
- Heat Exchangers
- Reverse Osmosis
- Cooling systems
- Not Suitable for Gases

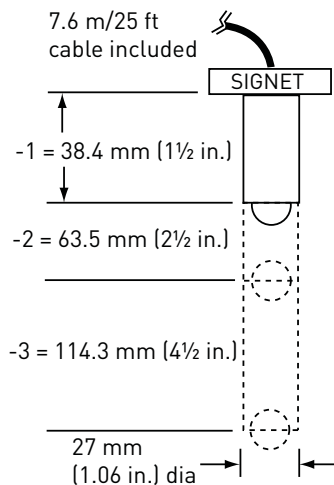
System Overview

Panel Mount	Pipe, Tank, Wall Mount
Signet Flow Instrument (sold separately) 5075 8150 5500 8550 5600 8900	Signet Flow Instrument (sold separately) 8150 8550
Signet Model 525 Metalex Flow Sensor 	Signet Universal Adapter Kit (3-8050) (sold separately)
*Signet Metalex Fitting (sold separately) 	



* See Fittings section for more information.

Dimensions



Application Tips

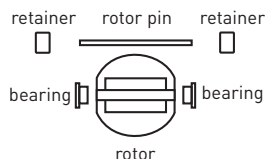
- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments. See Accessories section.
- Use the Socket Weld or Weld-on Mini-Tap fittings for sensor installation in pressures up to 1500 psi (103 bar).
- The 525 can be used in intrinsically safe areas using an approved barrier between the sensor and instrument.

*Model 525

Ordering Notes

- Each sensor option is used with a different fitting based on pipe size.
- Fittings must be ordered separately.
- See fittings section for more information.

Rotor Kit



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

Specifications

General

Operating Range: 0.5 to 6 m/s
(1.6 to 20 ft/s)

Pipe Size Range: DN15 to DN300
(½ to 12 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: 316 SS (ACI type CF-8M per ASTM A351), DIN 17440

Rotor Material: CB7Cu-1 Alloy

Rotor Pin: Tungsten Carbide GRP 1 or 316 stainless steel

Retainers (2): 316 stainless steel (1.4401)

Rotor Bearings (2): Rulon® B (Fluoroloy/PTFE)

Gasket: KLINGER®sil C-4401 (supplied with fitting)

Electrical

Frequency: 12 Hz per ft/s nominal,

Amplitude: 5 to 8 mV p-p per Hz

Source Impedance: 11.6 KΩ

Cable Length: 7.6 m (25 ft), can be extended up to 60 m (200 ft)

Electrical (continued)

Cable Type: Cable (per foot) 2 cond. w/shield, 22 AWG

Max. Temperature/Pressure Rating

- Socket Weld or Weld-On Mini-Tap fittings: 103 bar (1500 psi @ safety factor 1.5) @ 149 °C (300 °F)
 - Strap-on Saddle fitting: 21 bar (300 psi) @ 66 °C (150 °F)
- Operating Temperature: -18 °C to 149 °C (0 °F to 300 °F)

See Temperature and Pressure graphs for more information.

Shipping Weight

P525-1/-1S	0.723 kg	1.6 lb
P525-2/-2S	0.774 kg	1.7 lb
P525-3/-3S	0.923 kg	2.0 lb

Standards and Approvals

- FM Class I (Group A, B, C, D), II (Group E, F, G), III, Division 1 (Groups A-G)
- RoHS compliant
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Ordering Information

Sensor Part Number		
P525	Metalex Flow sensor for high pressures and temperatures	
	Sensor Style	
-1	used with ½ to 1 inch socket-weld mini-tap fittings**	
-2	used with 1¼ to 12 inch weld-on mini-tap fittings**	
-3	used with 2 to 12 inch strap-on saddle fittings**	
	Rotor Pin Material	
-	Tungsten Carbide	
S	316 Stainless Steel	
P525	-1	Example Part Number

**See Fittings section.

Mfr. Part No.*	Code	Mfr. Part No.*	Code
P525-1	198 801 494	P525-1S	159 000 963
P525-2	198 801 495	P525-2S	159 000 964
P525-3	198 801 496	P525-3S	159 000 965

Accessories and Replacements Parts

Mfr. Part No.	Code	Description
P52509	198 801 501	Rotor kit (rotors, stainless steel pin, bearings, retainers)
P52509-2	159 000 480	Rotor kit (rotors, tungsten carbide pin, bearings, retainers)
P52504-1	198 801 500	Rotor pin, Stainless Steel (1.4401)
P52504-2	198 820 023	Rotor pin, Tungsten Carbide
P52618	159 000 493	Gasket
P52503	198 820 013	Bearing, Rulon® B (Fluoroloy/PTFE)
P52527	159 000 481	Retainers, Stainless Steel
P52628	159 000 504	Fitting cap kit (cap and gasket)
P51589	159 000 476	Conduit adapter kit
5523-3222	159 000 393	Cable (per foot) 2 cond. w/shield, 22 AWG
6402-9001	159 001 486	Intrinsic safety barrier (2 required)

3-0525.099 Rev A (01/10)

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Signet 2000 MicroFlow Rotor Sensor

Features

- Operating range
0.11 to 12.11 lpm
(0.03 to 3.2 U.S. gpm)
- Simple mounting
- 1/4 in. NPT or ISO threads
for simple pipe or tubing
connection
- Measures opaque and
transparent liquids
- Low pressure drop
- Standard cable
7.6 m (25 ft)

Description

The Signet 2000 MicroFlow Rotor Sensor is constructed of Polyphenylene Sulfide (PPS) which provides high material strength. The 2000 offers two flow ranges starting at 0.11 or 1.13 lpm (0.03 or 0.3 gpm), for clean process liquids, regardless of fluid color or opacity.

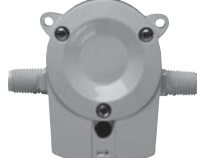
This sensor can be connected to flexible tubing or rigid pipe, and uses standard hardware for mounting. Only one moving part and a low pressure drop across the sensor reduces operating costs and maintenance requirements.

Applications

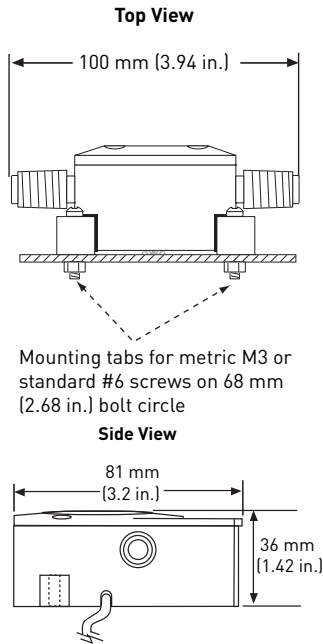
- Coolant Flow
- Dosing
- Batch Dispensing
- Not recommended for
Strong Oxidizers

CE

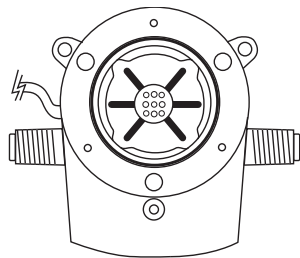
System Overview

Panel Mount Signet Flow Instrument (sold separately) 5075 8550 5500 8900 5600 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately) 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 
Signet 2000 Flow Sensor 	
Flexible tubing or rigid pipe (customer supplied)  	

Dimensions



Cover Removed



Application Tips

- For use in clean fluids - no suspended solids.
- Use the mounting tabs to secure the sensor to a flat surface, $\pm 30^\circ$.
- Verify chemical compatibility before installation.

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

Specifications

General

Operating Range:

- -11 & -12 version:
0.11 to 2.6 lpm (0.03 to 0.7 U.S. gpm)
- -21 & -22 version:
1.13 to 12.11 lpm (0.3 to 3.2 U.S. gpm)

Linearity: $\pm 1.2\%$ of full range

Repeatability: $\pm 0.5\%$ of full range

Connections: $\frac{1}{4}$ in. NPT (male) or
ISO 7/1 - R1/4 (male)

Wetted Materials

- Sensor body and cover:
40% glass filled Polyphenylene Sulfide (PPS)
- Rotor: PEEK™, natural, unfilled
- Cover O-ring: FPM

Electrical

Power:

5 to 24 VDC $\pm 10\%$, regulated, 10 mA max.

Output Type:

Open-collector, sinking, 10 mA max.

Cable Length: 7.6 m (25 ft), can be extended
up to 300 m (1000 ft)

Cable Type:

2-conductor twisted pair w/shield, 22 AWG

Max. Temperature/Pressure Rating

0 °C to 80 °C @ 5.5 bar max.

(32 °F to 176 °F @ 80 psi max.)

See Temperature and Pressure Graphs for more information

Shipping Weight 0.3 kg 0.7 lb

Standards and Approvals

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

Ordering Information

Sensor Part Number		
3-2000	MicroFlow rotor flow sensor	
	Flow Range	
	1	Low flow, 0.11 to 2.61 lpm (0.03 to 0.7 gpm)
	2	High flow, 1.13 to 12.11 lpm (0.3 to 3.2 gpm)
	End Fittings	
	1	$\frac{1}{4}$ NPT threads
	2	ISO 7/1-R1/4 threads
3-2000	-1	↓ 1 Example Part Number

Mfr. Part No.	Code
3-2000-11	198 822 000
3-2000-12	198 822 001

Mfr. Part No.	Code
3-2000-21	198 822 002
3-2000-22	198 822 003

Accessories and Replacement Parts

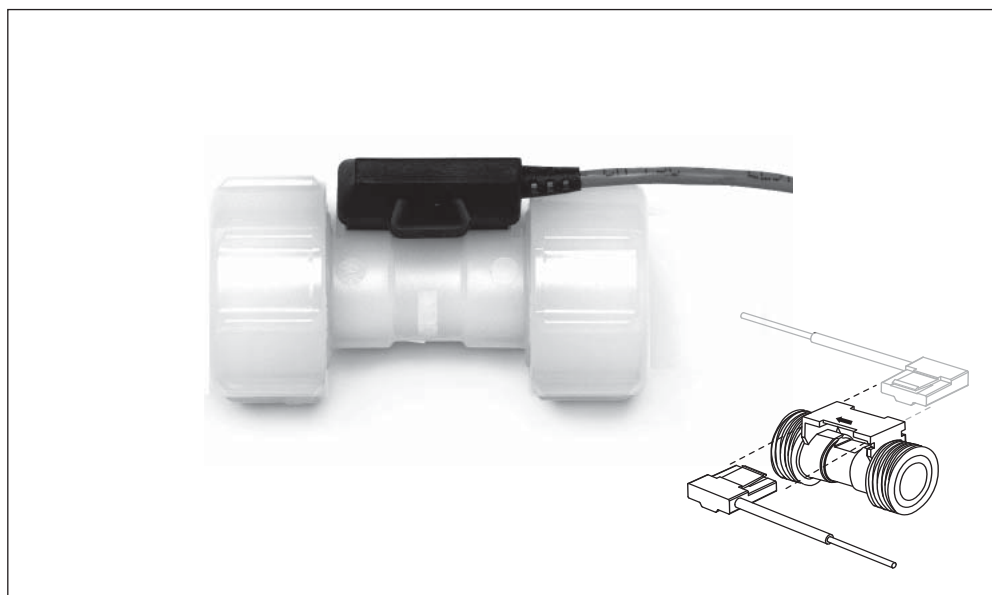
Mfr. Part No.	Code	Description
3-2000.390	159 000 248	Replacement rotor kit
1220-0029	198 820 049	Cover O-ring
2450-0620	198 820 051	Cover screw
5523-0222	159 000 392	Cable (per foot), 2 cond. w/shield, 22 AWG
3-8050-1	159 000 753	Universal junction box

3-2000.099 Rev C (01/10)

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Signet 2100 Turbine Flow Sensor



Description

Engineered specifically for small pipe diameter applications, the Signet 2100 Turbine Flow Sensor provides accurate readings in two flow ranges: 0.3 to 3.8 lpm and 3 to 38 lpm (0.1 to 1 gpm and 0.8 to 10 gpm).

The injection-molded PVDF body and ceramic bearings provide excellent chemical compatibility and long service in dosing and batching applications. Union piping and tubing connections

along with removable NEMA 4X electronics allow for easy assembly and field replaceability. The 2100 can be used with DN8 (1/4 in.), DN10 (3/8 in.), DN15 (1/2 in.) tubing, or DN15 (1/2 in.) piping for simple installation. End connections are available in PVDF for hose barbs, fusion socket or IR/butt fusion, and in PVC for socket or NPT thread.

Features

- Operating range of 0.38 to 38 lpm (0.10 to 10 U.S. gpm)
- Non-magnetic turbine
- Union ends for various connector types
- End connector kits for rigid or flexible tubing or DN15 (1/2 in.) pipe
- PVDF & ceramic wetted parts provide superior chemical compatibility
- For use with both clear and opaque fluids
- Small and compact design
- 4.6 m (15 ft) cable
- Features removable electronics that installs from either side of the sensor
- Sensor mounts at any angle

Applications

- Chemical Addition
- Textile dyeing
- High-purity Chemical Dispensing
- Water Addition
- Fertigation
- Dosing
- Pump Protection
- Not suitable for gases

System Overview

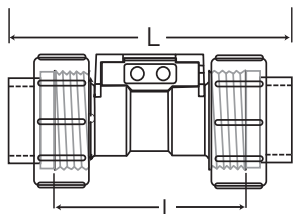
Panel Mount Signet Flow Instrument (sold separately) 5075 8550 5500 8900 5600 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately) 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 
Signet 2100 Flow Sensor 	
End Connector options Fusion, threaded or solvent socket connectors for DN15 (1/2 in.) pipe  Hose barb connectors for DN8, DN10, or DN15 (1/4 in., 3/8 in. or 1/2 in.) flexible tubing 	



Dimensions

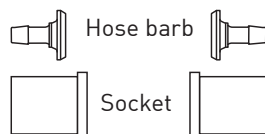
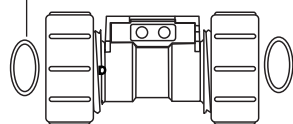
L = overall length

All sockets: 102 mm (4 in.)
Butt fusion/IR: 170 mm (6.7 in.)
1/4 in. Barb: 124 mm (4.9 in.)
3/8 in. Barb: 127 mm (5 in.)
1/2 in. Barb: 132 mm (5.2 in.)



l = 64 mm (2 1/2 in.) Electronics module

O-ring



Application Tips

- All socket and hose barb connector kits are sold individually. Two kits are required for each sensor.
- Mount at any angle.
- Junction block, 3-8050-1 recommended if standard cable is extended to maximum 300 m (1000 ft)

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

3-2100.099 Rev A (01/10)

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Specifications

General

Operating Range:

- -L = 0.38 to 3.8 lpm (0.10 to 1 U.S. gpm)
- -H = 3 to 38 lpm (0.8 to 10 U.S. gpm)

Linearity: ±3% of reading

Repeatability: ±0.5% of reading

Pipe size range: DN15 (1/2 in.)

Hose size: DN8 (3/8 in.), DN10 (3/8 in.), DN15 (1/2 in.)

Wetted Materials

Sensor Body/Rotor: PVDF

Shaft/Bearings: Ceramic

O-rings: -1 = FPM, -2 = EPR (EPDM)

Electronics:

PBT (polybutylene terephthalate)

EVA (ethylene vinyl acetate)

Electrical

Power:

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

Reverse polarity protected

Electrical (continued)

Output:

Open collector, sinking, max 30 mA

Cable Length: 4.6 m (15 ft) can be
extended up to 300 m (1000 ft)

Cable Type:

PVC jacketed, 2 conductor twisted pair
with shield (22 AWG)

Max. Temperature/Pressure Rating

16 bar @ 20 °C, 9.3 bar @ 70 °C

(232 psi @ 68 °F, 130 psi @ 158 °F)

Operating Temperature:

-20 °C to 70 °C (-4 °F to 158 °F)

Storage Temperature:

-15 °C to 80 °C (5 °F to 176 °F)

See Temperature and Pressure graphs

Shipping Weight 0.15 kg 0.33 lb

Standards and Approvals

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

Ordering Information

Sensor Part Number	
3-2100	Turbine flow sensor, PVDF body and rotor, for use with various end-connectors
O-ring Material - Choose One	
-1	FPM
-2	EPR (EPDM)
Flow Range	
L	low, 0.38 to 3.8 lpm (0.10 to 1 gpm)
H	high, 3 to 38 lpm (0.8 to 10 gpm)
3-2100	-1 L Example Part Number

*Note: To install this flow sensor, end fittings must be installed on both ends of the sensor. See selection below

Fitting Part Number	
3-2100	End fitting for Model 2100 sensor
Type of End Fitting	
-31	Hose barb connector kit, PVDF, 1/2 inch (1-hose barb and 1-ring nut)
-32	Hose barb connector kit, PVDF, 3/8 inch (1-hose barb and 1-ring nut)
-33	Hose barb connector kit, PVDF, 1/4 inch (1-hose barb and 1-ring nut)
-34	Fusion socket connector, PVDF, DN15 1/2 inch (1-fusion socket and 1 ring nut)
-35	Butt Fusion/IR connector kit, PVDF, DN15 1/2 inch (1-IR socket and 1 ring nut)
-36	Metric socket connector kit, PVC, 1/2 inch (1-solvent socket and 1 ring nut)
-37	SCH 80 socket connector kit, PVC, 1/2 inch (1-solvent socket and 1 ring nut)
-38	NPT thread socket connector kit, PVC, 1/2 inch (1-threaded socket and 1 ring nut)
3-2100	-33 Example Part Number

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2100-1L	159 000 001	3-2100-34	159 000 008
3-2100-2L	159 000 003	3-2100-35	159 000 009
3-2100-1H	159 000 002	3-2100-36	159 000 010
3-2100-2H	159 000 004	3-2100-37	159 000 011
3-2100-31	159 000 005	3-2100-38	159 000 012
3-2100-32	159 000 006		
3-2100-33	159 000 007		

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
1220-0018	159 000 019	O-rings FPM (2 required per sensor)
1224-0018	159 000 020	O-rings EPR (EPDM) (2 required per sensor)
3-2100.390-1L	159 000 015	Turbine Lo Flow with FPM O-rings (replacement body)
3-2100.390-1H	159 000 016	Turbine Hi Flow with FPM O-rings (replacement body)
3-2100.390-2L	159 000 017	Turbine Lo Flow with EPR (EPDM) O-rings (replacement body)
3-2100.390-2H	159 000 018	Turbine Hi Flow with EPR (EPDM) O-rings (replacement body)
3-2100.390	159 000 014	Electronics Module with 15 ft (4.6 m) cable
3-8050-1	159 000 753	Universal junction box

Signet 2507 Mini Flow Rotor Sensor

Features

- Operating range 400 to 12,000 mL/m (0.1 to 3.2 U.S. gpm)
- Detachable signal connector for easy servicing
- Simple installation with a G 1/4 in. (1/4 in. NPT) threaded connection
- Standard 7.6 m (25 ft) cable
- PVDF construction
- Compact assembly

Description

The Signet 2507 Mini Flow Rotor Sensor contains a free-running rotor that is driven by the fluid flow. Within the given measurement range, the rotational speed of the rotor is proportional to the fluid flow rate.

Magnets built into the rotor trigger an electronic switch in the top of the sensor creating a square-wave output. Both opaque and transparent fluids can be measured with kinematic viscosities between 0.2 to 20.0 centistokes.

Applications

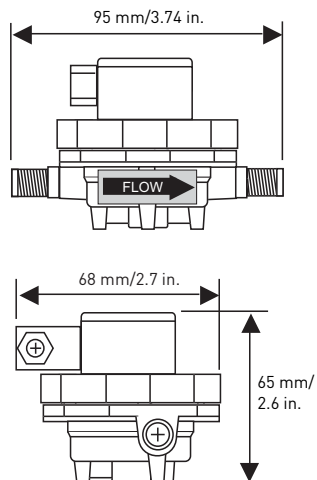
- Fluid Dispensing
- Laboratory and Clinical Wet Benches
- Chemical Dosing
- Batch Processes



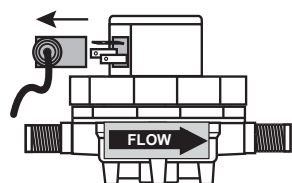
System Overview

Panel Mount Signet Flow Instrument (sold separately) 5075 8550 5500 8900 5600 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately) 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 
Signet 2507 Mini Flow Sensor 	
Signet Pipe Fitting Adapters (two included) Used to convert the sensor's G1/4 in. straight threads into 1/4 in. NPT threads 	

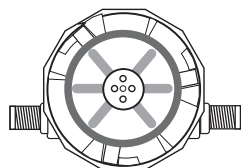
Dimensions



Detachable Signal Connector



Top View
(cover removed)



Application Tips

- Use the threaded ports on bottom of sensor to secure the sensor to any flat surface.
- The range of any sensor can be changed by replacing the flow insert.
- Suitable only for clean fluids without particles.

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

Specifications

General

Operating Range:

- -2V sensor: 400 to 2800 mL/m (0.105 to 0.740 U.S. gpm)
- -3V sensor: 700 to 4200 mL/m (0.185 to 1.123 U.S. gpm)
- -4V sensor: 1300 to 6000 mL/m (0.343 to 1.585 U.S. gpm)
- -6V sensor: 3200 to 12000 mL/m (0.845 to 3.170 U.S. gpm)

Accuracy: $\pm 2\%$ of reading

Repeatability: $\pm 0.25\%$ of full range

Viscosity range: 0.2 to 20.0 centistokes

Connections:

G 1/4 in. ports, 1/4 in. NPT pipe adapters
(2 included)

Wetted Materials

- Housing: PVDF
- Flow insert: PTFE
- Quad ring seal: FPM
- Rotor: PVDF
- Pipe thread adapters: PVDF

Electrical

Power:

5 to 24 VDC $\pm 10\%$, regulated,
10 mA max

Output Type:

Open-collector, sinking,
10 mA max.

Cable Length:

7.6 m (25 ft), can be extended up to
300 m (1000 ft)

Cable Type:

2-conductor shielded twisted-pair,
22 AWG

Max. Temperature/Pressure Rating

- 5.5 bar @ -18 °C (80 psi @ 0 °F)
- 5.5 bar @ 24 °C (80 psi @ 75 °F)
- 3 bar @ 120 °C (45 psi @ 248 °F)

See Temperature and Pressure graphs
for more information

Shipping Weight 0.115 kg 0.25 lb

Standards and Approvals

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

Ordering Information

Sensor Part Number		
3-2507.100	Mini Flow low flow sensor with free-running rotor	
	Insert Option	
	-2V	With 2 mm insert; for 0.15 to 0.740 gpm (400 to 2800 mL/m)
	-3V	With 3 mm insert, for 0.185 to 1.123 gpm (700 to 4200 mL/m)
	-4V	With 4 mm insert, for 0.343 to 1.585 gpm (1300 to 6000 mL/m)
	-6V	With 6 mm inlet, no insert, for 0.845 to 3.170 gpm (3200 to 12000 mL/m)
3-2507.100	-2V	Example Part Number

Mfr. Part No.	Code
3-2507.100-2V	198 801 732
3-2507.100-3V	198 801 733

Mfr. Part No.	Code
3-2507.100-4V	198 801 734
3-2507.100-6V	198 801 736

Accessories and Replacement Parts

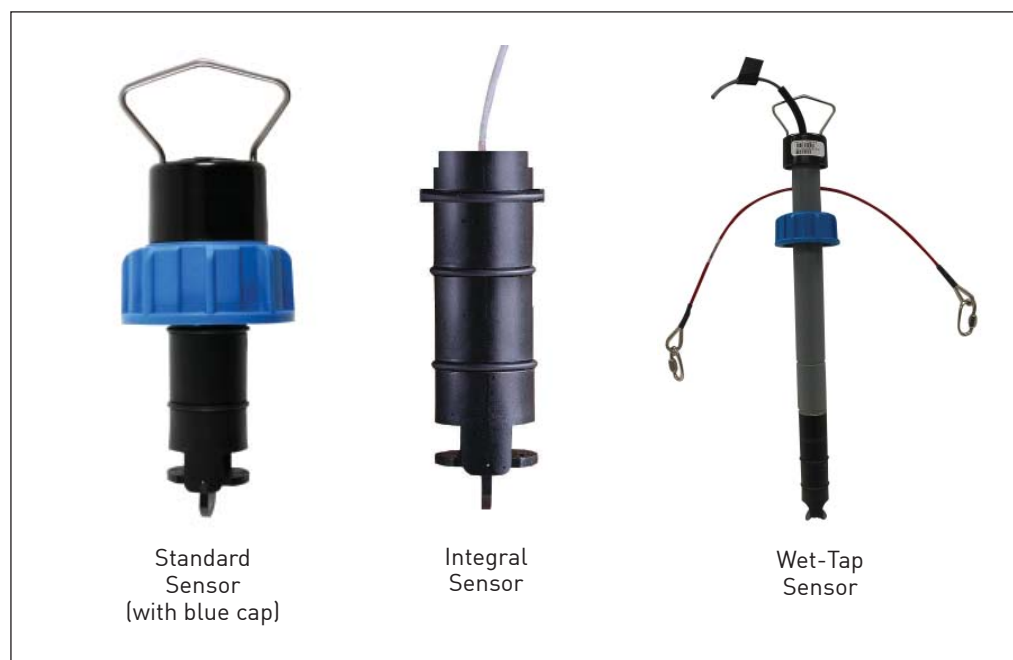
Mfr. Part No.	Code	Description
3-2507.080-2	198 801 550	Rotor, 2507
3-2507.080-3	198 801 547	Quad ring, 2507
3-2507.080-5	198 801 508	DIN connector, 2507
3-2507.081-2	198 801 502	2 mm insert
3-2507.081-3	198 801 503	3 mm insert
3-2507.081-4	198 801 558	4 mm insert
5523-0222	159 000 392	Cable (per foot), 2 cond. w/shield, 22 AWG

3-2507.099 Rev B (03/10)

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Signet 2536 Rotor-X Paddlewheel Flow Sensors



Features

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

Description

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.

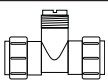
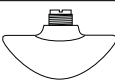
The Signet 2536 sensors are offered in a variety of materials for a wide

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 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.

Applications

- Pure Water Production
- Filtration Systems
- Chemical Production
- Liquid Delivery Systems
- Pump Protection
- Scrubbers/Gas stacks
- Gravity Feed Lines
- Not suitable for gases

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

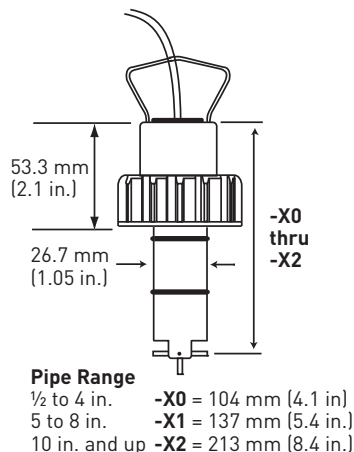
Panel Mount Signet Flow Instrument (sold separately) 5075 8550 5500 8900 5600 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately) 8550  Signet Universal Adapter Kit (3-8050) (sold separately) 	Integral Mount Signet Flow Instrument (sold separately) 8550  Signet Integral Adapter Kit (3-8051) (sold separately) 
Signet Model 2536 Standard or Wet-Tap (not shown) Flow Sensor 	Signet Model 2536 Standard or Wet-Tap (not shown) Flow Sensor 	Signet Model 2536 Integral Flow Sensor 
Signet Fittings* (sold separately) 	 	 

*See Fittings section for more information.

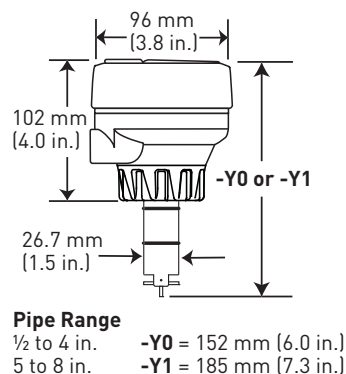


Dimensions

2536 Standard Mount Sensor

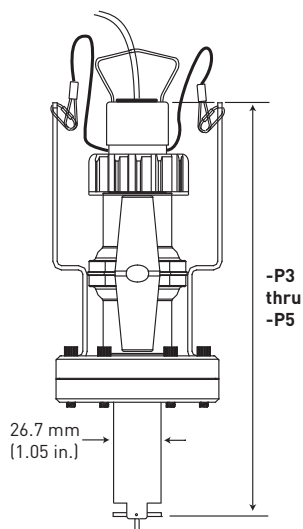


2536 Integral Mount Sensor shown with Transmitter (sold separately)



2536 Wet-Tap Mount Sensor with 3519 Wet-Tap Valve

See 3519 product page for more information.



Specifications

General

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

Pipe Size Range:
DN15 to DN900 (1/2 to 36 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) or PVDF (natural)

O-rings:
FPM (std)
optional EPR (EPDM) or FFPM

Rotor Pin:
Titanium, Hastelloy-C or PVDF;
optional Ceramic, Tantalum or Stainless Steel

Rotor:
Black PVDF or Natural PVDF; optional Tefzel®, with or w/o Fluoroloy G® 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 (1,000 ft) maximum

Max. Temperature/Pressure Rating

Standard and Integral 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)

Wet-Tap Sensor

PP: 7 bar @ 20 °C, 1.4 bar @ 66 °C (100 psi @ 68 °F, 20 psi @ 150 °F)

Operating Temperature:

-18 °C to 66 °C (0 °F to 150 °F)

Max. Wet-Tap Sensor Removal Rating:

1.7 bar @ 22 °C (25 psi @ 72 °F)

See Temperature and Pressure graphs for more information.

Shipping Weight

3-2536-X0	0.454 kg	1.00 lb
3-2536-X1	0.476 kg	1.04 lb
3-2536-X2	0.680 kg	1.50 lb
3-2536-X3	0.794 kg	1.75 lb
3-2536-X4	0.850 kg	1.87 lb
3-2536-X5	1 kg	2.20 lb
3-8512-X0	0.35 kg	0.77 lb
3-8512-X1	0.37 kg	0.81 lb

Standards and Approvals

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

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 is 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.

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

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 (standard cable length is 7.6 m/25 ft) by connecting the sensor through a standard 3-8050-1 universal junction box. Use Signet fittings for proper seating of the sensor into the process flow.

Sensor Part Number			
3-2536	Flow Sensor for use with remote mount instrument		
↓	Body/Rotor/Pin material - Choose One*		
	P	Polypropylene/Black PVDF/Titanium	
	T	Natural PVDF/Natural PVDF/Natural PVDF**	
	V	Natural PVDF/Natural PVDF/Hastelloy-C**	
	↓	Pipe size - Choose One	
		0	0.5 to 4 in.
		1	5 to 8 in.
		2	10 to 36 in.
3-2536	- P 0	Example Part Number	

**PVDF available ½ in. to 4 in. only

Mfr. Part No.*	Code	Mfr. Part No.*	Code
3-2536-P0	198 840 143	3-2536-T0	198 840 149
3-2536-P1	198 840 144	3-2536-V0	198 840 146
3-2536-P2	198 840 145	3-2536-V1	198 840 147

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.

Sensor Part Number			
3-8512	Flow Sensor for integral mounting on the 8150 or 8550 instrument using the 3-8051 adapter (instrument and adapter sold separately)		
↓	Body/Rotor/Pin material-Choose one*		
	P	Polypropylene/Black PVDF/Titanium	
	T	Natural PVDF/Natural PVDF/Natural PVDF**	
	V	Natural PVDF/Natural PVDF/Hastelloy-C**	
	↓	Pipe size - Choose one	
		0	½ to 4 in.
		1	5 to 8 in. (PP only)
3-8512	- V 0	Example Part Number	

**PVDF available ½ in. to 4 in. only

Mfr. Part No.*	Code	Mfr. Part No.*	Code
3-8512-P0	198 864 513	3-8512-T0	198 864 518
3-8512-P1	198 864 514	3-8512-V0	198 864 516

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

Option 1

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

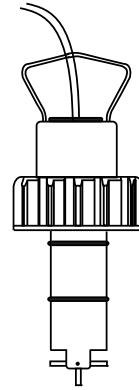
- Order the integral adapter kit 3-8051 (sold separately) to connect the sensor to an instrument.
- Order a field mount transmitter (sold separately). The following part numbers are compatible: 3-8550-1, 3-8550-2, 3-8550-3, 3-8150-1.

- Assembling the sensor with the integral adapter and instrument is quick and simple.

Option 2

These parts can also be ordered as an assembled part. See page 74 "Integral Mount" for more information.

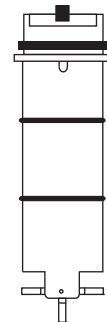
Model 2536 Standard Paddlewheel Flow Sensor



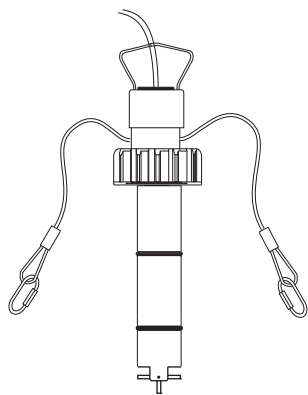
*Model 2536 Ordering Notes

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

Model 2536 Integral Mount Paddlewheel Flow Sensor



Model 2536 Wet-Tap sensor



*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.

Ordering Information (continued)

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 1000 ft (305 m) 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).

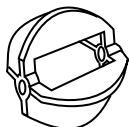
Sensor Part Number - Choose One			
3-2536 ↓	Flow Sensor for wet-tap mounting with the 3519 Wet-Tap Valve (sold separately)		
	Body/Rotor/Pin Material*		
	P	Polypropylene/Black PVDF/Titanium	
	↓	Pipe Size - Choose One	
		3	½ to 4 in.
		4	5 to 8 in.
		5	10 to 36 in.
3-2536	- P	3	Example Part Number

Mfr. Part No.*	Code
3-2536-P3	159 000 758
3-2536-P4	159 000 759
3-2536-P5	159 000 760

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.

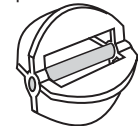
Rotor



Rotor Pin



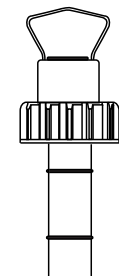
Sleeved Rotor (pin not included)



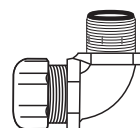
Sensor Cap



Sensor Plug



Conduit
Adapter Kit



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, Tefzel®
3-2536.321	198 820 054	Rotor and pin (matched set), PVDF Natural
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, Tefzel®
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	198 801 186	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)
Miscellaneous		
P31536	198 840 201	Sensor plug, Polypropylene
P31542-3	159 000 464	Sensor cap, Blue
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
3-8050	159 000 184	Universal mount kit
3-8051	159 000 187	Transmitter integral adapter (for use with 8510 and 8512)
3-8050-1	159 000 753	Universal junction box

3-2536.099 Rev A (01/10)

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Signet 2537 Paddlewheel Flow Sensor

Features

- Digital (S³L), or 4 to 20 mA 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 sensor bodies
- Installs into pipe sizes DN15 to DN200 (½ to 8 in.)
- Test certificate included for -X0, -X1
- Low power and high resolution

Description

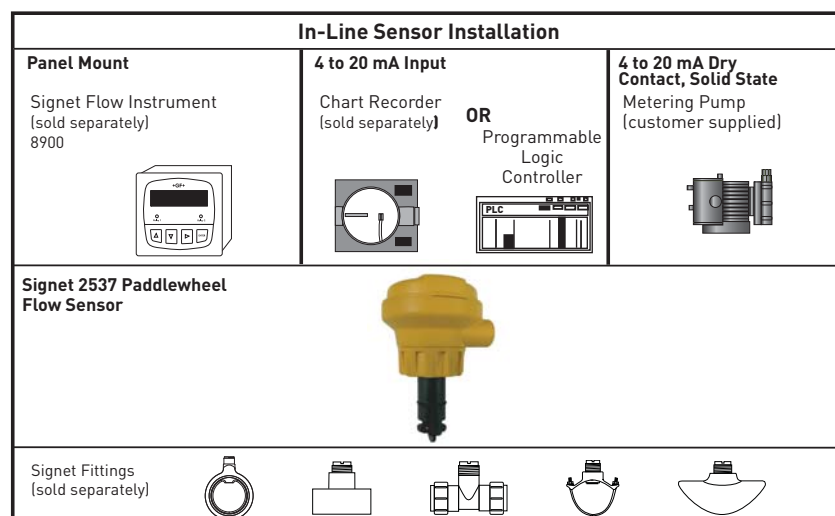
The Signet 2537 Flow Sensor is the next generation in fluid measurement technology from the inventor of the original paddlewheel flowmeter. This sensor is an improvement on what's already an industry standard. It has the added functionality of various output options including flow switch, multi-functional pulse, digital (S³L) or 4 to 20 mA. 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 (½ 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

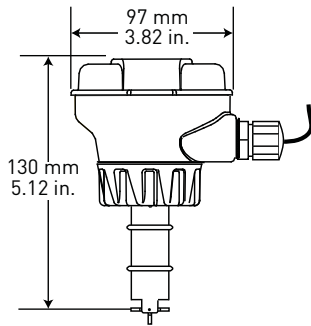
- Process Flow Monitoring
- Pump Protection
- Pure Water Production
- Filtration Systems
- Chemical Production
- Reverse Osmosis
- Demineralization/Regeneration
- Fume Scrubbers
- Cooling Towers
- Proportional Metering Pump

System Overview

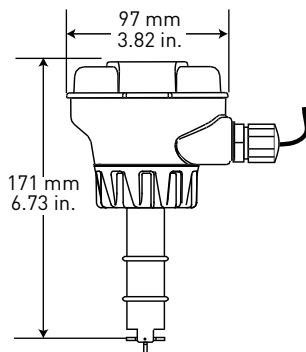


Dimensions

2537 Paddlewheel Flow Sensor for ½ in. to 4 in. pipe



2537 Paddlewheel Flow Sensor for 5 to 8 in. pipe



Specifications

General

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

Wetted Materials

Sensor Body:

Glass-filled PP (black) or PVDF (natural)

O-rings:

FPM (std)
optional EPR (EPDM) or FFPM

Rotor Pin:

Titanium, Hastelloy-C or PVDF;
optional Ceramic, Tantalum or
Stainless Steel

Rotor:

Black PVDF or Natural PVDF; optional
Tefzel®, with or w/o Fluoroloy G® sleeve
for rotor pin

Electrical

Pulse Version:

- With dry-contact relay:
24 VDC regulated, ±10%, regulated
30 mA max current
- With solid-state relay:
5 to 24 VDC nominal, ±10%, regulated
30 mA max current
- Maximum Pulse Rate: 300 Hz
- Maximum Pulse Width: 50 ms
- Compatible with PLC, PC or similar
equipment

Flow Switch Version:

- With dry-contact relay:
24 VDC regulated, ±10%, regulated
30 mA max current
- With solid-state relay:
5 to 24 VDC nominal, ±10%, regulated
30 mA max current
- Compatible with customer supplied
metering pump

Digital (S³L) Version:

- 5 VDC nominal, ±10%, regulated
3 mA max current
- Type: Serial ASCII, TTL level 9600 bps
- Max. Cable Length: Refer to Signet
8900 wiring specifications.
- Compatible with Model Signet 8900
controller

Electrical (continued)

4 to 20 mA Version:

- 12 VDC to 32 VDC nominal,
±10%, regulated
21 mA max current
 - 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:
600 Ω @ 24 VDC
1 KΩ @ 32 VDC
 - Load impedance 375 Ω
- Reverse Polarity and short circuit
protected:
- Up to 40 V, 1 hour
- Over-voltage protection:
- > 40 VDC over 1 hour

Relay Specifications

- Mechanical SPDT:
5 A @ 30 VDC, 5 A @ 250 VAC
- Solid-State Relay:
100 mA @ 40 VDC, 70 mA @ 33 VAC
- Relay Modes: Low, High
- Time Delay: 0.0 to 6400.0 seconds
- Hysteresis: Adjustable for exiting
alarm condition

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%, 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)

Environmental

Enclosure: NEMA 4X/IP65

Standards & Approvals

- CE
- UL, CUL
- Manufactured under ISO 9001
for Quality and ISO 14001 for
Environmental Management

Ordering Information

Sensor Part Number - Choose One					
3-2537	Paddlewheel Flow Sensor				
	Sensor Output Type				
	-1	Pulse Divider via Dry Contact Relay			
	-2	Pulse Divider via Solid-State Relay			
	-3	Flow Switch via Dry-Contact Relay			
	-4	Flow Switch via Solid-State Relay			
	-5	Digital (S ³ L) output			
	-6	4 to 20 mA output			
	C	Integral Mount (8512 sensors)	Material Options		
			-P	Polypropylene body, black PVDF rotor, Titanium pin, FPM O-rings	
			-T	Natural PVDF body, rotor and pin, FPM O-rings	
			Pipe Size		
0	DN15 to DN100 (½ to 4 inch)				
1	DN125 to DN200 (5 to 8 inch pipes)*				
3-2537	-1	C	-P	0	Example Part Number

*PVDF available ½ in. to 4 in. only

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

Application Tips

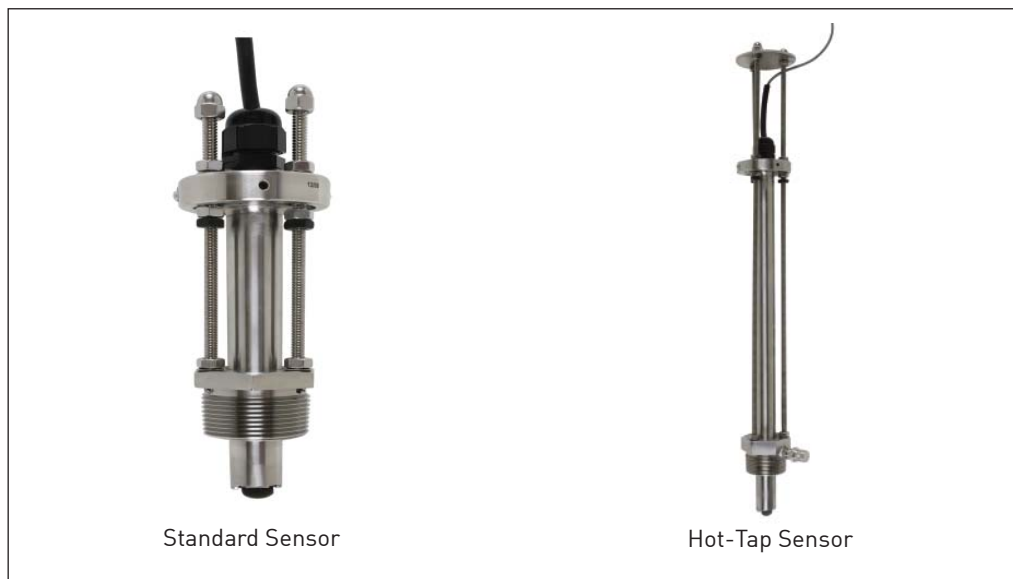
- Select PVDF Rotor Pin for use in Deionized Water.
- Use a sleeved rotor in abrasive liquids to reduce wear.
- Sensor plug is used to plug installation fitting after extraction of sensor from pipe.
- For liquids containing ferrous particles, use Signet Magmeters.
- For systems with components of more than one material, the maximum temperature/pressure specification must always be referenced to the component with the lowest rating.

Please refer to
Wiring, Installation,
and Accessories
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, Tefzel®
3-2536.321	198 820 054	Rotor and pin (matched set), PVDF Natural
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, Tefzel®
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	198 801 186	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)
Miscellaneous		
P31536	198 840 201	Sensor plug, Polypropylene
3-8050.396	159 000 617	RC Filter kit (for relay use)
3-9000.392-1	159 000 839	Liquid tight connector kit, NPT (1 piece)
3-9000.392-2	159 000 841	Liquid tight connector kit, PG13.5 (1 piece)
7300-7524	159 000 687	24 VDC power supply 7.5W, 300 mA
7300-1524	159 000 688	24 VDC power supply 15W, 600 mA
7300-3024	159 000 689	24 VDC power supply 30W, 1.3 A
7300-5024	159 000 690	24 VDC power supply 50W, 2.1 A
7300-1024	159 000 691	24 VDC power supply 100W, 4.2 A

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.

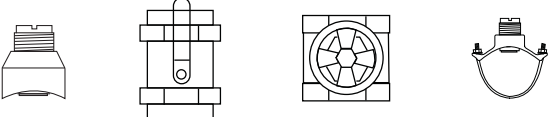
Features

- 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

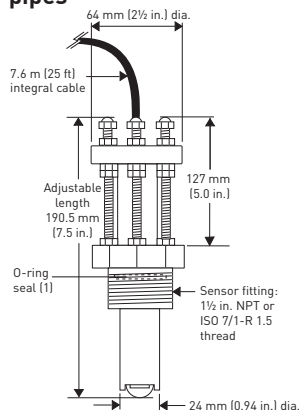
System Overview

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

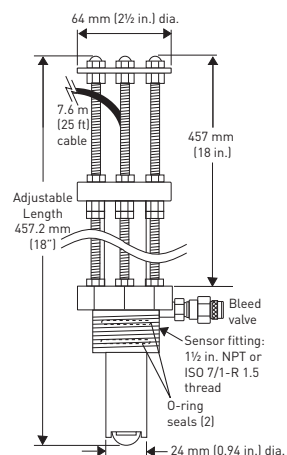


Dimensions

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

Signet 2551 Magmeter Flow Sensor



Available in a variety of wetted materials and ideal for pipe sizes up to DN900 (36 in.)



Description

The Signet 2551 Magmeter is an insertion style magnetic flow sensor that features no moving parts. The patented* sensor design is available in corrosion-resistant materials to provide long-term reliability with minimal maintenance costs. Material options include PP with stainless steel, PVDF with stainless steel, PVDF with Hastelloy-C, or PVDF with Titanium. Utilizing the comprehensive line of Signet installation fittings, sensor alignment and insertion depth is automatic. These versatile, simple-to-install sensors deliver accurate flow measurement over a wide dynamic range in pipe sizes ranging from DN15 to DN900 (½ to 36 inches), satisfying the requirements of many diverse applications.

Signet 2551 Magmeters offer many output options of frequency/digital (S³L) or 4 to 20 mA which are available on both the blind and display versions. The frequency or digital (S³L) sensor output can be

used with Signet's extensive line of flow instruments while the 4 to 20 mA output can be used for a direct input to PLCs, chart recorders, etc. Both the 4 to 20 mA output and digital (S³L) sensor interface is available for long distance signal transmission. An additional benefit is the empty pipe detection which features a zero flow output when the sensors are not completely wetted. Also, the frequency output is bi-directional while the 4 to 20 mA output can be set for uni- or bi-directional flow using the display or the 3-0250 USB to Digital (S³L) Configuration/Diagnostic setup tool which connects to PCs for programming capabilities.

In addition the display version of the 2551 Magmeter is available with relays and features permanent and resettable totalizer values which can be stored and seen on the display. Also, the display contains multi-languages with English, Spanish, German, French, Italian and Portuguese menu options.

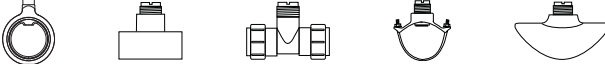
Features

- Test certificate included for -X0, -X1
- Patented Magmeter technology
- No moving parts
- Bi-directional flow
- Empty pipe detection
- Installs into pipe sizes DN15 to DN900 (0.5 to 36 in.)
- Operating range
0.05 to 10 m/s
(0.15 to 33 ft/s)
- Accurate measurement even in dirty liquids
- Blind 4 to 20 mA, digital/frequency, relay output
- No pressure drop
- Corrosion resistant materials; PP or PVDF with SS, Hastelloy-C, or Titanium
- Multi-language display menu available

Applications

- Chemical Processing
- Water and Waste Water Monitoring
- Metal Recovery and Landfill Leachate
- Commercial Pools, Spas, and Aquariums
- HVAC
- Irrigation
- Scrubber Control
- Neutralization Systems
- Industrial Water Distribution

System Overview

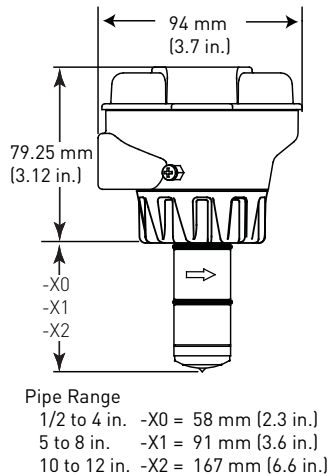
Stand-Alone	Panel Mount	Pipe, Tank, Wall Mount	4 to 20 mA Input
Signet 2551 Magmeter 	Signet Flow Instrument (sold separately) 5075 8550 5500 8900 5600 	Signet 8550 Flow Instrument (sold separately)  Signet Universal Adapter Kit (3-8050) (sold separately) 	Chart Recorder OR Programmable Logic Controller (or similar)  
Signet 2551 Magmeter  			
Signet Fittings (sold separately) 			



* U.S. Patent No: 7,055,396 B1

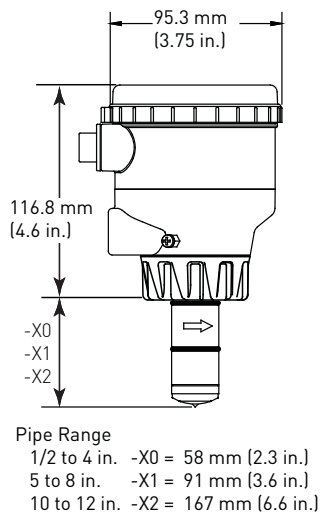
Dimensions

Blind Version



X = Sensor Body P, T, V, or W

Display Version



X = Sensor Body P, T, V, or W

Specifications

General

Operating Range:
 0.05 to 10 m/s [0.15 to 33 ft/s]
 Pipe Size Range: DN15 to DN900
 (1/2 in. to 36 in.)
 Linearity: $\pm 1\%$ reading plus 0.01 m/s
 (0.033 ft/s)
 Repeatability: $\pm 0.5\%$ of reading @ 25 °C
 (77 °F)
 Minimum Conductivity: 20 $\mu\text{S}/\text{cm}$

Wetted Materials

Sensor body/Electrodes and Grounding ring:

- -P0, -P1, -P2: PP/316L SS
- -T0, -T1, -T2: PVDF/Titanium
- -V0, -V1, -V2: PVDF/Hastelloy-C
- -W0, -W1, -W2: PVDF/316L SS

O-rings:

- FPM (standard)
- EPR (EPDM), FFPM (optional)

Case: PBT

Display Window: Polyamide

Protection Rating: NEMA 4X/IP65

Electrical

Power Requirements

- 4 to 20 mA: 24 VDC $\pm 10\%$, regulated, 22.1 mA max.
- Frequency: 5 to 24 VDC $\pm 10\%$, regulated, 15 mA max.
- Digital (S³L): 5 to 6.5 VDC, 15 mA max.
- Auxiliary (only required for units with relays): 9 to 24 VDC, 0.4 A max

Reverse polarity and short circuit protected

Current output (4 to 20 mA):

- Loop Accuracy: 32 μA max. error (25 °C @ 24 VDC)
- Isolation: Low voltage < 48 VAC/DC from electrodes and auxiliary power
- Maximum Cable: 300 m (1000 ft)
- Error condition: 22.1 mA
- Max. Loop Resistance: 300 Ω
- Compatible with PLC, PC or similar equipment
- 4 to 20 mA load needed

Frequency Output:

- Output Modes: Freq., or Mirror Relay (display version only)
- Max. Pull-up Voltage: 30 VDC
- Max. Current Sink: 50 mA, current limited
- Maximum Cable: 300 m (1000 ft)
- Compatible with Signet Model 5075, 5500, 5600, 8550, 8900

Digital (S³L) Output:

- Serial ASCII, TTL level 9600 bps
- Compatible with Model Signet 8900 controller

Relay Specifications

- #1, #2 Type: Mechanical SPDT
 Rating: 5 A @ 30 VDC max.,
 5 A @ 250 VDC max.
- #3 Type: Solid State
 Rating: 50 mA @ 30 VDC,
 50 mA @ 42 VAC

Hysteresis:

User adjustable for exiting alarm condition

Alarm On Trigger Delay:

Adjustable (0 to 9999.9 sec.)

Relay Modes:

Off, Low, High, Window, and Proportional Pulse

Relay Source:

Flow Rate, Resettable Totalizer

Error Condition:

Selectable; Fail Open or Closed

Display

Characters: 2 x 16

Contrast: User-set in four levels

Backlighting (only on relay versions):

Requires external 9-24 VDC,
 0.4 mA max.

Max. Temperature/Pressure Rating

Storage Temperature:

-20 °C to 70 °C [-4 °F to 158 °F]

Relative Humidity:

0 to 95% (non-condensing)

Operating Temperature:

- Ambient: -10 °C to 70 °C
 (14 °F to 158 °F)
- Media: 0 °C to 85 °C
 (32 °F to 185 °F)

Maximum Operating Pressure:

10.3 bar @ 25 °C (150 psi @ 77 °F)
 1.4 bar @ 85 °C (20 psi @ 185 °F)

See Temperature and Pressure Graphs for more information

Standards and Approvals

- CE
- UL, CUL (for display versions with relays)
- NEMA 4X / IP65 Enclosure (with cap installed)
- U.S. Patent No. 7,055,396 B1

Ordering Information

Sensor Part No.					
3-2551					
↓	Sensor Body (Transducer) and Electrodes/Grounding Ring Materials - Choose One				
	-P	Polypropylene and 316L SS			
	-T	PVDF and Titanium			
	-V	PVDF and Hastelloy-C			
	-W	PVDF and 316L SS			
	↓	Pipe Size - Choose One			
		0	DN15 to DN100 (½ to 4 in.)		
		1	DN125 to DN200 (5 to 8 in.)		
		2	DN250 to DN900 (10 to 36 in.)		
	↓	Display Options - Choose One			
		-1	No Display		
		-2	With Display, two SPDT relays, one solid state relay		
		-4	With Display		
	↓	Output Options - Choose One			
		1	Frequency, Digital (S³L), programmable open collector; for use with any Signet Flow Instrument or the 8900 Multi-Parameter Controller**		
		2	4 to 20 mA output; for use with PLC, PC or similar equipment		
3-2551	-P	0	-2	2	Example Part Number

**This option is a programmable open collector output that is available with display versions only.

Application Tips

- Note minimum process liquid conductivity requirement is 20 µs/cm
- Install sensor using standard Signet installation fittings for best results
- Sensor is capable of retrofitting into existing 515 and 2536 fittings.

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2551-P0-11	159 001 105	3-2551-V0-11	159 001 257
3-2551-P0-12	159 001 110	3-2551-V0-12	159 001 259
3-2551-P0-21	159 001 267	3-2551-V0-21	159 001 269
3-2551-P0-22	159 001 273	3-2551-V0-22	159 001 275
3-2551-P0-41	159 001 261	3-2551-V0-41	159 001 263
3-2551-P0-42	159 001 279	3-2551-V0-42	159 001 281
3-2551-P1-11	159 001 106	3-2551-V1-11	159 001 258
3-2551-P1-12	159 001 111	3-2551-V1-12	159 001 260
3-2551-P1-21	159 001 268	3-2551-V1-21	159 001 270
3-2551-P1-22	159 001 274	3-2551-V1-22	159 001 276
3-2551-P1-41	159 001 262	3-2551-V1-41	159 001 264
3-2551-P1-42	159 001 280	3-2551-V1-42	159 001 282
3-2551-P2-11	159 001 107	3-2551-V2-11	159 001 450
3-2551-P2-12	159 001 112	3-2551-V2-12	159 001 451
3-2551-P2-21	159 001 435	3-2551-V2-21	159 001 456
3-2551-P2-22	159 001 438	3-2551-V2-22	159 001 457
3-2551-P2-41	159 001 432	3-2551-V2-41	159 001 462
3-2551-P2-42	159 001 441	3-2551-V2-42	159 001 463
3-2551-T0-11	159 001 108	3-2551-W0-11	150 001 230
3-2551-T0-12	159 001 113	3-2551-W0-12	159 001 231
3-2551-T0-21	159 001 436	3-2551-W0-21	159 001 271
3-2551-T0-22	159 001 439	3-2551-W0-22	159 001 277
3-2551-T0-41	159 001 433	3-2551-W0-41	159 001 265
3-2551-T0-42	159 001 442	3-2551-W0-42	159 001 283
3-2551-T1-11	159 001 109	3-2551-W1-11	159 001 232
3-2551-T1-12	159 001 114	3-2551-W1-12	159 001 233
3-2551-T1-21	159 001 437	3-2551-W1-21	159 001 272
3-2551-T1-22	159 001 440	3-2551-W1-22	159 001 278
3-2551-T1-41	159 001 434	3-2551-W1-41	159 001 266
3-2551-T1-42	159 001 443	3-2551-W1-42	159 001 284
3-2551-T2-11	159 001 448	3-2551-W2-11	159 001 452
3-2551-T2-12	159 001 449	3-2551-W2-12	159 001 453
3-2551-T2-21	159 001 454	3-2551-W2-21	159 001 458
3-2551-T2-22	159 001 455	3-2551-W2-22	159 001 459
3-2551-T2-41	159 001 460	3-2551-W2-41	159 001 464
3-2551-T2-42	159 001 461	3-2551-W2-42	159 001 465

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
O-Rings		
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)
Replacement Transducers		
3-2551-P0	159 001 211	PP/316L SS, DN15 to DN100 (½ to 4 in.) pipe
3-2551-P1	159 001 212	PP/316L SS, DN125 to DN200 (5 to 8 in.) pipe
3-2551-P2	159 001 444	PP/316L SS, DN250 to DN900 (10 to 36 in.) pipe
3-2551-T0	159 001 213	PVDF/Titanium, DN15 to DN100 (½ to 4 in.) pipe
3-2551-T1	159 001 214	PVDF/Titanium, DN125 to DN200 (5 to 8 in.) pipe
3-2551-T2	159 000 445	PVDF/Titanium, DN250 to DN900 (10 to 36 in.) pipe
3-2551-V0	159 001 376	PVDF/Hastelloy-C, DN15 to DN100 (½ to 4 in.) pipe
3-2551-V1	159 001 377	PVDF/Hastelloy-C, DN125 to DN200 (5 to 8 in.) pipe
3-2551-V2	159 000 446	PVDF/Hastelloy-C, DN250 to DN900 (10 to 36 in.) pipe
3-2551-W0	159 001 234	PVDF/316L SS, DN15 to DN100 (½ to 4 in.) pipe
3-2551-W1	159 001 235	PVDF/316L SS, DN125 to DN200 (5 to 8 in.) pipe
3-2551-W2	159 001 447	PVDF/316L SS, DN250 to DN900 (10 to 36 in.) pipe
Replacement Electronics Module		
3-2551-11	159 001 215	Magmeter electronics, frequency or digital (S ³ L) output
3-2551-12	159 001 216	Magmeter electronics, 4 to 20 mA output
3-2551-21	159 001 372	Magmeter display electronics, frequency or digital (S ³ L) output, with relays
3-2551-22	159 001 373	Magmeter display electronics, 4 to 20 mA output w/relays
3-2551-41	159 001 374	Magmeter display electronics, frequency or digital (S ³ L) output
3-2551-42	159 001 375	Magmeter display electronics, 4 to 20 mA output
Other		
P31536	198 840 201	Sensor plug, Polypropylene
7300-7524	159 000 687	24 VDC power supply 7.5W, 300 mA
7300-1524	159 000 688	24 VDC power supply 15W, 600 mA
7300-3024	159 000 689	24 VDC power supply 30W, 1.3 A
7300-5024	159 000 690	24 VDC power supply 50W, 2.1 A
7300-1024	159 000 691	24 VDC power supply 100W, 4.2 A
3-8551.521	159 001 378	Clear plastic cap for display
1222-0042	159 001 379	O-ring for clear plastic cap, EPR (EPDM)
3-0250	159 001 538	USB to digital (S ³ L) Configuration/Diagnostic tool

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

Signet 2552 Metal Magmeter Flow Sensors



Description

The Signet 2552 Metal Magmeter from Georg Fischer features all-stainless steel construction. The PVDF nosepiece and FPM O-rings are the only other wetted materials. The 2552 installs quickly into standard 1¼ in. or 1½ in. pipe outlets, and is adjustable to fit pipes from DN50 to DN2550 (2 to 102 inches). Three sensor lengths allow maximum flexibility to accommodate a variety of hardware configurations, including ball valves for hot-tap installations.

When equipped with the frequency output, the 2552 is compatible with any externally powered Signet flow

instrument, while the S³L Digital output enables multi-channel compatibility with the Signet 8900 Multi-Parameter Controller. Select the blind 4 to 20 mA current output to interface directly with dataloggers, PLCs or telemetry systems. Key features include Empty Pipe Detection, LED-assisted troubleshooting, and bi-directional span capability (in 4 to 20 mA models).

The Signet 3-0250 USB to Digital (S³L) Configuration/Diagnostic Tool is available to customize every performance feature in the 2552 so it can be adapted to the user's application requirements.

Features

- Test certificate included for -X0, -X1
- Award winning hot-tap magnetic flow sensor up to DN2550 (102 in.)
- Patented Magmeter technology*
- Operating range 0.05 to 10 m/s (0.15 to 33 ft/s)
- Reliable operation in harsh environments
- Repeatable: ±0.5% of reading @ 25°C
- Three output options: 4 to 20 mA, Frequency, Digital (S³L)
- ISO or NPT Threads

Applications

- Municipal Water Distribution
- Process and Coolant Flow
- Chemical Processing
- Waste Water
- Mining Applications
- Water Process Flow

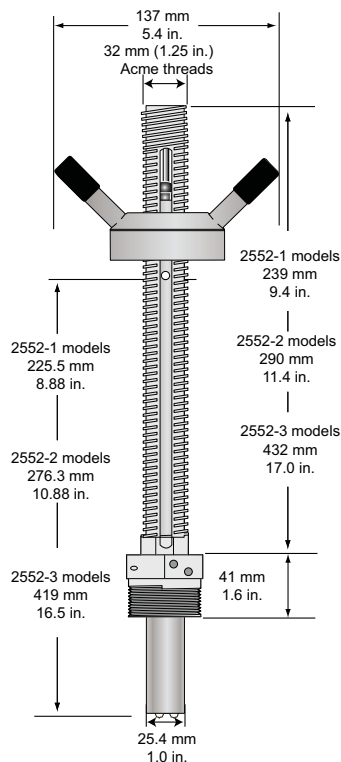


System Overview

In-line Installation		
Panel Mount Signet Flow Instrument (sold separately) 5075 5500 5600 8550 8900 	Pipe, Tank, Wall Mount Signet 8550 Flow Instrument (sold separately) Signet Universal Adapter Kit (3-8050) (sold separately) 	4 to 20 mA Input Chart Recorder OR Programmable Logic Controller OR
Signet 2552 Magmeter (standard or Hot-Tap) 		
ball or gate valve 1¼" or 1½"	nipple 1¼" or 1½"	
Weld-on weldolet 1¼" or 1½" outlet 	Iron strap-on saddle 1¼" or 1½" outlet 	

*U.S. Patent No.: 7,055,396 B1

Dimensions



Specifications

General

Operating Range:

- Minimum: 0.05 m/s (0.15 ft/s)
- Maximum: 10 m/s (33 ft/s) for pipes to DN1200 (48 in.)
3 m/s (10 ft./s) for pipes over DN1200 (48 in.)

Pipe Size Range:

DN50 to DN2550 (2 in. to 102 in.)

Linearity:

±(1% reading + 0.01 m/s)
±(1% reading + 0.033 ft/s)

Repeatability: ±0.5% of reading @ 25°C

Accuracy: ±2% of measured value*

*[in reference conditions where the fluid is water at ambient temperature, the sensor is inserted at the correct depth and there is a fully developed flow profile which is in compliance with ISO 7145-1982 (BS 1042 section 2.2)]

Minimum Conductivity: 20 µS/cm

Wetted Materials

- 316L stainless steel body and electrodes
- PVDF Insulator
- O-rings: FPM (standard)
- Cable: 4-cond + shield, PVC jacket (Fixed cable models) or Water-resistant rubber cable assembly with Turck® NEMA 6P connector

Power Requirements

- 4 to 20 mA:
24 VDC ±10%, regulated,
22.1 mA maximum
- Frequency:
5 to 24 VDC ±10%, regulated,
15 mA maximum
- Digital (S³L):
5 to 6.5 VDC 15 mA maximum
- Reverse polarity and short circuit protected

Cable Options

- Fixed 7.6 m (25 ft) cable
- Detachable water tight sensor cable with Turck® connector sold separately, two lengths: 4 m (13 ft) or 6 m (19.5 ft)

Electrical

Current Output (4 to 20 mA)

- Programmable and reversible
- Loop Accuracy:
32 µA max. error (@ 25°C @ 24 VDC)
- Temp. Drift: ±1 µA per °C max.
- Power Supply Rejection: ±1 µA per V
- Isolation: Low voltage < 48 VAC/DC from electrodes and auxiliary power
- Maximum Cable: 300 m (1000 ft)
- Max. Loop Resistance: 300 Ω
- Error Condition: 22.1 mA

Electrical (continued)

Frequency Output:

- Compatible with Signet 5075, 5500, 5600, 8550 and 8900
- Max. Pull-up Voltage: 30 VDC
- Short Circuit Protected:
≤30 V @ 0 Ω pull-up for one hour
- Reverse Polarity Protected to -40 V for 1 hour
- Overvoltage Protected to +40 V for 1 hour
- Max. Current Sink:
50 mA, current limited
- Maximum cable: 300 m (1000 ft)

Digital (S³L) Output:

- Compatible with Signet 8900
- Serial ASCII, TTL level 9600 bps
- Maximum Cable: Application dependent (See 8900 manual)

Max. Temperature/Pressure Rating

Storage Temperature:

-15 °C to 70 °C (5 °F to 158 °F)
in non-icing conditions

Operating Temperature

- Ambient:
-15 °C to 70 °C (5 °F to 158 °F)
in non-icing conditions
- Media:
-15 °C to 85 °C (5 °F to 185 °F)

Maximum Operating Pressure

20.7 bar @ 25 °C (300 psi @ 77 °F)

Hot-Tap Installation Requirements

- Maximum Installation Pressure:
20.7 bar (300 psi)
- Maximum Installation Temp (Insertion/Removal):
40 °C (104 °F)

Do not use hot-tap installation where temperatures will exceed 40 °C or if hazardous liquids are present.

Standards and Approvals

- CE
- U.S. Patent No.: 7,055,396 B1
- NEMA 4 (IP65) (fixed cable models)
- NEMA 6P (IP68) (Submersible cable models only)
Signet recommends maximum 3 m (10 ft) submersion depth for maximum 10 days continuous submersion.
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Sensor Selection Guide

The 2552 Magmeter can be installed into a variety of pipe sizes. Follow the steps below to ensure that you choose the right sensor for your application.

Step 1: Determine how the sensor will be installed

A. For standard (non Hot-Tap) installations:

The height of the weldolet (threadolet) and pipe adapter(s) should be determined before the sensor is purchased.

- For retrofit installations, the stack height, or "A" dimension (see Fig. 1), is the overall height from the top of the pipe to the highest point of the stack.
- Sensor tip must be positioned at 10% of pipe ID
- For new installations, Signet recommends a weldolet (threadolet) and an adapter to accommodate the 1¼ in. (or 1½ in. for 2552-3) sensor process threads. The stack height, or "A" dimension (see Fig. 1), is the overall height from the top of the pipe to the highest point of the stack before the sensor is connected

B. For Hot-Tap installations:

The stack height of the ball valve, nipple weldolet (threadolet) and pipe adapters should be determined before the sensor is purchased.

- For retrofit installations, the ball valve must be at least a 1¼ in. (or 1½ in. for 2552-3) valve. The stack height, or "A" dimension (see Fig. 2), is the overall height from the top of the pipe to the top of the ball valve.
- Sensor tip must be positioned at 10% of pipe ID
- For new installations, Signet recommends a 1¼ in. or 1½ in. full port ball valve, a short nipple and a weldolet (threadolet). The stack height or "A" dimension (see Fig. 2) is the overall height from the top of the pipe to the top of the ball valve before the sensor is connected.

Step 2: Determine how the sensor will be installed

Once the "A" dimension is determined, go to the sensor selection table and find your "A" dimension on the left column. Next, find the appropriate pipe size at the top of the chart. To determine the correct sensor size locate where the pipe size column meets the max "A" dimension row.

			Pipe Size																														
			inches																														
			DN	50	65	80 to 90	3 to 31/2"	4	5	6 to 8"	10	300 to 350	12 to 14"	16	18	20	22	24	26 to 28"	30 to 32"	34	36 to 38"	40 to 42"	48	54	60	66	72	78	84	102		
Max. "A" Dim	mm	inches	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	
	50.8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	
	63.5	2.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	3	3	3	
	76.2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3	3	3	3	
	88.9	3.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	3	3	3	3	3	3	
	101.6	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3
	114.3	4.5	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	127	5	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	139.7	5.5	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	152.4	6	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	165.1	6.5	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	177.8	7	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	190.5	7.5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	
	228.6	9	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	241.3	9.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	254	10	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	266.7	10.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	279.4	11	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	292.1	11.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	304.8	12	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
317.5	12.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
330.2	13	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
342.9	13.5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
355.6	14	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
375.9	14.8	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
381	15	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		

This chart is based on the thickest commonly available pipe.

Step 3: Refer to Ordering Information to select corresponding part numbers

Fig. 1
Standard installation with "A" dimension using a weldolet (threadolet)

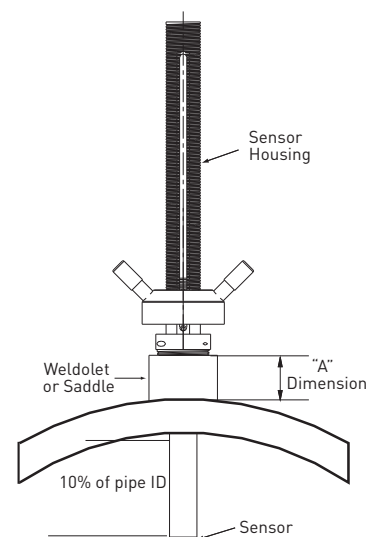
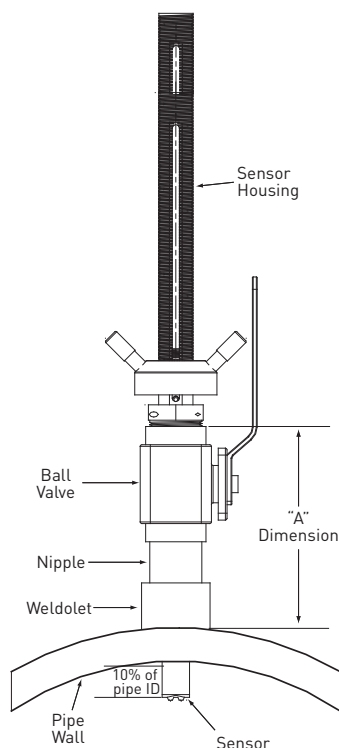


Fig. 2
Hot-Tap installation with "A" dimension using a ball valve, short nipple and weldolet (threadolet)



Model 2552**Ordering Notes**

- 1) Sensor insertion depth is the distance from the bottom of the sensor housing to the tip of the sensor.
- 2) Hot-Tap installations require a 1¼ in. or 1½ in. ball valve.
- 3) See Sensor Selection Guide on previous page to determine the sensor length required.

Application Tips

- Minimum process liquid conductivity requirement is 20 µS/cm.
- 1½ x 1¼ inch and 2 x 1¼ inch (2552-1 and 2552-2 only) retrofit adapters are available for replacement installations of Signet 2550 and 2540 sensors.

Ordering Information

Model 2552 Metal Magmeter Ordering Matrix					
3-2552	Mounting Depth Options - Choose One*				
↓	-1	Sensor insertion depth = 7.3 inches*			
	-2	Sensor insertion depth = 9.3 inches*			
	-3	Sensor insertion depth = 14.8 inches*			
	↓	Process Connection Options - Choose One			
		1	1¼ inch NPT process connection threads**		
		2	1¼ inch ISO process connection threads**		
		3	1½ inch (2552-3 only) NPT process connection threads**		
		4	1½ inch (2552-3 only) ISO process connection threads**		
	↓	Cable and Connector Options - Choose One			
		-A	Fixed Cable, 7.6 m (25 ft); no connector		
		-B	Watertight sensor connector; cable sold separately		
		↓	Output Options - Choose One		
			-11	Frequency or Digital (S³L); for use with any Signet Flow Instrument or the 8900 Multi-Parameter Controller	
	-12		4 to 20 mA output		
	↓				
3-2552	-1	1	-A	-12	Example Part Number

* Customer must determine stack height (ball valve, nipple, weldolet, etc.). Refer to Sensor Selection on previous page to determine "A" dimension. Sensor tip must be positioned at 10% of pipe ID.

** 1¼ inch process connection is the standard thread size on the 2552-1 and -2: For the 2552-3 the 1½ inch process connection is standard and the 1¼ inch is available as a special order.

Mfr. Part No.	Code
3-2552-11-A-11	159 001 505
3-2552-11-A-12	159 001 506
3-2552-11-B-11	159 001 507
3-2552-11-B-12	159 001 508
3-2552-12-A-11	159 001 509
3-2552-12-A-12	159 001 510
3-2552-12-B-11	159 001 511
3-2552-12-B-12	159 001 512

Mfr. Part No.	Code
3-2552-21-A-11	159 001 513
3-2552-21-A-12	159 001 514
3-2552-21-B-11	159 001 515
3-2552-21-B-12	159 001 516
3-2552-22-A-11	159 001 517
3-2552-22-A-12	159 001 518
3-2552-22-B-11	159 001 519
3-2552-22-B-12	159 001 520

Mfr. Part No.	Code
3-2552-33-A-11	159 001 521
3-2552-33-A-12	159 001 525
3-2552-33-B-11	159 001 523
3-2552-33-B-12	159 001 527
3-2552-34-A-11	159 001 522
3-2552-34-A-12	159 001 526
3-2552-34-B-11	159 001 524
3-2552-34-B-12	159 001 528

Accessories and Replacement Parts

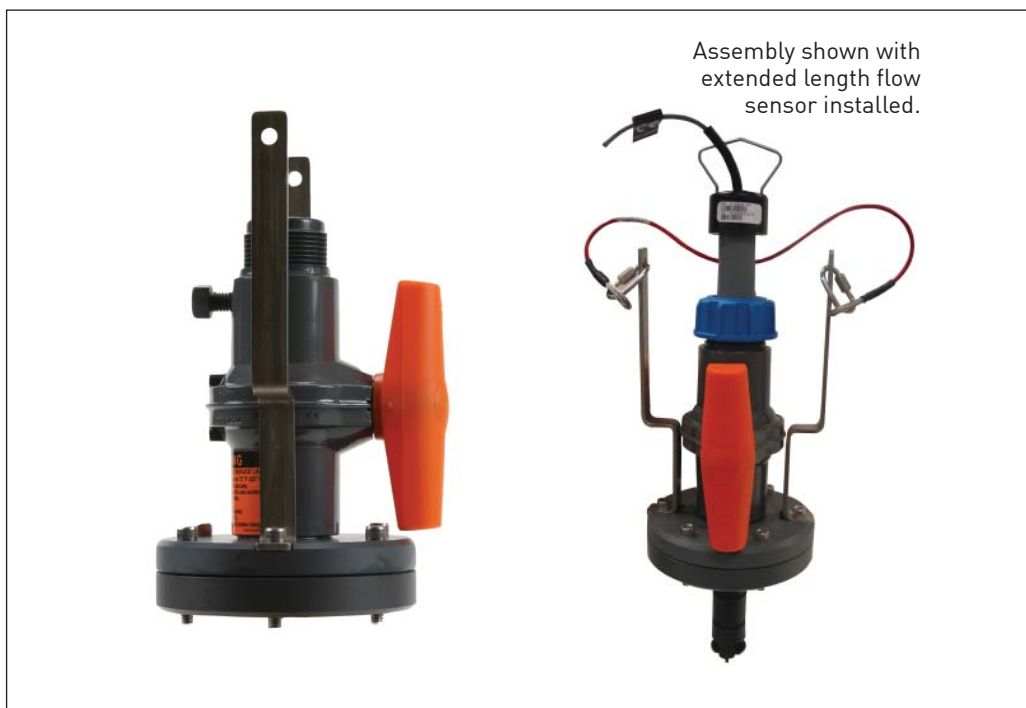
Mfr. Part No.	Code	Description
2120-1512	159 001 425	1½ x 1¼ inch NPT adapter for retrofitting 2540 installation to 2552 - 316 SS
2120-2012	159 001 426	2 x 1¼ inch NPT adapter for retrofitting 2550 installation to 2552 - 316 SS
3-2552.392	159 001 530	1¼ inch NPT full port stainless steel ball valve and nipple kit
3-2552.393	159 001 531	1¼ inch NPT full port brass ball valve & nipple kit
3-2552.394	159 001 532	1½ inch NPT conduit adapter, aluminum for -1 and -2 units
4301-2125	159 001 533	1¼ inch NPT full port ball valve - brass
4301-3125	159 001 387	1¼ inch NPT full port ball valve - stainless steel
5541-4184	159 001 388	4-conductor, 22 AWG, water-tight connector, 4 m (13 ft)
5541-4186	159 001 389	4-conductor, 22 AWG, water-tight connector, 6 m (19.5 ft)
special order	special order	4-conductor, 22 AWG, water-tight connector, cable length in 25 ft increments
special order	special order	1¼ in. NPT or ISO process connection threads to replace 1½ in. NPT or ISO threads
3-0250	159 001 538	USB to Digital (S ³ L) Configuration/Diagnostic tool

3-2552.099 Rev A (01/10)

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Signet 3519 Flow Wet-Tap Valve



Description

The Signet 3519 Flow Wet-Tap Valve serves as a unique interface between the installation fitting and the wet-tap style Signet 515 or 2536 Rotor-X flow sensor. It provides a fast method of removing the sensor from the pipe under specified operating pressures. The PVC and stainless steel design of the Wet-Tap makes it resistant to corrosion and chemical attack by acids, alkalies, salt, and a number of other harsh chemicals.

The Signet 3519 Wet-Tap Valve mounts directly onto standard Signet installation fittings. The 3519 Wet-Tap consists of a flange and support plate that threads onto the pipe fitting insert, and a PVC ball valve through which an extended length sensor is inserted into the pipe.

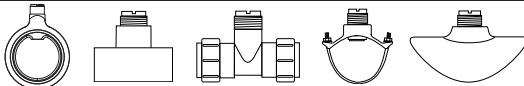
Features

- Allows sensor removal without process shutdown
- Pressure release valve for safe sensor removal
- Dual safety lanyards
- Rugged corrosion-resistant PVC construction and stainless steel hardware
- Compatible with Signet 515 or 2536 Rotor-X Wet-Tap Flow Sensors
- Eliminates process downtime

Applications

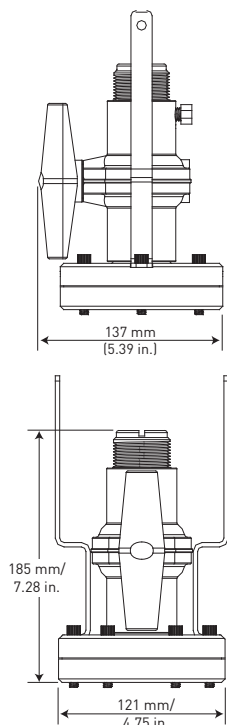
- Filtration Systems
- Chemical Production
- Pump Protection
- Scrubbers
- Water Distribution
- Effluent Totalization
- Process Cooling Loops

System Overview

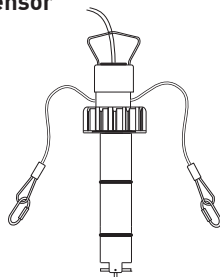
Panel Mount Signet Flow Instrument (sold separately) 	Pipe, Tank, Wall Mount Signet Flow Instrument (sold separately)  Signet Universal Adapter Kit (3-8050) (sold separately) 
Signet Wet-Tap Mount Flow Sensor (sold separately) 515 2536   Signet 3519 Flow Wet-Tap Valve	
Signet Fittings* (sold separately) 	

*See Fittings section for more information.

Dimensions



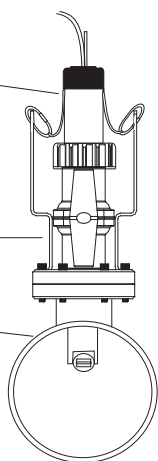
Model 515 or 2536 Wet-Tap Sensor



Signet 515/2536
Extended Flow
Sensor

Signet 3519
Wet-Tap
Assembly

Signet Pipe
Fitting



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

Specifications

General

Body: PVC
Ball Seat: PTFE
Seals: FPM (std) or EPR (EPDM)
also available, contact
factory
Hardware: 302/304SS (brackets),
18/8SS (nuts & bolts)

Shipping Weight 1.3 kg 2.86 lb

Standards & Approvals

- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

See Temperature and Pressure graphs for more information.

Max. Pressure/Temperature Rating

- 7 bar max. @ 20 °C
(100 psi max. @ 68 °F)
- 1.4 bar max. @ 66 °C
(20 psi max. @ 150 °F)

Wet-Tap Maximum Installation/Removal

Rating:
1.7 bar @ 22 °C (25 psi @ 72 °F)

Application Tips

- Once installed, sensor insertion and removal can be performed without process shutdown; see installation/removal pressure specifications page.
- Use the Conduit Adapter Kit when used in outdoor environments. See Accessories section.
- For liquids containing ferrous particles, use Signet Magmeters.
- Use sensors with sleeved rotors in abrasive liquids to reduce wear.
- For systems with components of more than one material, maximum temperature and pressure specifications must always be referenced to the component with the lowest rating.

Ordering Information

Part Number		
3-3519	Wet-Tap Valve for 515 and 2536 Wet-Tap flow sensors	
	Flow Range	
	N/C	Valve only
	515-P3*	Valve with Model 515 sensor for ½ to 4 inch pipes
	515-P4*	Valve with Model 515 sensor for 5 to 8 inch pipes
	515-P5*	Valve with Model 515 sensor for 10 to 36 inch pipes
	2536-P3**	Valve with Model 2536 sensor for ½ to 4 inch pipes
	2536-P4**	Valve with Model 2536 sensor for 5 to 8 inch pipes
	2536-P5**	Valve with Model 2536 sensor for 10 to 36 inch pipes
3-3519	Example Part Number - Valve Only	
3-3519	/515-P3	Example Part Number - Valve with Sensor

Model 3519

Ordering Notes

- 1) N/C = no code needed.
- 2) *See model 515 data sheet for sensor specifications.
- 3) **See model 2536 data sheet for sensor specifications.
- 4) Models 515 and 2536 Wet-Tap sensors can be ordered separately.

Components	Mfr. Part No./Code
3-3519	159 000 757
3519/515-P3	159 000 819
3519/515-P4	159 000 820
3519/515-P5	159 000 821

Components	Mfr. Part No./Code
3519/2536-P3	159 000 822
3519/2536-P4	159 000 823
3519/2536-P5	159 000 824

3-3519.099 Rev B (01/10)

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Signet 5075 Totalizing Flow Monitor

Member of the ProPoint® Family of Monitors



Analog and Digital Display

Description

The Signet 5075 Totalizing Flow Monitor features a traditional analog dial for flow rate at a glance while the backlit LCD provides precision flow rate, total volume and programming information.

Significant features of this 5075 include user selectable analog dials, permanent and resettable totalizers and pulse

outputs at sensor frequency and at totalizer scale. The 5075 is powered by virtually any 12 to 24 VDC or VAC $\pm 10\%$, regulated power source.

Connect to any of Signet's flow sensors for a classic flow meter system.

Features

- Permanent and resettable totalizers
- Tamper proof security code
- Non-volatile memory
- Simple push-button operation
- Pulse outputs at sensor frequency and at total volume
- 1/4 DIN, NEMA 4X/IP65
- Remote totalizer reset

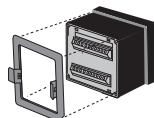
Applications

- Waste Water Flow Accumulation
- Water Treatment Systems
- Filtration Systems
- Feed Pump Pulsing
- Fertigation
- Irrigation
- Commercial Pools & Spas
- Groundwater Remediation
- HVAC
- Process Flow Monitoring
- UPW Distribution
- Demineralizer Regeneration
- Process Cooling Water
- Neutralization Systems

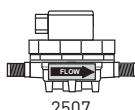
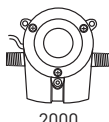
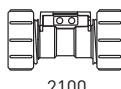
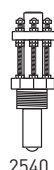
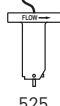
System Overview

Panel Mount

Signet 5075 Flow Instrument
includes mounting bracket and panel gasket



Signet Flow Sensor
(sold separately)

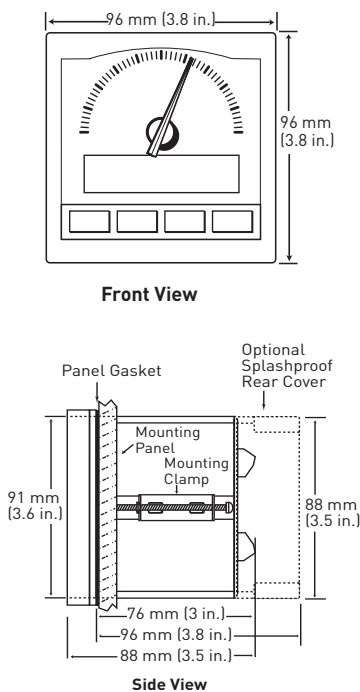


Signet Fittings
or end connectors
as required (sold separately)

See individual sensor catalog pages for required sensor mounting accessories.



Dimensions



Model 5075

Ordering Notes

- 1) Panel cutout should be 92 x 92 mm (3.62 x 3.62 in.)
- 2) Reversible dials are included and are scaled from 0 to 2, 0 to 4, 0 to 6, 0 to 8, 0 to 10, and 0 to 100.
- 3) Optional splash proof rear cover can be ordered separately.
- 4) Flow rate unit tags are provided for labeling dials appropriately in units of gpm, lpm, etc.

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

Specifications

General

Operating Range: 0.5 Hz to 10 kHz

Accuracy: $\pm 0.5\%$ of reading

Display:

- Analog:
Six slide-in dial ranges - 0 to 2, 4, 6, 8, 10 & 100 w/multipliers
- Digital:
Backlit LCD, 2x16 alphanumeric character

Additional Functions:

Sensor pulse output, volumetric pulse output, Remote totalizer reset

Materials

- Enclosure: ABS Plastic
- Keypad: Silicone Rubber
- Panel and case gasket: Neoprene
- Window: Hard-coated polycarbonate

Electrical

Power Requirements:

12 to 24 VAC or VDC $\pm 10\%$, regulated recommended, 50 to 60 Hz, 10W max.

Environmental

Operating Temperature:

-10 °C to 55 °C (14 °F to 131 °F)

Relative Humidity:

0 to 95%, non-condensing

Enclosure: NEMA 4X/IP65 front

Shipping Weight 0.8 kg 1.8 lb

Standards and Approvals

- UL, CE, CUL
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Ordering Information

Mfr. Part No.	Code	Description
3-5075	198 825 007	5075 Totalizing Flow Monitor

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Mounting		
3-5000.395	198 840 227	Splashproof rear cover kit
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-0000.596	159 000 641	Heavy duty wall mount bracket (panel mount only)
3-5000.399	198 840 224	5 x 5 inch adapter plate to retrofit older Signet installations
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid tight connector kit (includes 3 connectors)
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)
Replacement Parts		
3-5000.390	159 000 323	Installation kit (ProPoint® screws, clamps, mounting brackets)
3-5000.525-1	198 840 226	Bezel, 5000 series
3-5500.390	159 000 347	Dial kit
3-5500.611	159 000 348	Unit tags
3-5000.397	159 000 326	5000 series window (window, keypad, & screw)
Other		
3-5000.398	159 000 646	Protective overlay kit (10 pcs.)
3-5000.075	159 000 321	110V/24 VAC transformer
6400-9001	159 001 466	Intrinsic safety barrier (2 required)

Signet 5090 Sensor-Powered Flow Monitor

Member of the ProPoint® Family of Monitors



Sensor Powered - external power not required.

Features

- High visibility analog display
- Sensor-powered flow rate indication up to 60 m (200 ft) from sensor installation
- Wide flow range: 1 to 20 ft/s in pipe sizes DN15 to D900 (½ to 36 in.)
- Single-point calibration from front panel
- Factory Mutual (FM) approved for intrinsic safety in Classes I, II and III, Division I

Description

The Signet 5090 Sensor Powered Flow Monitor is the simplest and most economical instrument in the Signet offering. It features a balanced-spring meter movement that is powered by the AC output of the Signet 515 Paddlewheel Flow Sensor. No additional power source is required.

This unique system is suitable for a wide range of flow rates, and is Factory Mutual (FM) approved for intrinsic safety without the need for barriers. Packaged in a ¼ DIN housing with a NEMA 4X/IP65 front panel, the 5090 is the first choice for simple flow monitoring, even in the most demanding industrial environments.

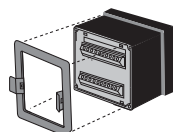
Applications

- Filtration Systems
- Hazardous Locations
- Remote Flow Monitoring
- Process Cooling Water
- Distribution Systems
- HVAC
- Process Flow Monitoring

System Overview

Panel Mount

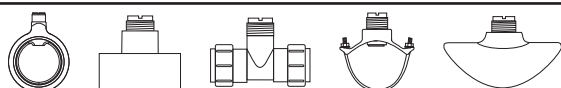
Signet Flow Instrument
(includes mounting bracket and panel gasket)



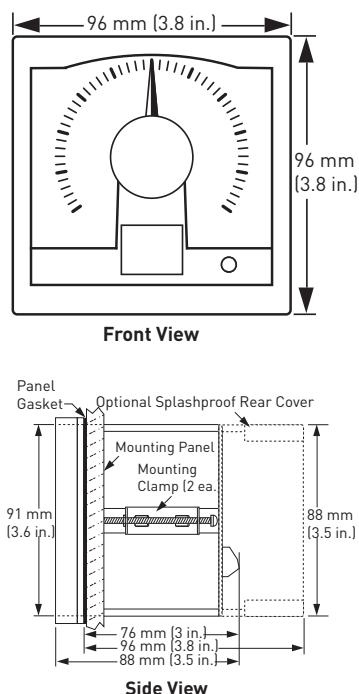
Signet 515 Flow Sensor only
(sold separately)



Signet Fittings
(sold separately)



Dimensions



Model 5090

Ordering Notes

- 1) Panel cutout should be 92 x 92 mm (3.62 x 3.62 in.)
- 2) Reversible dials are included and are scaled from 0 to 2, 0 to 4, 0 to 6, 0 to 8, 0 to 10, and 0 to 100.
- 3) An optional splash proof rear cover can be ordered separately if needed for most environments.
- 4) Flow rate unit tags are provided for labeling dials appropriately in units of gpm, lpm, etc.

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

Specifications

General

Operating Range:

- 0.3 to 6 m/s (1 to 20 ft/s) in pipes
DN15 to DN900 (½ to 36 in.)
- 7 ft/s (min. full scale range)

Reversible dial face kit includes
ranges 0 to 2, 4, 6, 8 and 100.

Display:

Taut-band suspension meter movement,
250° deflection (not suitable for
prolonged exposure to vibration)

Repeatability: ±1% of full scale

Materials

- Enclosure: ABS Plastic
- Panel and case gasket: Neoprene
- Window: Hard-coated polycarbonate

Electrical

Power Requirements: None

Environmental

Operating Temperature:

-10 °C to 65 °C (14 °F to 149 °F)

Relative Humidity:

0 to 95%, non-condensing

Enclosure: NEMA 4X/IP65 front

Shipping Weight 0.45 kg 1 lb

Standards and Approvals

- FM, UL, CUL
- Manufactured under ISO 9001
for Quality and ISO 14001 for
Environmental Management

Ordering Information

Mfr. Part No	Code	Description
3-5090	198 825 000	5090 Sensor-Powered Flow Monitor

Accessories and Replacement Parts

Mfr. Part No	Code	Description
Mounting		
3-5000.395	198 840 227	Splashproof rear cover kit
3-5000.399	198 840 224	5 x 5 inch adapter plate to retrofit older Signet installations
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-0000.596	198 000 641	Heavy duty wall mount bracket (panel mount only)
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid tight connector kit (includes 3 connectors)
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)
Replacement parts		
3-5000.390	159 000 323	Installation kit (ProPoint® screws, clamps, and mounting brackets)
3-5000.396	159 000 325	5090 window kit
3-5000.525-1	198 840 226	Bezel, 5000 series
3-5090.390	159 000 334	Dial kit
3-5090.611	198 840 228	Unit tags
3-5000.396	159 000 325	5090, 5091 window Kit

Signet 5500 Flow Monitor

Member of the ProPoint® Family of Monitors



Featuring analog and digital displays and a remote resettable totalizer.

Description

The Signet 5500 Flow Monitor is an instrument that comes fully equipped with all of the basic tools needed for monitoring and controlling a flow system. The analog dial enables the user to easily read instantaneous flow rate, while the backlit LCD is useful for calibration, setup, and displaying totalized flow volume. The 5500 features a standard 1/4 DIN package and removable wiring terminals. Power the instrument with virtually any standard 24-volt power supply (AC or DC).

Connect any one of Signet's wide array of flow sensors, then consider which output features are best for your application.

Two dry-contact relays can be configured for High or Low alarm operation, or they can be set to pulse operation for chemical dosing applications.

Use the internally powered 4 to 20 mA output, programmable from the front keypad, to send the flow information to any PLC or data logger.

If you use all of these output features, you still have two more output pulse terminals, one at sensor frequency, the other triggered by the totalizer. And just for added convenience, the resettable totalizer can be reset by a remote hard-wired switch, up to 30 m (100 ft), or from the front keypad.

Features

- Permanent and resettable totalizers
- Two programmable relays
- Fully scaleable active (internally powered) 4 to 20 mA output
- Tamper proof security code
- Non-volatile memory
- Intuitive software design
- Programmable pulse outputs

Applications

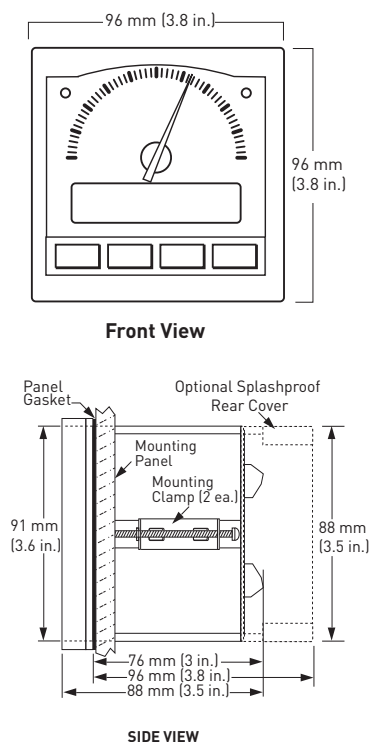
- Waste Water Flow Accumulation
- Water Treatment Systems
- Filtration Systems
- Feed Pump Pulsing
- Fertigation
- Irrigation
- Commercial Pools & Spas
- Groundwater Remediation
- HVAC
- Process Flow Monitoring
- UPW Distribution
- Demineralizer Regeneration
- Process Cooling Water
- Neutralization Systems

System Overview

Panel Mount Signet 5500 Flow Instrument (includes mounting bracket and panel gasket)	
Signet Flow Sensor (sold separately)	
Signet Fittings or end connectors as required (sold separately)	



Dimensions



Specifications

General

Operating Range: 0.5 Hz to 10kHz
Accuracy: $\pm 0.5\%$ of reading
Display:

- Analog:
Six slide-in dial ranges - 0 to 2, 4, 6, 8, 10 & 100 w/multipliers
- Digital:
Backlit LCD, 2x16 alphanumeric character
- Additional Functions:
Sensor pulse output, volumetric auxiliary pulse output, remote totalizer reset

Materials

- Enclosure: ABS Plastic
- Keypad: Silicone Rubber
- Panel and case gasket: Neoprene
- Window: Hard-coated polycarbonate

Electrical

- Power Requirements:
12 to 24 VAC or DC $\pm 10\%$, regulated recommended, 50 to 60 Hz, 10W max.
- Current Output:
- 4 to 20 mA, non-isolated, active, internally powered

Electrical (continued)

- Loop Impedance:
350 Ω max. @ 12 V
950 Ω max. @ 24 V
- Accuracy: $\pm 0.1\%$
- Update Rate: 100 msec
- Alarm Contacts:
 - Two SPDT relays: High/Low/Pulse programmable with adj. hysteresis for exiting alarm condition
 - 5 A @ 30 VDC
 - 5 A @ 125 VAC
 - 3 A @ 250 VAC max.

Environmental

Operating Temperature:
-10 °C to 55 °C (14 °F to 131 °F)
Relative Humidity:
0 to 95%, non-condensing
Enclosure: NEMA 4X/IP65 front

Shipping Weight 0.8 kg 1.8 lb

Standards and Approvals

- UL, CE, CUL
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Ordering Information

Mfr. Part No	Code	Description
3-5500	198 825 002	5500 Flow Monitor

Model 5500

Ordering Notes

- 1) Panel cutout should be 92 x 92 mm (3.62 x 3.62 in.)
- 2) Reversible dials are included and are scaled from 0 to 2, 0 to 4, 0 to 6, 0 to 8, 0 to 10, and 0 to 100.
- 3) An optional splash proof rear cover can be ordered separately if needed.
- 4) Flow rate unit tags are provided for labeling dials appropriately in units of gpm, lpm, etc.

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

Accessories and Replacement Parts

Mfr. Part No	Code	Description
Mounting		
3-5000.395	198 840 227	Splashproof rear cover kit
3-5000.399	198 840 224	5 x 5 inch adapter plate to retrofit older Signet installations
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-0000.596	198 000 641	Heavy duty wall mount bracket (panel mount only)
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid tight connector kit (includes 3 connectors)
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)
Replacement Parts		
3-5000.390	159 000 323	Installation kit (ProPoint® screws, clamps, mounting brackets)
3-5000.525-1	198 840 226	Bezel, 5000 series
3-5500.390	159 000 347	Dial kit
3-5500.611	198 840 230	Unit tags
3-5000.397	159 000 326	5000 series window (window, keypad, & screws)
Other		
3-5000.398	159 000 646	Protective overlay kit (10 pcs.)
3-5000.075	159 000 321	110V/24 VAC transformer
3-8050.396	159 000 617	RC filter kit (for relay use)

Signet 5600 Batch Controller

Member of the ProPoint® Family of Monitors



Analog dial displays batch process; Digital LCD Displays Totalizer

Description

The Signet 5600 Batch Controller provides control capability and process fine-tuning in a familiar package. The programming interface uses a four-button keypad and an intuitive procedure for adjusting a batching system to the best performance possible.

The standard ¼ DIN package houses an analog display panel that features a batch status indicator with count-up or count-down dials. The backlit LCD displays flow rate and volume information and batch status, as well as calibration and setup instructions. The front of the unit is NEMA 4X/IP65 and is hard-coated, high-impact and UV resistant polycarbonate.

The 5600 operates on 12 to 24 volts $\pm 10\%$, regulated, either AC or DC. Removable terminal connections make wiring the 5600 easy. Connect any Signet flow sensor with a frequency output, then add connections to two relays for two-stage shutdown or overrun alarm functions, connect a remote start-stop switch and use the end-of-batch pulse to trigger the next step in the process. A 4 to 20 mA output is also available. Advanced features include a user-set security code, an automatic calibration option, and overrun compensation.

Features

- Permanent and resettable totalizers
- Non-volatile memory
- Easy batch volume entry
- Remote start, stop & resume
- Two-stage shutdown control
- Manual or automatic overrun compensation
- Estimates time to batch completion
- Overrun alarm and missing signal alarm
- Advanced valve control
- End-of-batch trigger
- Count-up or count-down to batch completion

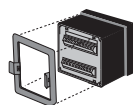
Applications

- Batch Processes
- Filter Backwash Initiation
- Chemical Addition
- Canning & Bottling

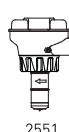
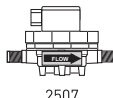
System Overview

Panel Mount

Signet 5600
Flow Instrument
(includes mounting bracket and panel gasket)



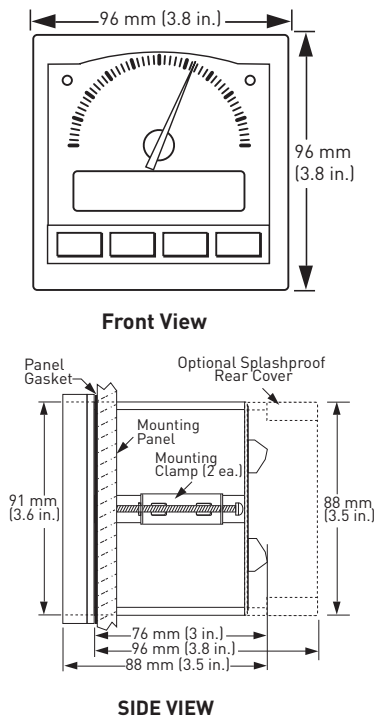
Signet Flow Sensor
(sold separately)



Signet Fittings
or end connectors as required
(sold separately)



Dimensions



Model 5600

Ordering Notes

- 1) Panel cutout should be 92 x 92 mm (3.62 x 3.62 in.)
- 2) A reversible dial is included and is scaled from 0 to 100 and 100 to 0.
- 3) An optional splash proof rear cover can be ordered separately if needed.

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

Specifications

General

Operating Range:

0.5 Hz to 10 kHz, optically isolated

Accuracy: $\pm 0.5\%$ of reading

Display:

- Analog:
Reversible dial - 0 to 100% or 100 to 0%
- Digital:
Backlit LCD, 2 x 16 alphanumeric character
- Batch Size:
0 to 999,999 engineering units
- Dual Totalizer: 8-digit resettable and non-resettable
- Additional Functions:
End of batch pulse, remote start, stop & resume. Batch in progress. Batch completion, valve control or end of batch
- Option:
Two-stage shutdown, overrun alarm, end of batch, or missing signal alarm

Materials

- Enclosure: ABS Plastic
- Keypad: Silicone Rubber
- Panel and case gasket: Neoprene
- Window: Hard-coated polycarbonate

Electrical

Power Requirements:

12 to 24 VAC or DC $\pm 10\%$,
regulated recommended,
50 to 60 Hz, 10W max.

Current Output

- 4 to 20 mA, non-isolated, active, internally powered
- Loop Impedance:
350 Ω max. @ 12 V
950 Ω max. @ 24 V
- Accuracy: $\pm 0.1\%$

Alarm Contacts

- Two SPDT relays:
5 A @ 30 VDC
5 A @ 125 VAC
3 A @ 250 VAC max.

Environmental

Operating Temperature:

-10 °C to 55 °C (14 °F to 131 °F)

Relative Humidity:

0 to 95%, non-condensing

Enclosure: NEMA 4X/IP65

Shipping Weight 0.8 kg 1.8 lb

Standards and Approvals

- CE, UL, CUL
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Ordering Information

Mfr. Part No	Code	Description
3-5600	198 825 006	Batch Controller

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Mounting		
3-5000.395	198 840 227	Splashproof rear cover kit
3-5000.399	198 840 224	5 x 5 inch adapter plate to retrofit older Signet installations
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-0000.596	159 000 641	Heavy duty wall mount bracket (panel mount only)
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid tight connector kit for rear cover (includes 3 connectors)
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)
Replacement Parts		
3-5000.390	159 000 323	Installation kit (ProPoint® screws, clamps, and mounting brackets)
3-5000.397	159 000 326	5000 series window kit (window, keypad, & screw)
3-5000.525-1	198 840 226	Bezel, 5000 series
3-5600.360	159 000 887	Replacement dial
3-5500.611	198 840 230	Unit tags
Other		
3-5000.398	159 000 646	Protective overlay kit (10 pcs.)
3-5000.075	159 000 321	110V/24 VAC transformer
3-8050.396	159 000 617	RC filter kit (for relay use)

3-5600.099 Rev B (01/10)

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Signet 8150 Battery Powered Flow Totalizer

Member of the ProcessPro® Family of Instruments



Panel Mount



Pipe, Wall, and
Tank Mount



Integral Mount

Description

The Signet 8150 Battery Operated Flow Totalizer is compatible with the Signet 515 and 525 flow sensors, and will provide years of dependable operation. The large digital display indicates flow rate and totalized flow volume simultaneously. One of the three totalizers is resettable from the front panel or a remote location, while the second resettable totalizer can only be reset by entering a user-selectable security code. The third is a permanent non-resettable totalizer.

Our intuitive software design and four-button keypad provide for simple operation while setting screen displays

and programming the system. Calibration can be easily performed by entering the Auto-Cal feature and entering a value to match an external reference. Screen displays can be modified to suit the user's needs; along with the flow rate, any of the three totalizers can be selected as the displayed totalizer. Customers can quickly scroll through the totalizers simply by pressing any key on the keypad. A display averaging feature is included for applications where the flow in the pipe fluctuates. For applications where flow stops and starts due to production needs, a no-flow indicator will display the hours of non-flow.

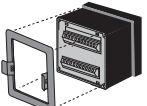
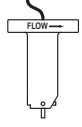
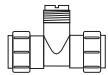
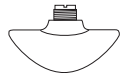
Features

- Three totalizers: 2 resettable and 1 permanent, user selectable
- Long-lasting lithium batteries
- Mounting versatility
- No-flow indicator
- Large digital display with averaging
- Simple push-button operation
- User selectable access code prevents unwanted changes
- Auto-calibration

Applications

- Wastewater Flow Accumulation
- Water Treatment Systems
- Remote or Mobile Treatment/Distribution Systems
- Irrigation Systems
- Filtration Systems
- Commercial Pools & Spas
- Groundwater Remediation
- RO Concentrate
- Process Flow Monitoring
- UPW Distribution
- Demineralizer Regeneration
- Process Cooling Water

System Overview

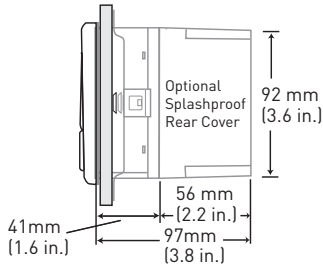
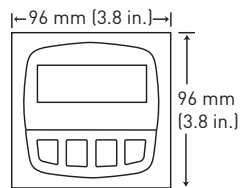
Panel Mount Signet 8150 Flow Totalizer (includes mounting bracket and panel gasket)  	Pipe, Tank, Wall Mount Signet 8150 Flow Totalizer  Signet Universal Adapter Kit (3-8050) (sold separately) 	Integral Mount Signet 8150 Flow Totalizer (includes adapter and sensor) 
Signet Flow Sensor (sold separately) 515 525 	Signet Flow Sensor (sold separately) 515 525 	
Signet Fittings (sold separately) 	 	 



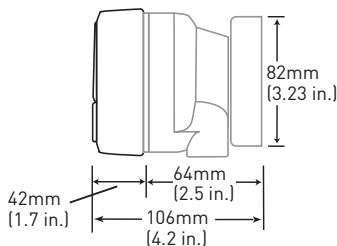
Dimensions

3-8150-1P

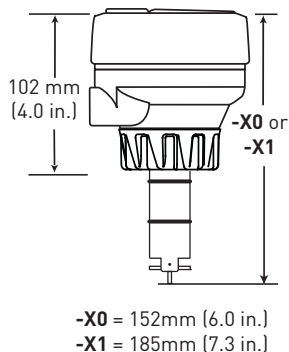
Panel Mount



3-8150-1 with universal mount



Model 515 Integral Mount Sensors - see 515 data sheet for specifications



Model 8150

Ordering Notes

- 1) For panel version, cutout must be 92 x 92 mm (3.62 x 3.62 in.)
- 2) To mount the panel version on a wall, use the heavy duty wall mount bracket.
- 3) Use the Universal mounting kit with the Field mount instrument to mount to a pipe, tank or wall.
- 4) An optional splash proof rear cover can be ordered separately if needed.

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

3-8150.099 Rev A (01/10)

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Specifications

General

Compatibility:

Signet 515 and 525 flow sensors

Input Freq. Range: 0 to 400Hz

Accuracy: $\pm 0.5\%$ of reading

Display: LCD type

- 4-digit upper line - flow rate
- 8-digit lower line - volume totalizer count, either resettable or permanent

Averaging: 0 to 120 secs.

Contrast: Automatic

Low Battery Indication:

Battery symbol appears on LCD display

8-digit resettable totalizers:

Stored until user resets; continues to be stored even after batteries are removed

8-digit permanent:

Kept permanently, even when batteries are removed

Materials

- Enclosure: PBT resin
- Keypad Material: Sealed 4-key silicon rubber
- Panel Case Gasket: Neoprene
- Window: Polyurethane coated polycarbonate

Electrical

Battery:

Two 3.6V Lithium thionyl chloride, A-size

Battery life:

4 years nominal @ 50 °C (122 °F)

Environmental

Operating Temperature:

-10 °C to 65 °C (14 °F to 149 °F)

Storage Temperature:

-40 °C to 100 °C (-40 °F to 212 °F)

Relative Humidity

0 to 95% Non-condensing

Enclosure: NEMA 4X/IP65 front

Shipping Weight 0.5 kg 1.1 lb

Standards and Approvals

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

Ordering Information

Instrument Part Number	
3-8150	Battery Operated Flow Totalizer
	Field, Panel, or Integral Sensor mount - Choose One
-1	Field mount for pipe, tank, and wall mounting
-1P	Panel mount; includes mounting bracket and panel gasket
-P0*	3-8150-1 integrally mounted on Model 515 Paddlewheel (Part No. 3-8510-P0) for ½ to 4 in. pipes, with a polypropylene body, Black PVDF rotor, and Titanium pin
-P1*	3-8150-1 integrally mounted on Model 515 Paddlewheel (Part No. 3-8510-P1) for 5 to 8 in. pipes, with a polypropylene body, Black PVDF rotor, and Titanium pin
-T0*	3-8150-1 integrally mounted on Model 515 Paddlewheel (Part No. 3-8510-T0) for ½ to 4 in. pipes, with a natural PVDF body, rotor, and pin
-V0*	3-8150-1 integrally mounted on Model 515 Paddlewheel (Part No. 3-8510-V0) for ½ to 4 in. pipes, with a natural PVDF body, rotor, and Hastelloy pin
3-8150 - 1	Example Part Number

* See individual sensor sheets for more sensor information.

Mfr. Part No.	Code	Mfr. Part No.	Code
3-8150-1	159 000 929	3-8150-P1	159 000 932
3-8150-1P	159 000 930	3-8150-T0	159 001 011
3-8150-P0	159 000 931	3-8150-V0	159 001 012

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Mounting		
3-8050	159 000 184	Universal mounting kit
3-0000.596	159 000 641	Heavy duty wall mount bracket (panel mount only)
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-8050.395	159 000 186	Splashproof rear cover (panel mount only)
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid tight connector kit (includes 3 connectors)
3-9000.392-1	159 000 839	Liquid tight connector, NPT (1 connector)
3-9000.392-2	159 000 841	Liquid tight connector, PG 13.5 (1 connector)
Other		
7400-0011	159 000 935	Lithium battery, 3.6 V, size AA (2 required)
5523-0222	159 000 392	Cable (per foot), 2 cond. w/shield, 22 AWG
Replacement Parts for Integral Mount Units - see Model 515 catalog pages for information		
3-8051	159 000 187	Flow integral mounting kit, NPT (replacement)
3-8510-P0	198 864 504	Sensor for ½ to 4 in. pipes, Polypropylene body
3-8510-P1	198 864 505	Sensor for 5 to 8 in. pipes, Polypropylene body
3-8510-T0	159 000 622	Sensor for ½ to 4 in. pipes, all natural PVDF
3-8510-V0	198 864 506	Sensor for ½ to 4 in. pipes, PVDF body

Signet 8550 Flow Transmitters

Member of the ProcessPro® Family of Instruments



Panel Mount



Pipe, Wall, Tank and Integral Mount

Features

- 2 or 4 wire power
- Available with single or dual input/output
- 4 to 20 mA scaleable outputs
- Permanent & resettable totalizers
- Relay options available
- NEMA 4X enclosure with self-healing window
- Output simulation for complete system testing

Description

Signet 8550 Flow Transmitters are advanced instruments that convert the signal from frequency and digital (S³L) flow sensors into a 4 to 20 mA signal for long distance transmission. Configuration flexibility is maximized with single or dual input/output, two optional relays for process control, two packaging

options for integral/pipe mount or panel installation, and scalability for virtually any flow range or engineering unit. State-of-the-art electronic design ensures long-term reliability, signal stability, and simple user setup and operation.

Applications

- Flow Control and Monitoring
- Filtration or Softener Regeneration
- Effluent Totalization
- Pump Protection
- Feed Pump Pulsing
- Ratio Control
- Water Distribution
- Leak Detection

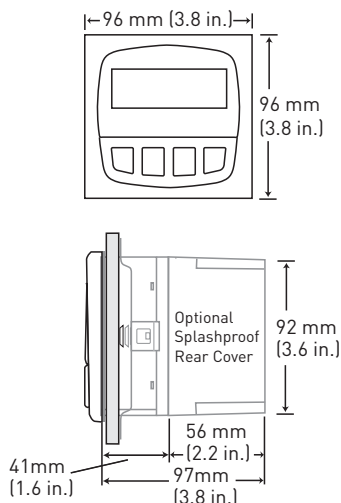
System Overview

Panel Mount Signet 8550 Flow Instrument (Includes mounting bracket and panel gasket) 	Pipe, Tank, Wall Mount Signet 8550 Flow Transmitter 	Integral Mount Signet 8550 Flow Transmitter
Signet Flow Sensor (sold separately) 515 2507 2540 525 2536 2551 2000 2552 2100 	Signet Universal Adapter Kit (3-8050) (sold separately) 	Signet Integral Adapter Kit (3-8051) (sold separately)
Signet Fittings (sold separately) 	Signet Flow Sensor (sold separately) 515 2507 2540 525 2536 2551 2000 2552 2100 	Signet Integral Mount Flow Sensor (sold separately) 3-8510-XX 3-8512-XX

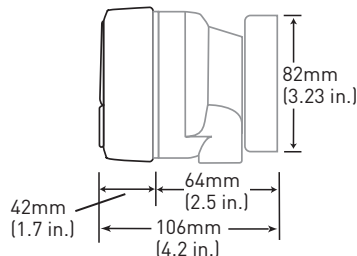


Dimensions

3-8550-XP



Field version with universal mount



Model 8550

Ordering Notes

- 1) Use the field mount version to directly mount the instrument to the Model 515 or 2536 integral mount sensor. See sensor data sheet for more information.
- 2) Field mount and sensor can be ordered in a package. See Integral Mount for more information.
- 3) Panel Cutout should be 92 mm X 92 mm (3.62 in X 3.62 in.).
- 4) An optional splash proof rear cover for the panel mount version can be ordered separately if needed.

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

3-8550.099 Rev C (03/10)

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Specifications

General

Compatibility:

- Signet Flow Sensors with frequency outputs
- Accuracy: $\pm 0.5\%$ of reading
- Display: Alphanumeric 2 x 16 LCD
- Update Rate: 1 second
- Contrast: User selectable, 5 levels

Materials

- Enclosure: PBT
- Panel Case Gasket: Neoprene
- Window: Polyurethane coated polycarbonate
- Keypad: Sealed 4-key silicone rubber

Electrical

Power: 12 to 24 VDC $\pm 10\%$, regulated

- [-1] 90 mA max.
- [-2] 220 mA max.
- [-3] 100 mA max.

Sensor Input Range: 0.5 to 1500 Hz

Sensor Power:

- 2-wire: 5 VDC $\pm 1\%$ @ 1.5 mA
 - 3 or 4 wire: 5 VDC $\pm 1\%$ @ 20 mA
- Optically isolated from current loop
- Short circuit protected

Current Output

- 4 to 20 mA, isolated, passive, fully adjustable and reversible
- Max. Loop Impedance:
 - 50 Ω max. @ 12 V
 - 325 Ω max. @ 18 V
 - 600 Ω max. @ 24 V
- Update Rate: 100 ms
- Accuracy: ± 0.03 mA

Ordering Information

Instrument Part Number			
3-8550	ProcessPro® Flow Transmitter		
↓	Sensor Input, Sensor Power, Outputs - Choose One		
	-1	One input, 2 or 4 wire, 4 to 20 mA and open collector for Hi, Lo, Pulse, or Frequency	
	-2	One input, 4 wire, 4 to 20 mA and 2 relays for Hi, Lo, or Pulse	
	-3	Two inputs, 2 or 4 wire, two 4 to 20 mA outputs and 2 open collectors for Hi, Lo, Pulse, or Frequency	
	↓	Field or Panel Mount - Choose One	
		-	Field mount
		P	Panel mount; includes mounting bracket and panel gasket
↓			
3-8550	- 1	Example Part Number - Field mount	

Mfr. Part No.	Code	Mfr. Part No.	Code
3-8550-1	159 000 047	3-8550-2P	159 000 050
3-8550-1P	159 000 048	3-8550-3	159 000 051
3-8550-2	159 000 049	3-8550-3P	159 000 052

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Mounting Accessories		
3-8050	159 000 184	Universal mounting kit
3-8051	159 000 187	Flow integral mount NPT
3-0000.596	159 000 641	Heavy duty wall mount bracket (panel mount only)
3-5000.598	198 840 225	Surface mount bracket (panel mount only)
3-8050.395	159 000 186	Splashproof rear cover (panel mount only)
Liquid Tight Connectors and Other		
3-9000.392	159 000 368	Liquid tight connector kit for rear cover (includes 3 connectors)
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)
3-8050.396	159 000 617	RC filter kit (for relay use)

Electrical (continued)

Relay Output:

- Mechanical SPDT contacts: High, Low, Pulse, Off
- Maximum Voltage Rating: 30 VDC @ 5 A, 250 VAC @ 5 A resistive load
- Hysteresis: User selectable
- Maximum 400 pulses/min.

Open-Collector Output:

- High, Low, Pulse, Off
- Optically isolated, 50 mA max. sink, 30 VDC max. pull-up voltage.
- Hysteresis: User selectable for exiting alarm condition
- Maximum 400 pulses/min.

Environmental

Operating Temperature:

-10 °C to 70 °C (14 °F to 158 °F)

Storage Temperature:

-15 °C to 80 °C (5 °F to 176 °F)

Relative Humidity:

0 to 95%, non-condensing

Enclosure: NEMA 4X/IP65 (front)

Shipping Weight 0.325 kg 0.8 lb

Standards and Approvals

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