Signet Flow Sensors







		2580	2551	2552	2536	515	2537	2540
Sensor Style		Full Bore Plastic Magmeter	Insertion Magmeter	Insertion Metal Magmeter	Insertion Paddlewheel	Insertion Paddlewheel	Insertion Paddlewheel	Insertion Paddlewheel
Operating Range m/s (ft/s)		0.02 to 10 m/s (0.07 to 33 ft/s)	0.05 to 10 m/s (0.15 to 33 ft/s)		0.1 to 6 m/s (0.3 to 20 ft/s)	0.3 to 6 m/s (1 to 20 ft/s)	0.1 to 6 m/s (0.3 to 20 ft/s)	
Installation Mounting Styles		Union ends/nuts, flanges/gaskets	Signet fittings offered in various plastic and metal for sizes 1/2 - 12 inches. Above 12 inches special order.	Customer supplied threaded fittings	Signet fittings offered in various plastic and metal for sizes 1/2 - 12 inches. Above 12 inches special order.			Customer supplied threaded saddle/ weld-on fittings
Pipe Size Range		1 in., 2 in., 4 in.	DN15 to DN900 (½ to 36 in.)	DN50 to DN2550 (2 to 102 in.)	DN15 to DN900 (½ to 36 in.)	DN15 to DN900 (½ to 36 in.)	DN15 to DN200 (½ to 8 in.)	DN40 to DN900 (1½ to 36 in.)
Wetted Materials	**Sensor Body**	PVC	PP or PVDF	316L SS	PP, PVDF or PVC	PP or PVDF		316 SS
	Rotor	N/A			PVDF or ETFE			17-4PH-1 Stainless Steel
	Rotor Pin (choice of)	N/A		Tungsten Carbide GRP 1, 316 SS	Titanium, Tantalum, Stainless Steel, Ceramic, Hastelloy-C, or PVDF			Tungsten Carbide GRP 1, 316 SS
	O-ring	FKM	FKM or EPR (EPDM) or FFKM	FKM	FKM or EPR (EPDM) or FFKM	FKM or EPR (EPDM) or FFKM	FKM or EPR (EPDM) or FFKM	FKM or EPR (EPDM)
	Other	Titanium (grade 2) electrodes	316L SS Hastelloy-C, or Titanium	PVDF insulator	None			Carbon Fiber reinforced PTFE (bearings)
*	**Fluid Temperature (°C) Fluid Temperature (°F)**	0 °C to 60 °C (32 °F to 140 °F)	0 °C to 85 °C (32 °F to 185 °F)	-15 °C to 85 °C (5 °F to 185 °F)	-18 °C to 85 °C (0 °F to 185 °F)	-18 °C to 100 °C (0 °F to 212 °F)	-18 °C to 85 °C (0 °F to 185 °F)	-18 °C to 100 °C (0 °F to 212 °F)
**	**Max. Operating Pressure**	10 bar (145 psi) @ 23 °C (73 °F)	10.3 bar (150 psi)	20.7 bar (300 psi) @ 25 °C (77 °F)	14 bar (200 psi)		12.5 bar (180 psi)	17 bar (250 psi)
	Standards and Approvals	CE, FCC, CUL Recognized Component, NSF (Pending) RoHS compliant, China RoHS, NEMA-4X	CE, FCC, UL (display version only), CUL, RoHS compliant, China RoHS, NSF, NEMA-4X	CE, FCC, RoHS compliant, China RoHS	CE, FCC, RoHS compliant, China RoHS, NSF	RoHS compliant, China RoHS, Lloyd's Register, NSF	CE, FCC, UL, RoHS compliant, China RoHS, NSF, NEMA-4X	CE, FCC, RoHS compliant, China RoHS
	Power Requirements	24 VDC, Max 24W (12 to 24 VDC)	5 to 24, 24 VDC, ±10%, regulated	5 to 24, 24 VDC, ±10%, regulated	5 to 24 VDC, ±10%, regulated	None	5 to 24 VDC, ±10%, regulated	
	Output	Frequency or digital, and 4 to 20 mA output	Frequency, digital (S^3L), 4 to 20 mA output or relay	Frequency, digital, or 4 to 20 mA output	Open collector	AC frequency	Open collector, 4 to 20 mA, digital (S^3L), AC Relay, Solid State Relay	Open Collector
	Compatible Signet Flow Instruments	All except 8150				All	All except 8150	
	Comments	Partially filled pipe detection, on-the-fly configuration with bluetooth app	Features empty pipe detection, bi-directional flow, optional multi-language display	Features empty pipe detection, hot-tap version available, bi-directional flow	General Purpose Sensor with installation fittings for many materials		Various output versions available to suit application needs	Steel sensor, low flow capability requires no custom fittings
	Moving Parts	No	No	No	Yes			
	Suitable for High Purity Applications	No, (>20 µS/cm)	No, (>20 µS/cm)	No	Yes			No

* **Derated by Pressure and Materials**
** **Derated by Temperature and Materials**

Specification Matrix







525	220/330	U1000	U3000-U4000	2000	2507	2100
Insertion Paddlewheel	Portable Ultrasonic	Ultrasonic	Ultrasonic	In-line Rotor		In-line Turbine
0.5 to 6 m/s (1.6 to 20 ft/s)	0.1 to 20 m/s (0.32 to 65.62 f/s)	0.1 to 10 m/s (0.33 to 33 f/s)	0.1 to 20 m/s (0.32 to 65.62 f/s)	0.11 to 12.11 lpm (0.03 to 3.2 gpm)	0.1 to 12 lpm (0.026 to 3.170 gpm)	0.38 to 38 lpm (0.10 to 10 gpm)
Metalex installation fittings for metal pipe	Strap-on, Flexible guide rails	Fixed clamp-on	Clamp-on, Flexible guide rails	¼ in. threads		Socket, flare end, or hose barb fittings
DN15 to DN300 (½ to 12 in.)	Type PF220 - 13 mm to 1000 mm (0.5 in. to 39 in.) Type PF330 - 13 mm to 2000 mm (0.5 in. to 78 in.)	d22 mm to d180 mm (3/4 in. to 6 in.)	13 mm to 2000 mm (0.5 in. to 78 in.)	¼ in. tubing		DN8, DN10, DN15 (1/4 in., 3/8 in., 1/2 in.)
316 SS	N/A			PPS	PVDF	
17-4PH-1 Stainless Steel	N/A			PEEK®	PVDF	
Tungsten Carbide GRP 1, 316 SS	N/A					
N/A				FKM		FKM or EPR (EPDM)
Carbon Fiber reinforced PTFE (bearings), Klinger sil C-4401 (gasket)	Applicable pipe materials: PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316, Copper Applicable pipe linings: Rubber, Glass, Concrete, Epoxy, Steel	Applicable pipe materials: PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316	Applicable pipe materials: PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316, Copper Applicable pipe linings: Rubber, Glass, Concrete, Epoxy, Steel	N/A	PTFE	Ceramic
-18 °C to 149 °C (0 °F to 300 °F)	-20 °C to 135 °C (-4 °F to 275 °F)	0 °C to 85 °C (32 °F to 185 °F)	-20 °C to 135 °C (-4 °F to 275 °F)	0 °C to 80 °C (32 °F to 176 °F)	-30 °C to 120 °C (-22 °F to 248 °F)	-20 °C to 70 °C (-4 °F to 158 °F)
103 bar (1500 psi @ safety factor 1.5)	N/A			5.5 bar (80 psi)		9.3 bar (130 psi)
RoHS compliant, China RoHS	CE, RoHS compliant Safety: BS EN 61010 EMC: BS EN 61326 - 1:2006, BS EN 61326-2-3:2006 Power supply: EN61204 - 3 UL, CUL, TUV, CB, CE	CE, RoHS compliant Safety: BS EN 61010-1:2001 EMC: BS EN 61326 - 1:2006, BS EN 61326-2-3:2006 Environmental: BS EN 60068-1:1995,BS EN 60068-2-1:2007, BS EN 60068-2-2:2007		N/A	CE, FCC, RoHS compliant, China RoHS	
None	Battery Powered. Input charger voltage is 90-264 VAC	12 to 24 V AC or DC	12 to 24 V AC or DC; 86 to 264 V AC (47Hz to 63Hz)	5 to 24 VDC, ±10%, regulated		
AC frequency	Analog output, pulse output, USB interface (PF 330), RS232 Interface (PF 330)	Analog output, pulse output	Analog output, pulse output, alarm output, USB interface (U4000), RS232 Interface (U4000)	Open collector output		
All	N/A	8900, 9900	N/A	All except 8150		
For high pressure, high temperature applications	Non-invasive measurement of liquid flow			Lowest flow range: 110 mL/min. PPS body for tough service, good chemical resistance	Excellent chemical resistance, note significant pressure drop.	Excellent chemical resistance, replaceable electronics, affordable package
Yes	No		No	Yes		
No	Yes		Yes	No	Yes	

Signet 515 Rotor-X Paddlewheel Flow Sensors

Standard Sensor (with red cap)

Integral Sensor

Wet-Tap Sensor

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**

(P51530-PX version only)

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 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 installation requirements.

Applications

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

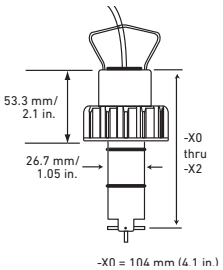
Specifications

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		FKM (std), optional EPR (EPDM) or FFKM	
Rotor Pin		Titanium, Hastelloy-C or PVDF; optional Ceramic, Tantalum, or Stainless Steel	
Rotor		Black PVDF or Natural PVDF; optional ETFE, with or without carbon fiber reinforced PTFE 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	181 psi @ 68 °F
		1.7 bar @ 90 °C	25 psi @ 194 °F
	PVDF	14 bar @ 20 °C	203 psi @ 68 °F
		1.4 bar @ 100 °C	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
Max. Temperature/Pressure Rating - Wet-Tap Sensor			
	PP	7 bar @ 20 °C	102 psi @ 68 °F
		1.4 bar @ 66 °C	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
Shipping Weight			
	P51530-X0	0.454 kg	1.00 lb
	P51530-X1	0.476 kg	1.05 lb
	P51530-X2	0.680 kg	1.50 lb
	P51530-X3	0.780 kg	1.72 lb
	P51530-X4	0.800 kg	1.76 lb
	P51530-X5	0.880 kg	1.94 lb
	3-8510-X0	0.23 kg	0.50 lb
	3-8510-X1	0.23 kg	0.50 lb
Standards and Approvals			
		RoHS compliant, China RoHS	
		Lloyd's Register Type Approval , NSF (P51530-PX version only)	
		Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety	

See Temperature and Pressure Graphs for more information

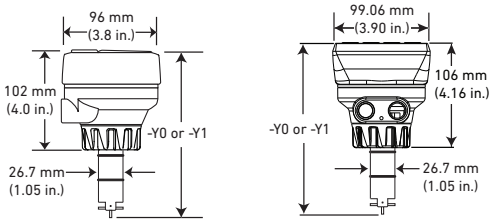
Dimensions

Standard Mount



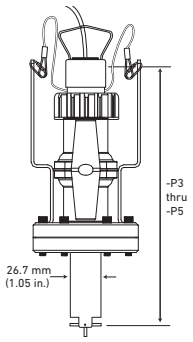
Pipe range	
0.5 to 4 in.	-X0 = 104 mm (4.1 in.)
5 to 8 in.	-X1 = 137 mm (5.4 in.)
10 in. and up	-X2 = 213 mm (8.4 in.)

Field (Integral) Mount
(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.)

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



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

System Overview

Panel Mount	Pipe, Tank, Wall Mount	Field (Integral) Mount	Automation System
Signet Instruments - 8150 - 8900 - 9900 - 9900-1BC - 9950	Signet Instruments - 9900-1P with Rear Enclosure - 9900-1BC with Rear Enclosure - 9900 with 3-8050-1 Universal Mount Kit or 3-8052-1 Integral Mount Kit - 9950 with 3-8050-1 Universal Mount Kit or 3-8052-1 Integral Mount Kit	Signet Instruments - 8150 - 9900-1 with 3-8051-X Integral Mount Kit	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller

Signet 515 Standard, Wet-Tap or 8510 Integral Mount Flow Sensors

Signet Fittings

All sold separately

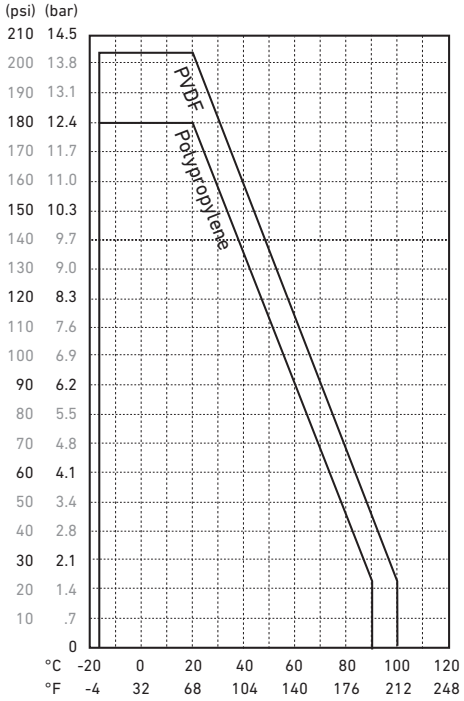
For overview of Wet-Tap System, see 3519 product page

Application Tips

- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments. See Accessories section for more information.
- Use a sleeved rotor in abrasive liquids to reduce wear.
- Sensor plug can be used to plug installation fitting after extraction of sensor from pipe.
- For liquids containing ferrous particles, use Signet Magmeters.
- For systems with components of more than one material, the maximum temperature/pressure specification must always be referenced to the component with the lowest rating.

Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



Ordering Notes

1) Most common part number combinations shown. For all other combinations contact factory.

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

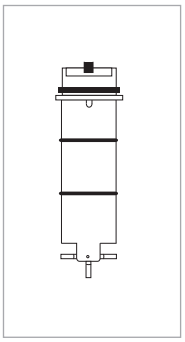
Ordering Information

Model 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 61 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). Use Signet fittings for proper seating of the sensor into the process flow.

Mfr. Part No.	Code	Body	Rotor	Pin Material
Paddlewheel Flow Sensor for use with remote mount instrument				
Pipe size DN15 to DN100 - ½ to 4 in.				
P51530-H0	**198 801 659**	Polypropylene	Black PVDF	Hastelloy-C
P51530-P0	**198 801 620**	Polypropylene	Black PVDF	Titanium
P51530-S0	**198 801 661**	Polypropylene	Black PVDF	Natural PVDF
P51530-T0	**198 801 663**	Natural PVDF	Natural PVDF	Natural PVDF
P51530-V0	**198 801 623**	Natural PVDF	Natural PVDF	Hastelloy-C
Pipe size DN125 to DN200 - 5 to 8 in.				
P51530-P1	**198 801 621**	Polypropylene	Black PVDF	Titanium
P51530-T1	**198 801 664**	Natural PVDF	Natural PVDF	Natural PVDF
P51530-V1	**198 801 624**	Natural PVDF	Natural PVDF	Hastelloy-C
Pipe size DN250 - DN900 - 10 to 36 in.				
P51530-P2	**198 801 622**	Polypropylene	Black PVDF	Titanium
P51530-V2	**198 801 625**	Natural PVDF	Natural PVDF	Hastelloy-C

Ordering Information (continued)

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.



Mfr. Part No.	Code	Body	Rotor	Pin Material
Flow sensor for integral mounting on the 8150 or 9900 instrument using the 3-8051-X flow sensor integral mounting kit (sold separately)				
DN15 to DN100 - ½ to 4 in.				
3-8510-P0	**198 864 504**	Polypropylene	Black PVDF	Titanium
3-8510-T0	**159 000 622**	Natural PVDF **	Natural PVDF	Natural PVDF
3-8510-V0	**198 864 506**	Natural PVDF **	Natural PVDF	Hastelloy-C
DN125 to DN200 - 5 to 8 in.				
3-8510-P1	**198 864 505**	Polypropylene	Black PVDF	Titanium

**PVDF available ½ in. to 4 in. only

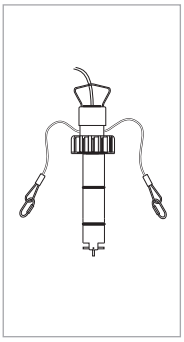
Combining a 515 Integral mount flow sensor with an integrally mounted instrument

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 3-8051-X flow sensor integral mounting kit (sold separately) to connect the sensor to an instrument.
b) Order a field mount transmitter (sold separately). The following part numbers are compatible: 3-8150-1, 3-9900-1.
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 Integral Mount" for more information.

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 61 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).



Mfr. Part No.	Code	Body	Rotor	Pin Material
Flow Sensor for wet-tap mounting with the 3519 Wet-Tap Valve (sold separately)				
DN15 to DN100 - ½ to 4 in.				
P51530-P3	**198 840 310**	Polypropylene	Black PVDF	Titanium
DN125 to DN200 - 5 to 8 in.				
P51530-P4	**198 840 311**	Polypropylene	Black PVDF	Titanium
DN250 to DN900 - 10 to 36 in.				
P51530-P5	**198 840 312**	Polypropylene	Black PVDF	Titanium

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

a) Sensor can be mounted in a 3519 Wet-Tap Valve (sold separately).
b) 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.

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

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Rotors		
M1538-2	**198 801 181**	Rotor, PVDF Black
M1538-4	**198 820 018**	Rotor, ETFE
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, ETFE
Rotor Pins		
M1546-1	**198 801 182**	Pin, Titanium
M1546-2	**198 801 183**	Pin, Hastelloy-C
M1546-3	**198 820 014**	Pin, Tantalum
M1546-4	**198 820 015**	Pin, Stainless Steel
P51545	**198 820 016**	Pin, Ceramic
O-rings		
1220-0021	**198 801 000**	O-ring, FKM (2 required per sensor)
1224-0021	**198 820 006**	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	**198 820 007**	O-ring, FFKM (2 required per sensor)
Miscellaneous		
P31536	**198 840 201**	Sensor Plug, Polypropylene
P31542	**198 801 630**	Sensor Cap, Red
P31934	**159 000 466**	Conduit Cap
P51589	**159 000 476**	Conduit Adapter Kit
P51550-3	**198 820 043**	Rotor Kit, PVDF Natural (rotor and pin)
5523-0222	**159 000 392**	Cable (per foot), 2 cond. w/shield, 22 AWG
3-8050	**159 000 184**	Universal Mounting Kit
3-8050-1	**159 000 753**	Universal Mount Junction Box
3-8050.390-1	**159 001 702**	Retaining Nut Replacement Kit, NPT, Valox (for use with 8510 and 8512)
3-8050.390-3	**159 310 116**	Retaining Nut Replacement Kit, NPT, PP (for use with 8510 and 8512)
3-8050.390-4	**159 310 117**	Retaining Nut Replacement Kit, NPT, PVDF (for use with 8510 and 8512)
3-8051	**159 000 187**	Transmitter Integral Adapter (for use with 8510 and 8512)
3-8051-1	**159 001 755**	Transmitter Integral Mounting Kit, NPT, PP (for use with 8510 and 8512)
3-8051-2	**159 001 756**	Transmitter Integral Mounting Kit, NPT, PVDF (for use with 8510 and 8512)

Signet 525 Metalex Paddlewheel Flow Sensor

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 carbon fiber reinforced 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.

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**
- **Tungsten Carbide or SS shaft**
- **7.6 m (25 ft) cable included**
- **Operating range 0.5 to 6 m/s (1.6 to 20 ft/s)**

Applications

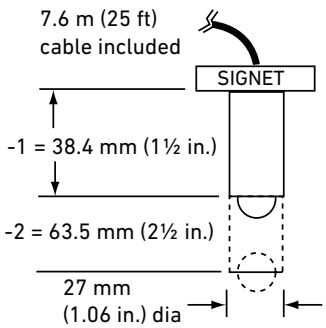
- **Boiler Feedwater Monitoring**
- **HVAC**
- **Chemical Transport**
- **Heat Exchangers**
- **Reverse Osmosis**
- **Cooling Systems**
- **Not suitable for gases**

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		17-4PH-1 Stainless Steel	
Rotor Pin		Tungsten Carbide GRP 1 or 316 stainless steel	
Retainers (2)		316 stainless steel (1.4401	
Rotor Bearings (2)		Carbon fiber reinforced PTFE	
Gasket		KLINGER®sil C-4401 (supplied with fitting)	
Electrical			
Frequency		39 Hz per m/s nominal	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 61 m (200 ft)	
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 (305 psi) @ 66 °C (151 °F)	
Operating Temperature		-18 °C to 149 °C	0 °F to 300 °F
Shipping Weight			
	P525-1/-1S	0.723 kg	1.6 lb
	P525-2/-2S	0.774 kg	1.7 lb
Standards and Approvals			
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

See Temperature and Pressure graphs for more information.

Dimensions



System Overview

Panel Mount	Pipe, Tank, Wall Mount	Automation System
Signet Instruments - 8150 - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments - 8150 with 3-8050 Universal Mount Kit - 9900-1 - 9900-1BC with Rear Enclosure - 9950	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller

Signet 525
Metalex Flow Sensor

Signet Metalex Fittings

All sold separately

Application Tips

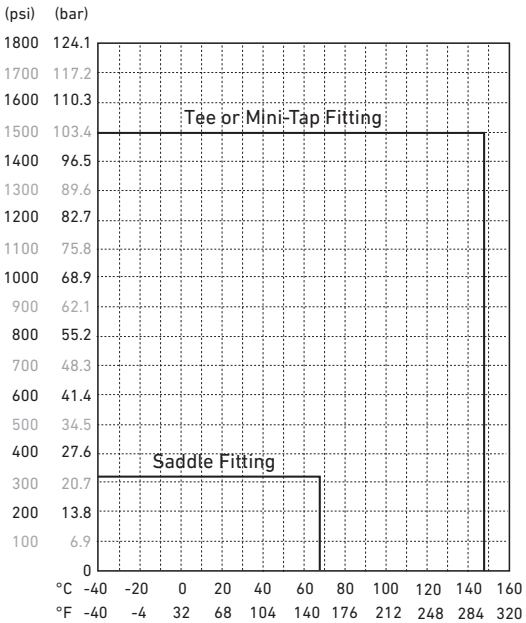
- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments. See Accessories section.
- Use the Socket Weld or Weld-on Mini-Tap fittings for sensor installation in pressures up to 1500 psi (103 bar).

Model 525 Ordering Notes

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

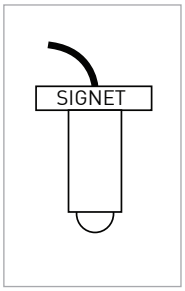
Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



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

Ordering Information



Mfr. Part No.	Code	Sensor Style	Rotor Pin Material
Metalex Flow Sensor for High Pressures and Temperatures			
P525-1	**198 801 494**	Used with ½ to 1 inch Socket-weld Mini-Tap Fittings**	Tungsten Carbide
P525-2	**198 801 495**	Used with 1¼ to 12 inch Weld-on Mini-Tap Fittings**	Tungsten Carbide
P525-1S	**159 000 963**	Used with ½ to 1 inch Socket-weld Mini-Tap Fittings**	316 Stainless Steel
P525-2S	**159 000 964**	Used with 1¼ to 12 inch Weld-on Mini-Tap Fittings**	316 Stainless Steel

**See Fittings section

Accessories and Replacement 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, carbon fiber reinforced 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

Signet 2536 Rotor-X Paddlewheel Flow Sensors

PVC Sensor (gray body and cap) | Standard Sensor (blue cap) | Integral Sensor | Wet-Tap Sensor

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

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

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

Features

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

(3-2536-PX version only)

Applications

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

Specifications

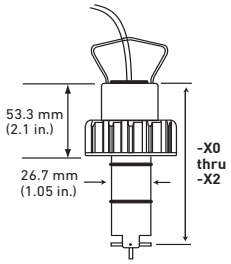
General			
Operating Range		0.1 to 6 m/s	0.3 to 20 ft/s
Pipe Size Range		DN15 to DN900	½ to 36 in.
	PVC	DN15 to DN100	½ to 4 in.
Linearity		±1% of max. range @ 25 °C (77 °F)	
Repeatability		±0.5% of max. range @ 25 °C (77 °F)	
Min. Reynolds Number Required		4500	
Wetted Materials			
Sensor Body		Glass-filled PP (black), PVDF (natural) or PVC (gray)	
O-rings		FKM (std) optional EPR (EPDM) or FFKM	
Rotor Pin		Titanium, Hastelloy-C or PVDF; optional Ceramic, Tantalum or Stainless Steel	
Rotor		Black PVDF or Natural PVDF; optional ETFE, with or w/o carbon fiber reinforced PTFE sleeve for rotor pin	
Electrical			
Frequency		49 Hz per m/s nominal	15 Hz per ft/s nominal
Supply Voltage		5 to 24 VDC ±10%, regulated	
Supply Current		<1.5 mA @ 3.3 to 6 VDC	<20 mA @ 6 to 24 VDC
Output Type		Open collector, sinking 10 mA max.	
Cable Type		2-conductor twisted pair with shield, 22 AWG	
Cable Length		7.6 m (25 ft) can be extended up to 305 m (1000 ft) maximum	
Max. Temperature/Pressure Rating - Standard and Integral Sensor			
	PP	12.5 bar @ 20 °C	180 psi @ 68 °F
		1.7 bar @ 85 °C	25 psi @185°F
	PVDF	14 bar @ 20 °C	200 psi @ 68 °F
		1.7 bar @ 85 °C	25 psi @ 185 °F
	PVC	12.5 bar @ 20 °C	180 psi @ 68 °F
		6.9 bar @ 60 °C	100 psi @ 140 °F
Operating Temperature			
	PP	-18 °C to 85 °C	0 °F to 185 °F
	PVDF	-18 °C to 85 °C	0 °F to 185 °F
	PVC	0 °C to 50 °C	32 °F to 122 °F
Max. Temperature/Pressure Rating - Wet-Tap Sensor			
	PP	7 bar @ 20 °C	100 psi @ 68 °F
		1.4 bar @ 60 °C	20 psi @ 140 °F
Operating Temperature		-18 °C to 60 °C	0 °F to 140 °F
Max. Wet-Tap Sensor Removal Rating		1.7 bar @ 22 °C	25 psi @ 72 °F
Shipping Weight			
	3-2536-X0	0.454 kg	1.00 lb
	3-2536-X1	0.476 kg	1.05 lb
	3-2536-X2	0.680 kg	1.50 lb
	3-2536-X3	0.780 kg	1.72 lb
	3-2536-X4	0.800 kg	1.76 lb
	3-2536-X5	0.880 kg	1.94 lb
	3-8512-X0	0.35 kg	0.77 lb
	3-8512-X1	0.37 kg	0.81 lb
Standards and Approvals			
	CE, FCC, NSF (3-2536-PX only)		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

See Temperature and Pressure Graphs for more information

Dimensions

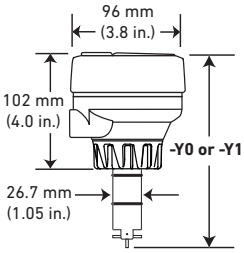
Standard Mount

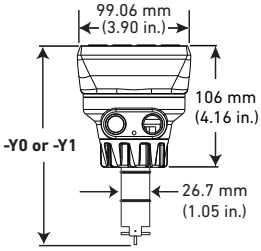
PVC Mount
(0.5 to 4 in. pipe range only)



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

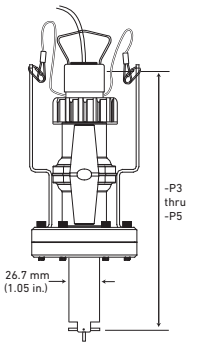
Integral Mount
(shown with Transmitter sold separately)





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

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



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

System Overview

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

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

Signet Fittings

All sold separately

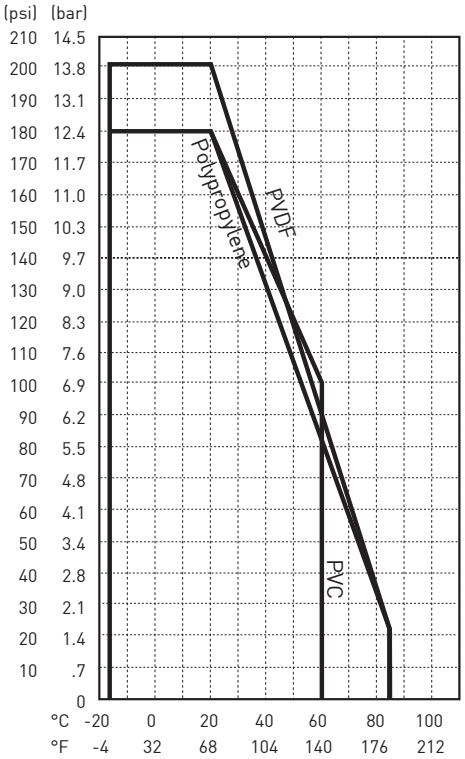
For overview of Wet-Tap System, see 3519 product page

Application Tips

- Use the Conduit Adapter Kit to protect the cable-to-sensor connection when used in outdoor environments. See Accessories section for more information.
- Use a sleeved rotor in abrasive liquids to reduce wear.
- Sensor plug can be used to plug installation fitting after extraction of sensor from pipe.
- For liquids containing ferrous particles, use Signet Magmeters.
- For systems with components of more than one material, the maximum temperature/pressure specification must always be referenced to the component with the lowest rating.

Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



Ordering Notes

1) Most common part number combinations shown. For all other combinations contact factory.

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

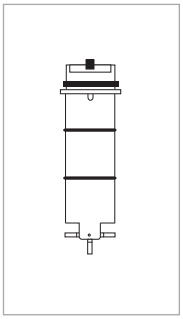
Ordering Information

Model 2536 Standard Mount Paddlewheel
When choosing this style of sensor, the instrument can be mounted nearby on a pipe or wall or in a remote location up to 305 m (1000 ft) by connecting the sensor through a standard 3-8050-1 universal junction box. Standard cable length is 7.6 m (25 ft). Use Signet fittings for proper seating of the sensor into the process flow.

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

Ordering Information (continued)

Model 2536 Integral Mount Paddlewheel
When choosing this style of sensor, the instrument is mounted directly onto the sensor for a local display. See guidelines below for instructions.



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

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

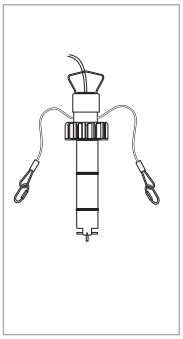
Guidelines: Combining a 2536 integral mount flow sensor with an integrally mounted instrument

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

a) Order the 3-8051-X flow sensor integral mounting kit (sold separately) to connect the sensor to an instrument.
b) Order a field mount transmitter (sold separately). The following part numbers are compatible: 3-9900-1.
c) Assembling the sensor with the integral adapter and instrument is quick and simple.

Model 2536 Wet-Tap Mount Paddlewheel Flow Sensor

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



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

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

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

Model 2536 Ordering Notes

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

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

Accessories and Replacement Parts

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

Signet 2537 Paddlewheel Flowmeter

The Signet 2537 Flowmeter 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 (S^3L) 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 in.). Available in Polypropylene and PVDF, it is ideal for a variety of applications including chemical processing, water and wastewater monitoring and scrubber control.

Features

- **Digital (S^3L) or 4 to 20 mA outputs or (Multi-function)**
- **Allows for up to six sensors to Signet 8900 Multi-Parameter Controller**
- **Low flow capabilities down to 0.1 m/s (0.3 ft/s)**
- **Polypropylene or PVDF sensor bodies**
- **Polypropylene and PVDF retaining nuts standard, Valox optional**
- **Installs into pipe sizes DN15 to DN200 (½ to 8 in.)**
- **Test certificate included for -X0, -X1**
- **Low power and high resolution**

(3-2537-XC-PX version only)

Applications

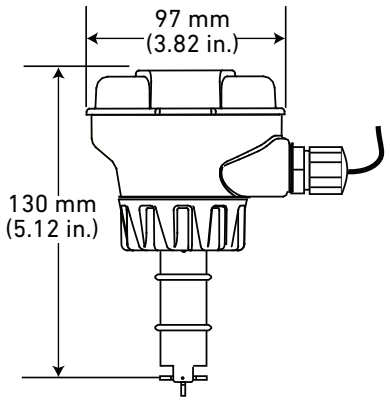
- **Process Flow Monitoring**
- **Pump Protection**
- **Pure Water Production**
- **Filtration Systems**
- **Chemical Production**
- **Reverse Osmosis**
- **Demineralization/Regeneration**
- **Fume Scrubbers**
- **Cooling Towers**
- **Proportional Metering Pump**

Specifications

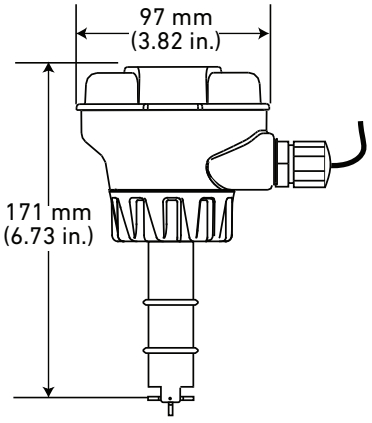
General			
Operating Range		0.1 to 6 m/s	0.3 to 20 ft/s
Pipe Size Range		DN15 to DN200	½ to 8 in.
Linearity		±1% of max. range @ 25 °C (77 °F)	
Repeatability		±0.5% of max. range @ 25 °C (77 °F)	
System Response		100 ms update rate nominal	
Wetted Materials			
Sensor Body	Glass-filled PP (black) or PVDF (natural)		
O-rings	FKM (std) optional EPR (EPDM) or FFKM		
Rotor Pin	Titanium, Hastelloy-C or PVDF; optional Ceramic, Tantalum or Stainless Steel		
Rotor	Black PVDF or Natural PVDF; optional ETFE, with or w/o carbon fiber reinforced PTFE sleeve for rotor pin		
Electrical			
Multi	With Dry Contact Relay	24 VDC nominal, ±10%, regulated, 30 mA max current	
	With Solid State Relay	6 V to 24 VDC, ±10%, regulated, 30 mA max current	
	Digital (S^3L)	5.0 VDC min to 6.5 VDC max., 30 mA max current (1.5 mA nominal)	
	4 to 20 mA	400 mV max ripple voltage, 30 mA max current	
	Maximum Pulse Rate	300 Hz	
	Maximum Pulse Width	50 ms	
	Minimum Pulse Rate	0.5 Hz	
	Compatible with PLC, PC or similar equipment		
	Compatible with customer supplied metering pump		
Digital (S^3L) Version		5 VDC nominal, regulated, 3 mA max current	
	Type	Serial ASCII, TTL level 9600 bps	
	Maximum Cable Length	Refer to Signet 8900 wiring specifications.	
	Compatible with Model Signet 8900, 9900 and 9950		
4 to 20 mA Version		12 to 32 VDC nominal, ±10%, regulated, 21 mA max current	
	Loop Accuracy	±32 µA @ 25 °C @ 24 VDC)	
	Loop Resolution	5 µA	
	Temperature Drift	±1µA per °C max.	
	Power Supply Rejection	±1µA per V	
	Maximum Cable	305 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/ Retaining Nut	PP	12.5 bar @ 20 °C	181 psi @ 68 °F
		1.7 bar @ 85 °C	25 psi @185 °F
	PVDF	14 bar @ 20 °C	203 psi @ 68 °F
		1.7 bar @ 85 °C	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		
Shipping Weight			
	0.640 kg	1.41 lb	
Standards and Approvals			
	CE, FCC, UL, NSF (3-2537-XC-PX version only)		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety.		

Dimensions

½ to 4 in. pipe



5 to 8 in. pipe



In-Line Installation

System Overview

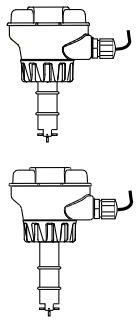
Panel Mount	4 to 20 mA Dry Contact, Solid State	4 to 20 Output	Automation System
Signet Instruments - 8900 - 9900 - 9900-1BC - 9950	- Customer Supplied Metering Pump	- Customer Supplied Chart Recorder, Programmable Logic Controller , or - Programable Automation Controller	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller
Signet 2537 Paddlewheel Flowmeter			
Signet Fittings			All sold separately

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.

Ordering Information



Mfr. Part No.	Code	Output
Paddlewheel Flowmeter - Integral Mount (8512 sensors)		
DN15 to DN100 - ½ to 4 in.		
Polypropylene Body, Black Polypropylene Retaining Nut, Black PVDF Rotor, Titanium Pin, FKM O-rings		
3-2537-1C-P0	**159 001 291**	Pulse/Flow Switch DCR
3-2537-2C-P0	**159 001 292**	Pulse/Flow Switch SSR
3-2537-5C-P0	**159 001 295**	Digital (S^3L)
3-2537-6C-P0	**159 001 296**	4 to 20 mA
Natural PVDF Body, Natural PVDF Retaining Nut, Rotor and Pin, FKM O-rings*		
3-2537-1C-T0	**159 001 315**	Pulse/Flow Switch DCR
3-2537-2C-T0	**159 001 316**	Pulse/Flow Switch SSR
3-2537-5C-T0	**159 001 319**	Digital (S^3L)
3-2537-6C-T0	**159 001 320**	4 to 20 mA
DN125 to DN200 - 5 to 8 in.		
Polypropylene Body, Black Polypropylene Retaining Nut, Black PVDF Rotor, Titanium Pin, FKM O-rings		
3-2537-1C-P1	**159 001 303**	Pulse/Flow Switch DCR
3-2537-2C-P1	**159 001 304**	Pulse/Flow Switch SSR
3-2537-5C-P1	**159 001 307**	Digital (S^3L)
3-2537-6C-P1	**159 001 308**	4 to 20 mA

*PVDF available ½ to 4 in. only

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Rotors		
3-2536.320-1	**198 820 052**	Rotor, PVDF Black
3-2536.320-2	**159 000 272**	Rotor, PVDF Natural
3-2536.320-3	**159 000 273**	Rotor, ETFE
3-2536.322-1	**198 820 056**	Sleeved Rotor, PVDF Black
3-2536.322-2	**198 820 057**	Sleeved Rotor, PVDF Natural
3-2536.322-3	**198 820 058**	Sleeved Rotor, ETFE
Rotor Pins		
M1546-1	**198 801 182**	Pin, Titanium
M1546-2	**198 801 183**	Pin, Hastelloy-C
M1546-3	**198 820 014**	Pin, Tantalum
M1546-4	**198 820 015**	Pin, Stainless Steel
P51545	**198 820 016**	Pin, Ceramic
O-rings		
1220-0021	**198 801 000**	O-ring, FKM (2 required per sensor)
1224-0021	**198 820 006**	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	**198 820 007**	O-ring, FFKM (2 required per sensor)
Miscellaneous		
P31536	**198 840 201**	Sensor Plug, Polypropylene
3-2536.321	**198 820 054**	PVDF Natural, Rotor Kit (rotor and pin)
3-8050.390-1	**159 001 702**	Retaining Nut Replacement Kit, NPT, Valox
3-8050.390-3	**159 310 116**	Retaining Nut Replacement Kit, NPT, PP
3-8050.390-4	**159 310 117**	Retaining Nut Replacement Kit, NPT, PVDF
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)
7310-1024	**159 873 004**	24 VDC Power Supply, 10W, 0.42 A
7310-2024	**159 873 005**	24 VDC Power Supply, 24W, 1.0 A
7310-4024	**159 873 006**	24 VDC Power Supply, 40W, 1.7 A
7310-6024	**159 873 007**	24 VDC Power Supply, 60W, 2.5 A
7310-7024	**159 873 008**	24 VDC Power Supply, 96W, 4.0 A

Signet 2540 Stainless Steel High Performance Paddlewheel Flow Sensor

Standard Sensor

Hot-Tap Sensor

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. Ultraflon 500C 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 in.) pipes using the 1½ in. 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**

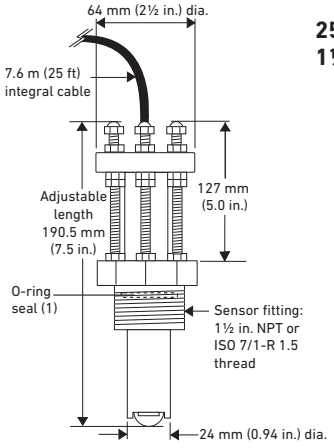
Specifications

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	FKM, optional EPR (EPDM)		
Rotor	17-4PH-1 Stainless Steel		
Rotor Pin	Tungsten Carbide GRP 1 (standard) stainless steel (optional)		
Retainers (2)	316 stainless steel (1.4401)		
Rotor Bearings (2)	Carbon fiber reinforced PTFE		
Electrical			
Frequency	49 Hz per m/s nominal	15 Hz per ft/s nominal	
Power	5 to 24 VDC ±10%, regulated, 1.5 mA max.		
Output Type	Open collector, sinking, max 10.0 mA		
Cable Length	7.6 m (25 ft), can be extended up to 305 m (1,000 ft)		
Cable Type	2-conductor twisted-pair with shield, 22 AWG		
Max. Temperature/Pressure Rating			
Sensor with standard FKM 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	
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, FCC		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

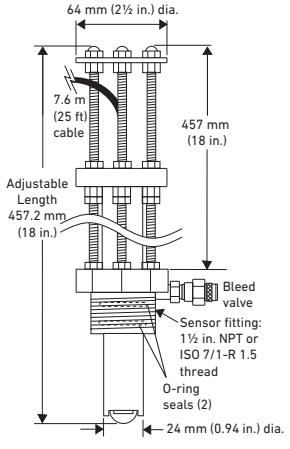
See Temperature and Pressure graphs for more information.

Dimensions

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



2540 Hot-Tap for 1½ to 36 in. pipes



System Overview

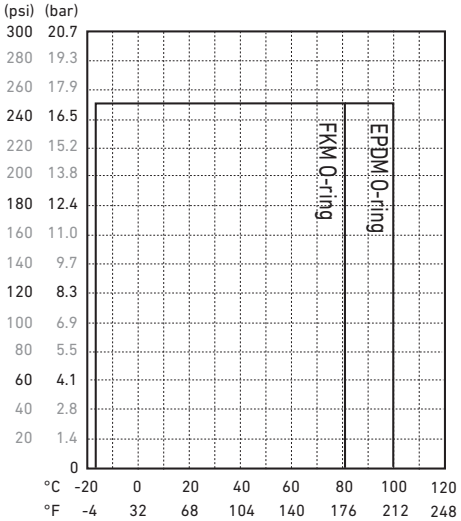
Panel Mount	Pipe, Tank, Wall Mount	Field (Integral) Mount	Automation System
Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments - 9900-1P with Rear Enclosure - 9900-1BC with Rear Enclosure - 9900 with 3-8050-1 Universal Mount Kit - 9950 with 3-8050-1 Universal Mount Kit	Signet Instruments - 9900-1 with 3-8050-1 Universal Mount Kit	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller
Signet 2540 Standard or Hot-tap (not shown) Flow Sensor			
Fittings - Customer supplied			All sold separately

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.

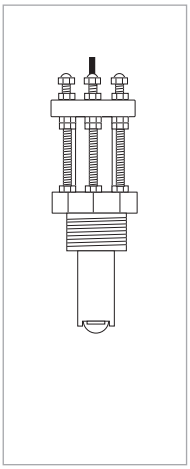
Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



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

Ordering Information



Mfr. Part No.	Code	Mounting Option	Rotor Pin Material
Stainless Steel High Performance Flow Sensor with Removable Electronics			
3-2540-1	**198 840 035**	1½ in. NPT thread	Tungsten Carbide
3-2540-2	**198 840 036**	1½ in. ISO thread	Tungsten Carbide
3-2540-3	**198 840 037**	1½ in. NPT thread, Hot-Tap design*	Tungsten Carbide
3-2540-4	**198 840 038**	1½ in. ISO thread, Hot-Tap design*	Tungsten Carbide
3-2540-1S	**159 001 501**	1½ in. NPT thread	316 Stainless Steel
3-2540-2S	**159 001 502**	1½ in. ISO thread	316 Stainless Steel
3-2540-3S	**159 001 503**	1½ in. NPT thread, Hot-Tap design*	316 Stainless Steel
3-2540-4S	**159 001 504**	1½ in. ISO thread, Hot-Tap design*	316 Stainless Steel

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

Ordering Notes
Installation fittings and Hot-Tap valves are customer supplied.

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	**198 801 000**	O-ring, FKM (2 required per sensor)
1224-0021	**198 820 006**	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	**198 820 007**	O-ring, FFKM (2 required per sensor)
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, carbon reinforced 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 3519 Flow Wet-Tap Valve

Assembly shown with extended length flow sensor installed.

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**

CE FC

Applications

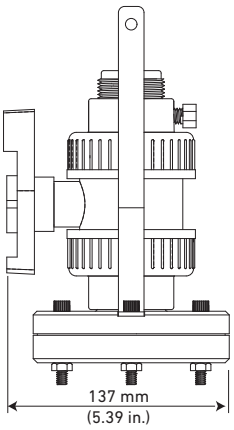
- **Filtration Systems**
- **Chemical Production**
- **Pump Protection**
- **Scrubbers**
- **Water Distribution**
- **Effluent Totalization**
- **Process Cooling Loops**

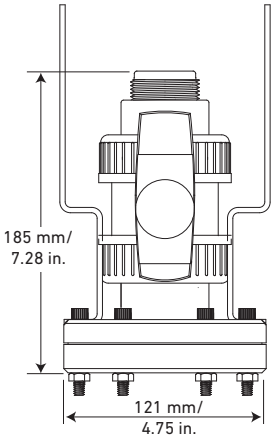
Specifications

General		
Body	PVC	
Ball Seats	PTFE	
O-rings	FKM (std) or EPR (EPDM) also available, contact factory	
Hardware	303 SS (brackets), 18/8 SS (nuts & bolts)	
Max. Temperature/Pressure 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
Shipping Weight		
	1.3 kg	2.86 lb
Standards and Approvals		
	CE, FCC	
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety	

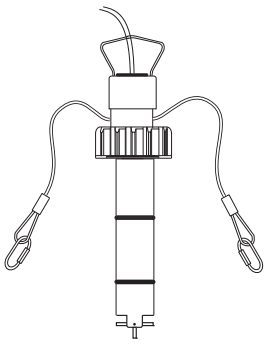
See Temperature and Pressure graphs for more information.

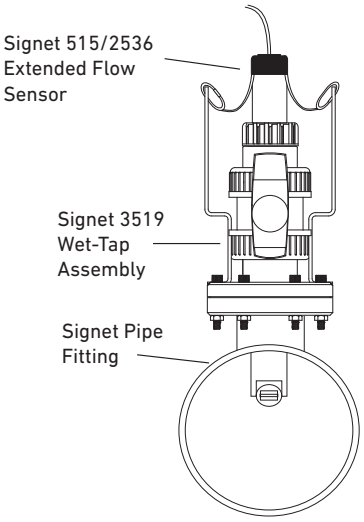
Dimensions





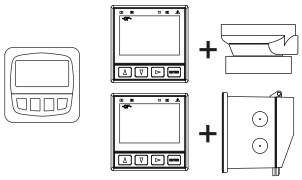
Model 515 or 2536 Wet-Tap Sensor

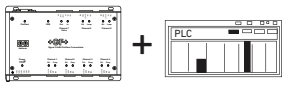




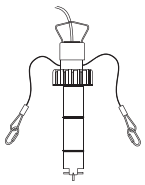
System Overview

Panel Mount	Pipe, Tank, Wall Mount	Automation System
Signet Instruments - 8150 - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments - 8150 - 9900-1 with 3-8050 Universal Mount Kit - 9900-1BC with Rear Enclosure - 9950	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller



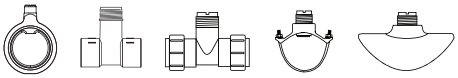


Signet Wet-Tap Flow Sensor
515 2536



Signet 3519 Wet-Tap Valve

Signet Fittings



All sold separately

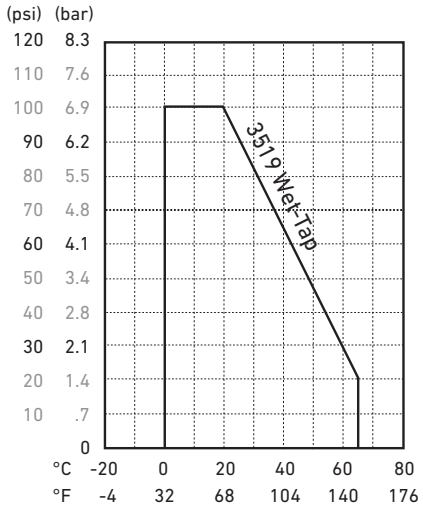
See Fittings section for more information.

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 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.

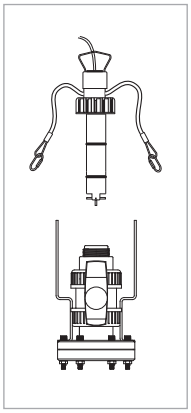
Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



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

Ordering Information



Mfr. Part No.	Code	Flow Range
3-3519	**159 000 757**	Wet-Tap Valve only for 515 and 2536 Wet-Tap flow sensors
for ½ to 4 inch pipes (15-100 mm)		
P51530-P3*	**198 840 310**	Polypro extended length paddlewheel sensor
3-2536-P3**	**159 000 758**	Polypro extended length low flow paddlewheel sensor
for 5 to 8 inch pipes (125-200 mm)		
P51530-P4*	**198 840 311**	Polypro extended length paddlewheel sensor
3-2536-P4**	**159 000 759**	Polypro extended length low flow paddlewheel sensor
for 10 to 36 inch pipes (250 mm and up)		
P51530-P5*	**198 840 312**	Polypro extended length paddlewheel sensor
3-2536-P5**	**159 000 760**	Polypro extended length low flow paddlewheel sensor

Ordering Notes

1) *See model 515 data sheet for sensor specifications.
2) **See model 2536 data sheet for sensor specifications.
3) Models 515 and 2536 Wet-Tap sensors are ordered separately.

Signet 2551 Magmeter Flow Sensor

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

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 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 in.), satisfying the requirements of many diverse applications.

Signet 2551 Magmeters offer many output options of frequency/digital (S^3L) or 4 to 20 mA which are available on both the blind and display versions. The frequency or digital (S^3L) 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 (S^3L) 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 3-0252 Configuration 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. The display also contains multi-languages in 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**
- **Polypropylene and PVDF retaining nuts standard, Valox optional**
- **4 to 20 mA, digital (S^3L), frequency, relay output (Display only)**
- **No pressure drop**
- **Corrosion resistant materials; PP or PVDF with SS, Hastelloy-C, or Titanium**
- **Multi-language display menu available**

(3-2551-PX-XX version only)

Applications

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

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

Specifications

General			
Operating Range	0.05 to 10 m/s	0.15 to 33 ft/s	
Pipe Size Range	DN15 to DN900	½ to 36 in.	
Linearity	± 1% reading plus 0.1% of full scale		
Repeatability	±0.5% of reading @ 25 °C (77 °F)		
Minimum Conductivity	20 µS/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		
O-rings	FKM (standard), EPR (EPDM), FFKM (optional)		
Case	PBT		
Display Window	Polyamide (transparent nylon)		
Protection Rating	NEMA 4X/IP65		
Electrical			
Power Requirements	4 to 20 mA	24 VDC ±10%, regulated, 22.1 mA max.	
	Frequency	5 to 24 VDC ±10%, regulated, 15 mA max.	
	Digital (S^3L)	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 8900, 9900, 9900-1BC, 9950		
Digital (S^3L) Output	Serial ASCII, TTL level 9600 bps		
	Compatible with Model Signet 8900, 9900, 9950 and 0486		
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
Shipping Weight			
	0.680 kg	1.50 lb	
Standards and Approvals			
	CE, FCC, UL, CUL, NSF (3-2551-PX-XX version only)		
	RoHS compliant, China RoHS		
	NEMA 4X / IP65 Enclosure (with cap installed)		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

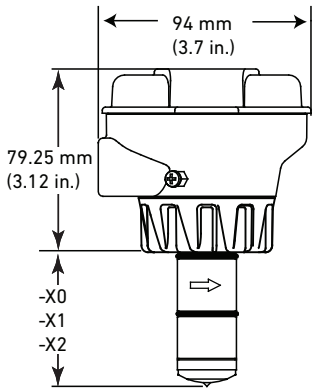
See Temperature and Pressure graphs for more information.

Dimensions

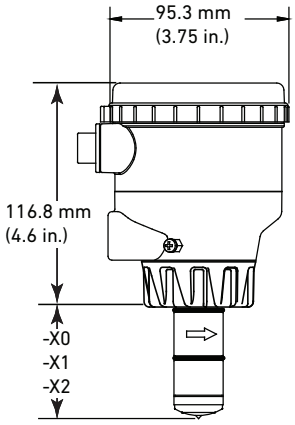
Pipe Range	
1/2 to 4 in.	-X0 = 58 mm (2.3 in.)
5 to 8 in.	-X1 = 91 mm (3.6 in.)
10 to 36 in.	-X2 = 167 mm (6.6 in.)

X = Sensor Body P, T, or V

Blind version

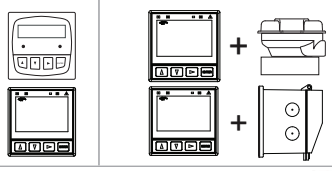


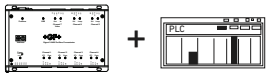
Display version



System Overview

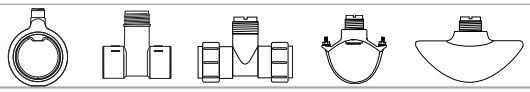
Stand-Alone	Panel Mount	Pipe, Tank, Wall Mount	4 to 20 Output	Automation System
Signet Model 2551 Magmeter	Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments - 9900-1 with 3-8050-1 Universal Mount Kit - 9900-1BC with Rear Enclosure	- Customer Supplied Chart Recorder, Programmable Logic Controller, or - Programmable Automation Controller	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller





Signet 2551 Magmeter

Signet Fittings



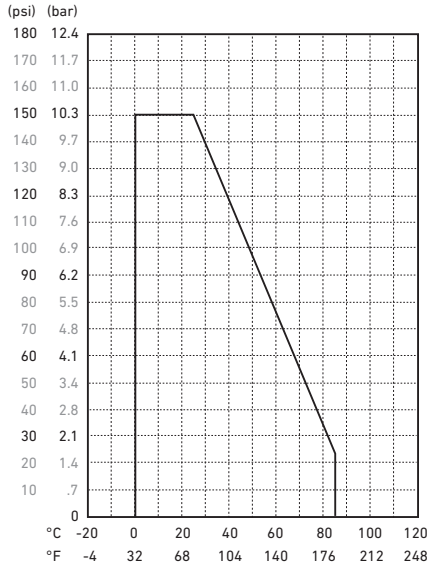
All sold separately

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.

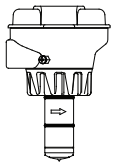
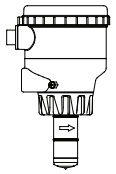
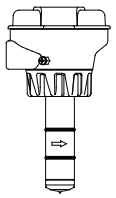
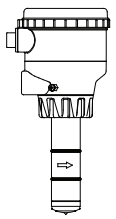
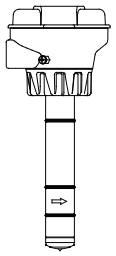
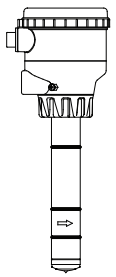
Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



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

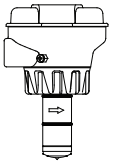
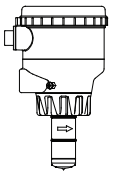
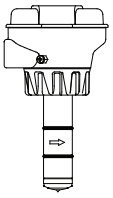
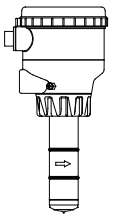
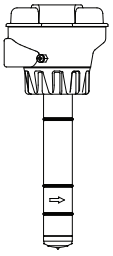
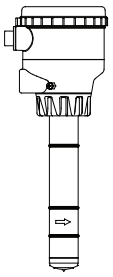
Ordering Information

Pipe Size	Mfr. Part No.	Code	Sensor Body
Frequency or Digital (S^3L) output Programmable open collector for use with any older Signet Flow Instrument or the 8900 or 9900, 9950 Instruments**			
DN15 to DN100 (½ to 4 in.)			
No Display			
	3-2551-P0-11	**159 001 105**	Polypropylene and 316L SS
	3-2551-T0-11	**159 001 108**	PVDF and Titanium
	3-2551-V0-11	**159 001 257**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P0-21	**159 001 267**	Polypropylene and 316L SS
	3-2551-T0-21	**159 001 436**	PVDF and Titanium
	3-2551-V0-21	**159 001 269**	PVDF and Hastelloy-C
with display			
	3-2551-P0-41	**159 001 261**	Polypropylene and 316L SS
	3-2551-T0-41	**159 001 433**	PVDF and Titanium
	3-2551-V0-41	**159 001 263**	PVDF and Hastelloy-C
DN125 to DN200 (5 to 8 in.)			
No Display			
	3-2551-P1-11	**159 001 106**	Polypropylene and 316L SS
	3-2551-T1-11	**159 001 109**	PVDF and Titanium
	3-2551-V1-11	**159 001 258**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P1-21	**159 001 268**	Polypropylene and 316L SS
	3-2551-T1-21	**159 001 437**	PVDF and Titanium
	3-2551-V1-21	**159 001 270**	PVDF and Hastelloy-C
with Display			
	3-2551-P1-41	**159 001 262**	Polypropylene and 316L SS
	3-2551-T1-41	**159 001 434**	PVDF and Titanium
	3-2551-V1-41	**159 001 264**	PVDF and Hastelloy-C
DN250 to DN900 (10 to 36 in.)			
No Display			
	3-2551-P2-11	**159 001 107**	Polypropylene and 316L SS
	3-2551-T2-11	**159 001 448**	PVDF and Titanium
	3-2551-V2-11	**159 001 450**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P2-21	**159 001 435**	Polypropylene and 316L SS
	3-2551-T2-21	**159 001 454**	PVDF and Titanium
	3-2551-V2-21	**159 001 456**	PVDF and Hastelloy-C
with Display			
	3-2551-P2-41	**159 001 432**	Polypropylene and 316L SS
	3-2551-T2-41	**159 001 460**	PVDF and Titanium
	3-2551-V2-41	**159 001 462**	PVDF and Hastelloy-C

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

Ordering Information (continued)

Pipe Size	Mfr. Part No.	Code	Sensor Body
4 to 20 mA output for use with PLC, PC or similar equipment			
DN15 to DN100 (½ to 4 in.)			
No Display			
	3-2551-P0-12	**159 001 110**	Polypropylene and 316L SS
	3-2551-T0-12	**159 001 113**	PVDF and Titanium
	3-2551-V0-12	**159 001 259**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P0-22	**159 001 273**	Polypropylene and 316L SS
	3-2551-T0-22	**159 001 439**	PVDF and Titanium
	3-2551-V0-22	**159 001 275**	PVDF and Hastelloy-C
with Display			
	3-2551-P0-42	**159 001 279**	Polypropylene and 316L SS
	3-2551-T0-42	**159 001 442**	PVDF and Titanium
	3-2551-V0-42	**159 001 281**	PVDF and Hastelloy-C
DN125 to DN200 (5 to 8 in.)			
No Display			
	3-2551-P1-12	**159 001 111**	Polypropylene and 316L SS
	3-2551-T1-12	**159 001 114**	PVDF and Titanium
	3-2551-V1-12	**159 001 260**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P1-22	**159 001 274**	Polypropylene and 316L SS
	3-2551-T1-22	**159 001 440**	PVDF and Titanium
	3-2551-V1-22	**159 001 276**	PVDF and Hastelloy-C
with Display			
	3-2551-P1-42	**159 001 280**	Polypropylene and 316L SS
	3-2551-T1-42	**159 001 443**	PVDF and Titanium
	3-2551-V1-42	**159 001 282**	PVDF and Hastelloy-C
DN250 to DN900 (10 to 36 in.)			
No Display			
	3-2551-P2-12	**159 001 112**	Polypropylene and 316L SS
	3-2551-T2-12	**159 001 449**	PVDF and Titanium
	3-2551-V2-12	**159 001 451**	PVDF and Hastelloy-C
with Display, two SPDT relays, one solid state relay			
	3-2551-P2-22	**159 001 438**	Polypropylene and 316L SS
	3-2551-T2-22	**159 001 455**	PVDF and Titanium
	3-2551-V2-22	**159 001 457**	PVDF and Hastelloy-C
with Display			
	3-2551-P2-42	**159 001 441**	Polypropylene and 316L SS
	3-2551-T2-42	**159 001 461**	PVDF and Titanium
	3-2551-V2-42	**159 001 463**	PVDF and Hastelloy-C

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
O-rings		
1220-0021	**198 801 000**	O-ring, FKM (2 required per sensor)
1224-0021	**198 820 006**	O-ring, EPR (EPDM) (2 required per sensor)
1228-0021	**198 820 007**	O-ring, FFKM (2 required per sensor)
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	**159 001 445**	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	**159 001 446**	PVDF/Hastelloy-C, DN250 to DN900 (10 to 36 in.) pipe
Replacement Electronics Module		
3-2551-11	**159 001 215**	Magmeter Electronics, frequency or digital (S^3L) 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^3L) 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^3L) output
3-2551-42	**159 001 375**	Magmeter Display Electronics, 4 to 20 mA output
Other		
P31536	**198 840 201**	Sensor plug, Polypropylene
7310-1024	**159 873 004**	24 VDC Power Supply, 10W, 0.42 A
7310-2024	**159 873 005**	24 VDC Power Supply, 24W, 1.0 A
7310-4024	**159 873 006**	24 VDC Power Supply, 40W, 1.7 A
7310-6024	**159 873 007**	24 VDC Power Supply, 60W, 2.5 A
7310-7024	**159 873 008**	24 VDC Power Supply, 96W, 4.0 A
3-8050.390-1	**159 001 702**	Retaining Nut Replacement Kit, NPT, Valox
3-8050.390-3	**159 310 116**	Retaining Nut Replacement Kit, NPT, PP
3-8050.390-4	**159 310 117**	Retaining Nut Replacement Kit, NPT, PVDF
3-8551.521	**159 001 378**	Clear plastic cap for display
1222-0042	**159 001 379**	O-ring for clear plastic cap, EPR (EPDM)
3-0252	**159 001 808**	Configuration Tool (blind version only)
3-9900.392-1	**159 000 839**	Liquid Tight Connector Kit, NPT (1 pc.)
3-8050.396	**159 000 617**	RC Filter Kit (for relay use), 2 per kit

Signet 2552 Metal Magmeter Flow Sensors

The Signet 2552 Metal Magmeter from Georg Fischer features all-stainless steel construction. The PVDF nosepiece and FKM 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 in.). Two 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 digital (S^3L) output enables multi-channel compatibility with Signet 8900, 9900 or 9950 Multi-Parameter instruments. Select the blind 4 to 20 mA current output to interface directly with data loggers, 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 3-0252 Configuration Tool is available to customize every performance feature in the 2552 so it can be adapted to the user's application requirements.

Features

- **NIST test certificate included**
- **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 (S^3L)**
- **ISO or NPT Threads**

Applications

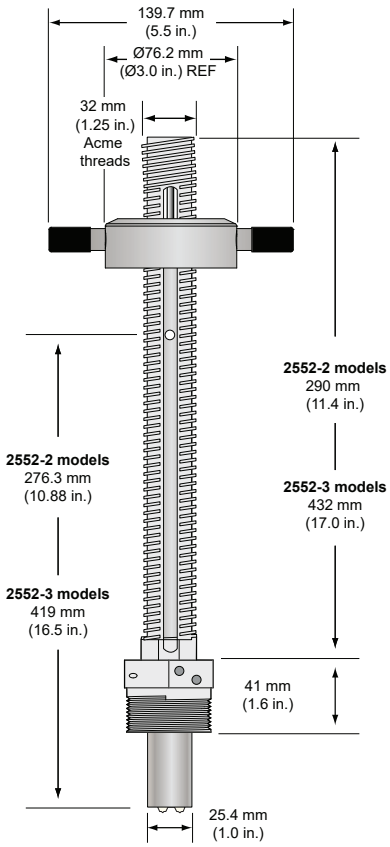
- **Municipal Water Distribution**
- **Process and Coolant Flow**
- **Chemical Processing**
- **Wastewater**
- **Mining Applications**
- **Water Process Flow**
- **HVAC**

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

Specifications

General				
Operating Range	Minimum		0.05 m/s	0.15 ft/s
	Maximum	pipes to DN1200 (48 in.)	10 m/s	33 ft/s
		pipes over DN1200 (48 in.)	3 m/s	10 ft/s
Pipe Size Range	DN50 to DN2550		2 to 102 in.	
Linearity	± 1% reading plus 0.1% of full scale			
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				
Body and Electrodes	316L stainless steel			
Insulator	PVDF			
O-rings	FKM			
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 (S^3L)	5 to 6.5 VDC 15 mA maximum			
Reverse Polarity and Short Circuit Protected				
Cable Options				
Fixed Cable	7.6 m		25 ft	
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)	
	Temperature 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
	Maximum Loop Resistance		300 Ω	
	Error Condition		22.1 mA	
Frequency Output	Compatible with		Signet 8900, 9900, 9900-1BC and 9950	
	Maximum 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			
	Maximum Current Sink		50 mA, current limited	
	Maximum Cable		300 m	1,000 ft
Digital (S^3L) Output	Compatible with		Signet 8900, 9900, 9950 and 0486	
	Serial ASCII, TTL level 9600 bps			
	Maximum Cable		Application dependent (See 8900 or 9900 manual) in non-icing conditions	
Operating Temperature	Ambient (non-icing conditions)		-15 °C to 70 °C	5 °F to 158 °F
	Media		-15 °C to 85 °C	5 °F to 185 °F
Max. 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.				
Shipping Weights				
3-2552-2X-A-11/A-12	2.50 kg	5.51 lb		
3-2552-2X-B-11/B-12	2.30 kg	5.07 lb		
3-2552-3X-A-11/B-11/A-12/B-12	4.00 kg	8.81 lb		
Standards and Approvals				
	CE, FCC			
	RoHS compliant, China RoHS			
	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 and OHSAS 18001 for Occupational Health and Safety			

Dimensions



In-Line Installation

System Overview

Panel Mount	Pipe, Tank, Wall Mount	4 to 20 Output	Automation System
Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments - 9900-1 with 3-8050 Universal Mount Kit - 9900-1BC with Rear Enclosure - 9950	- Customer Supplied Chart Recorder, Programmable Logic Controller, or Programmable Automation Controller	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller

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

All sold separately

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 base 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.

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

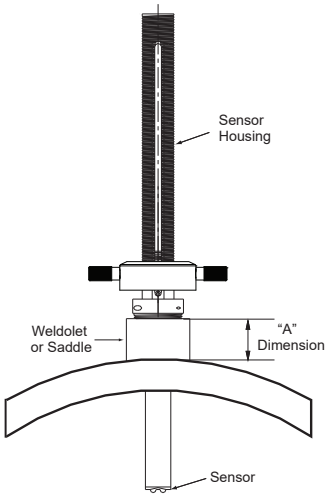
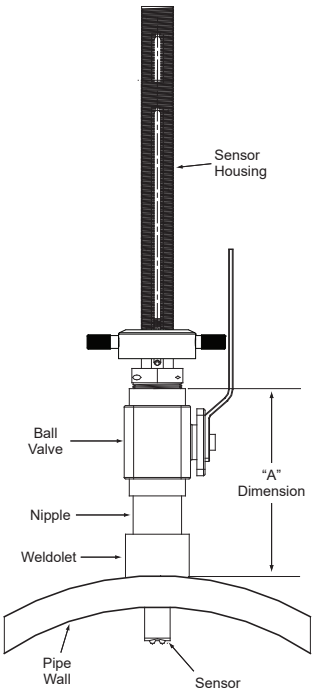


Fig. 2
Hot-Tap installation with "A" dimension using a ball valve, short nipple and weldolet (threadolet)



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	2	2.5	3 to 3 ½	4	5	6 to 8	10	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
		DN	50	65	80 to 90	100	125	150 to 200	250	300 to 350	400	450	500	550	600	650 to 700	750 to 800	850	900 to 950	1000 to 1100	1200	1400	1500	1700	1800	2000	2100	2.58
Max. "A" Dim	mm	inches																											
	50.8	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
	63.5	2.5	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
	76.2	3	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
	88.9	3.5	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
	101.6	4	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
	114.3	4.5	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	
	127	5	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	
	139.7	5.5	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	
	152.4	6	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	3	3	3	3	3	3	3	3	3	
	165.1	6.5	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
	177.8	7	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3			
	190.5	7.5	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	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						
	241.3	9.5	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								
	266.7	10.5	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										
	292.1	11.5	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																
	317.5	12.5	3	3	3	3	3	3	3	3																		
	330.2	13	3	3	3	3	3	3	3																			
	342.9	13.5	3	3	3	3	3	3																				
	355.6	14	3	3	3	3	3																					
	375.9	14.8	3	3																								
	381	15																										

Legend:
2: Use 3-2552-2, max. insertion = 236 mm (9.3 in.)
3: Use 3-2552-3, max. insertion = 368 mm (14.8 in)

This chart is based on the thickest commonly available pipe.

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

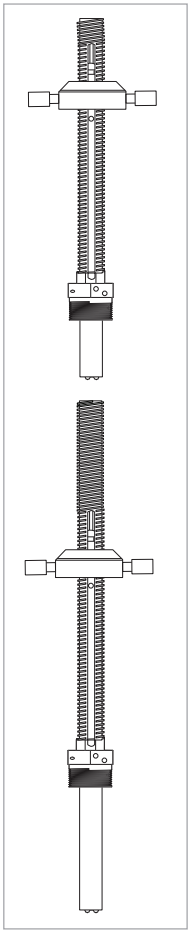
Ordering Notes

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 in. and 2 x 1¼ in. (2552-2 only) retrofit adapters are available for replacement installations of Signet 2552 and 2540 sensors.

Ordering Information



Mfr. Part No.	Code	Sensor Insertion Depth	Process Connection Thread Options
Frequency or Digital (S^3L) output for use with any Signet Flow or Multi-Parameter Instruments			
Fixed Cable, 7.6 m (25 ft); No Connector			
3-2552-21-A-11	**159 001 513**	9.3 in.*	1¼ in. NPT**
3-2552-22-A-11	**159 001 517**	9.3 in.*	1¼ in. ISO**
3-2552-33-A-11	**159 001 521**	14.8 in.*	1½ in. NPT**
3-2552-34-A-11	**159 001 522**	14.8 in.*	1½ in. ISO**
Watertight Sensor Connector; Cable Sold Separately			
3-2552-21-B-11	**159 001 515**	9.3 in.*	1¼ in. NPT**
3-2552-22-B-11	**159 001 519**	9.3 in.*	1¼ in. ISO**
3-2552-33-B-11	**159 001 523**	14.8 in.*	1½ in. NPT**
3-2552-34-B-11	**159 001 524**	14.8 in.*	1½ in. ISO**
4 to 20 mA output			
Fixed Cable, 7.6 m (25 ft); No Connector			
3-2552-21-A-12	**159 001 514**	9.3 in.*	1¼ in. NPT**
3-2552-22-A-12	**159 001 518**	9.3 in.*	1¼ in. ISO**
3-2552-33-A-12	**159 001 525**	14.8 in.*	1½ in. NPT**
3-2552-34-A-12	**159 001 526**	14.8 in.*	1½ in. ISO**
Watertight Sensor Connector; Cable Sold Separately			
3-2552-21-B-12	**159 001 516**	9.3 in.*	1¼ in. NPT**
3-2552-22-B-12	**159 001 520**	9.3 in.*	1¼ in. ISO**
3-2552-33-B-12	**159 001 527**	14.8 in.*	1½ in. NPT**
3-2552-34-B-12	**159 001 528**	14.8 in.*	1½ in. ISO**

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

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 cable assembly with water-tight connector, 4 m (13 ft)
5541-4186	**159 001 389**	4-conductor cable assembly with water-tight connector, 6 m (19.5 ft)
special order	**special order**	4-conductor cable assembly with 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
3-0252	**159 001 808**	Configuration Tool

Signet 2580 FlowtraMag® Meter

(Smart Phone not included)

The Signet 2580 FlowtraMag is a full-bore plastic in-line style magnetic flow meter. The PVC body with titanium electrodes has no moving parts, and is two to three times lighter in weight compared to traditional metal magmeters on the market. It is designed for high accuracy flow measurement in short pipe runs, making it an ideal solution for industrial applications where performance and simplicity are important.

The FlowtraMag design is factory calibrated with certificate at ±1% of reading accuracy. It is offered in corrosion resistant materials to provide long-term reliability with minimal maintenance costs. The LED indicators show at-a-glance system status, including normal operation, zero flow and partially filled pipe detection.

The flow meter provides three different outputs; field selectable frequency or digital (S^3L) as well as analog 4 to 20 mA. The FlowtraMag is capable of temperature readings of the media using the Signet 0252 Configuration Tool or GF Config Tool Bluetooth® app. The GF Config Tool Bluetooth® app supports iOS and Android for simple on-the-fly user configuration.

These versatile, easy-to-install meters deliver accurate flow measurement in pipe sizes of DN25 (1 in.), DN50 (2 in.) and DN100 (4 in.), optimized for performance in short pipe runs often associated with final effluent lines, well heads and water treatment skids.

Features

- **No moving parts**
- **Lighter in weight compared to traditional metal magmeters**
- **Reduced straight run requirements, ideal for final effluent lines, wellheads and skids**
- **Factory calibrated with certificate (±1% of reading accuracy)**
- **Partially filled pipe detection status indicator**
- **Visual LED indicators make sensor status clear and easy to read**
- **Reverse flow direction configurable with 0252 Configuration Tool or GF Config Tool Bluetooth® App**
- **Capable of temperature readings of the media using the 0252 Configuration Tool or GF Config Tool Bluetooth® App**
- **One device with three different outputs: field selectable Frequency or Digital (S^3L), and analog 4 to 20 mA**
- **On-the-fly configuration with GF Config Tool Bluetooth® App**
- **Bluetooth® 4.2 capable, support iOS and Android for simple user configuration**

Applications

- **Chemical Processing/Production**
- **Cooling Tower**
- **Filtration Systems**
- **Water and Wastewater Treatment**
- **Municipal and Industrial Water Distribution**
- **Pool and Aquatics**
- **Process Control, Water Process Flow**
- **Reverse Osmosis**
- **Scrubber Systems**
- **Metal Recovery and Landfill Leachate**
- **Mining**

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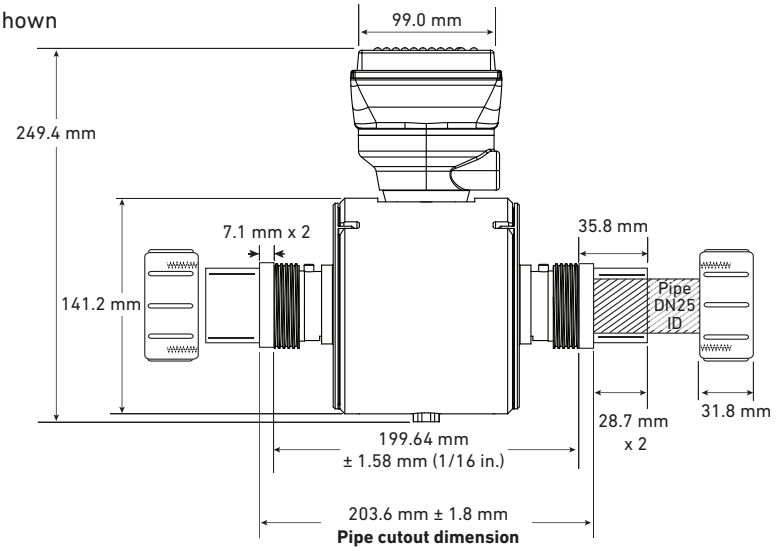
Specifications

General			
Pipe Size Range		DN25, DN50, DN100	1 in., 2 in., 4 in.
Flow Range		0.02 to 10 m/s	0.07 to 33 ft/s
3-2580-P-T-010		0.53 LPM to 266.35 LPM	0.14 to 70.36 GPM
3-2580-P-T-020		2.23 LPM to 1112.60 LPM	0.59 to 293.92 GPM
3-2580-P-T-040		8.72 LPM to 4357.83 LPM	2.30 to 1151.22 GPM
Minimum Conductivity		20 µS/cm – water based	
Power Cable Wire		7.6 m (25 ft) 2-conductor shielded	
Output Cable Wire		7.6 m (25 ft) 5-conductor shielded	
Cable wires may be extended up to 305 m (1000 ft), special order only			
Wetted Materials			
Flow Tube Body		PVC	
Electrode		Titanium, grade 2	
O-rings		FKM	
Performance			
Accuracy		± 1% of reading plus ± 0.01 m/s (0.033 ft/s), reference condition 50 µS/cm and water based	
Repeatability		± 0.5% of reading @ 25 °C (77 °F)	
Low Flow Cutoff		0.02 m/s (0.07 ft/s) (adjustable via 0252 Configuration Tool or GF Config Tool App)	
Electrical			
DC Power (Functional Rating)		24 VDC, max 24 W (12 to 32 VDC)	
Reverse Polarity Protected		Up to 35 VDC	
Over-Voltage Maximum Rating		35 VDC	
Current Output			
Passive (low power)		4 to 20 mA per ANSI-ISA 50.00.01 Class H	
Active Output		4 to 20 mA	
Passive Loop Voltage		12 to 32 VDC	
Loop Accuracy		±32 µA (@ 25 °C @ 24 VDC)	
Loop Resolution		5 µA	
Loop Span		3.8 mA to 21 mA	
Error Condition		None, 3.6 mA or 22 mA	
Max. Cable		300 m (1000 ft)	
Max. Loop Resistance		600 Ω @ 24 VDC	
		Compatible with PLC, PC or similar equipment	
Frequency Output			
Frequency		5 to 24 VDC, 50 mA max.	
Frequency Range		0 to 1500 Hz	
Max. Cable		300 m (1000 ft)	
Max. Pull-up Voltage		30 VDC, 10k pull-up recommended	
		Compatible with Signet 8900, 9900, 9950, and 0486 Profibus Concentrator	
Digital (S^3L) Output			
Digital (S^3L)		4.5 to 5.5 VDC	
		Serial ASCII, TTL level 9600 bps Compatible with Signet 8900, 9900, 9950 and 0486 Profibus Concentrator	
Max. Cable Length		Application dependent	
Environmental Requirements			
Enclosure		NEMA 4X / IP65	
Relative Humidity		0 to 95% non-condensing	
Storage Temperature		-10 °C to 60 °C (14 °F to 140 °F)	
Operating Temperature			
	Ambient	-10 °C to 60 °C	14 °F to 140 °F
	Media	0 °C to 60 °C	32 °F to 140 °F
UL Environmental Rating		UL 50, Type 6P Storage	
Altitude		4,000 m	13,123 ft
Pressure/Temperature Ratings			
Maximum Operating Pressure		10 bar @ 23 °C (145 psi @ 73 °F)	
DN25 (1 in.) and DN50 (2 in.)		3.5 bar @ 60 °C (51 psi @ 140 °F)	
DN100 (4 in.)		2.27 bar @ 60 °C (33 psi @ 140 °F)	
Shipping Weight			
3-2580-P-T-010		3.4 kg	7.5 lbs
3-2580-P-T-020		4.5 kg	9.9 lbs
3-2580-P-T-040		8.3 kg	18.3 lbs
Standards and Approvals			
		CE, FCC, NSF pending	
		UL, CUL Recognized Component	
		RoHS compliant, China RoHS	
		Manufactured under ISO 9001 for Quality, ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety.	

Dimensions

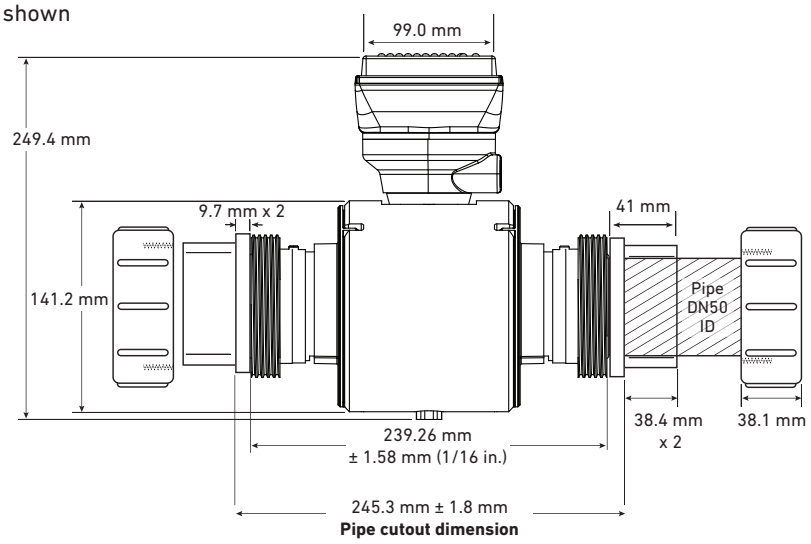
DN25

Union ends and union nuts shown



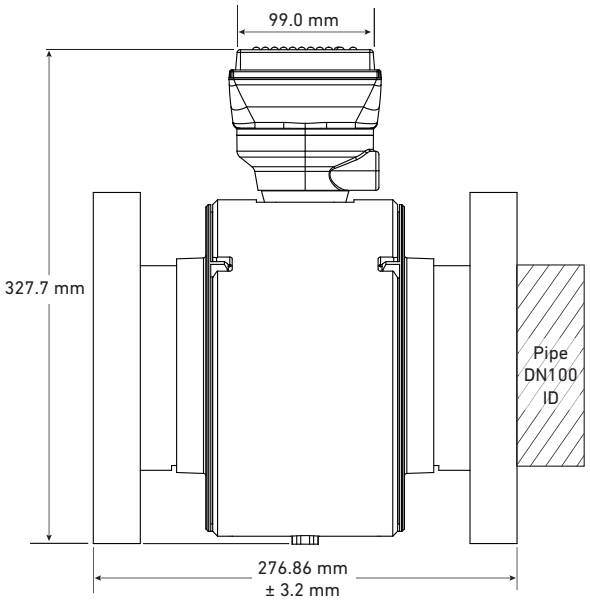
DN50

Union ends and union nuts shown



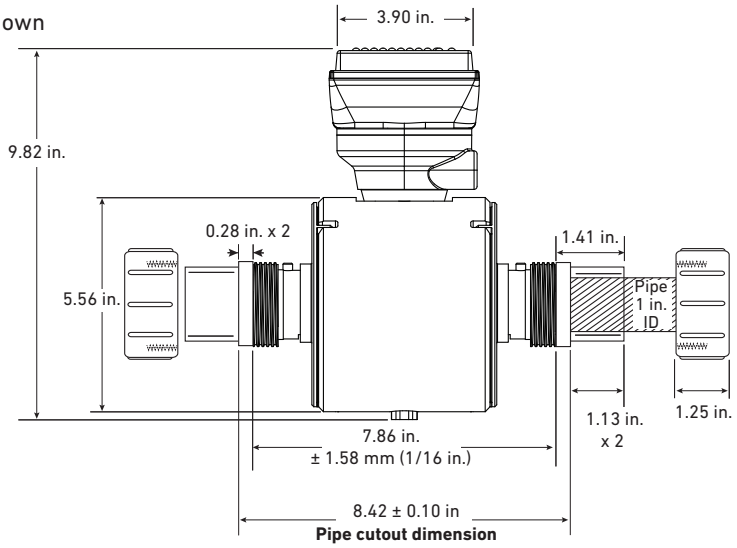
DN100

Flange bolt kits and gaskets not shown (sold separately)



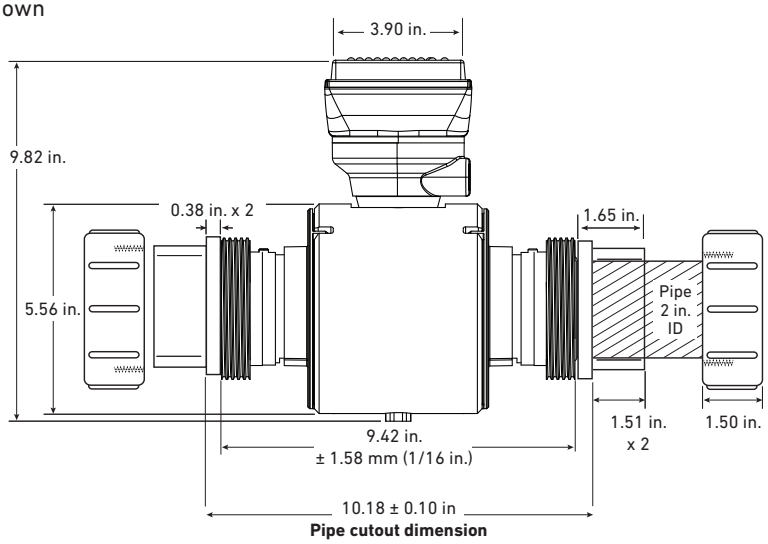
Dimensions

1 in.
Union ends and union nuts shown



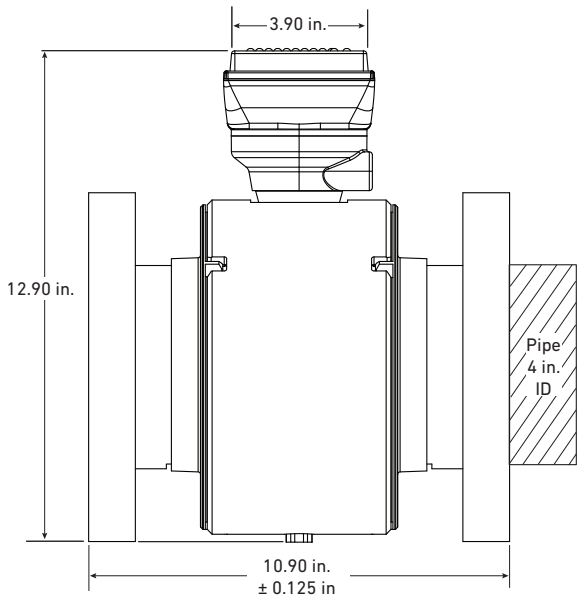
Pipe cutout dimension

2 in.
Union ends and union nuts shown



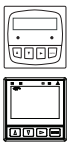
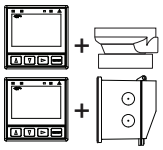
Pipe cutout dimension

4 in.
Flange bolt kits and gaskets not shown (Sold separately)



System Overview

System Overview

Stand-Alone	Panel Mount	Pipe, Tank, Wall Mount	4 to 20 mA Output	Automation System
Signet Model 2580 FlowtraMag 	Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950 	Signet Instruments - 9900-1 with 3-8050 Universal Mount Kit - 9900-1BC with Rear Enclosure 	- Customer Supplied Chart Recorder, Programmable Logic Controller, or Programmable Automation Controller 	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller 

Signet Model 2580 FlowtraMag

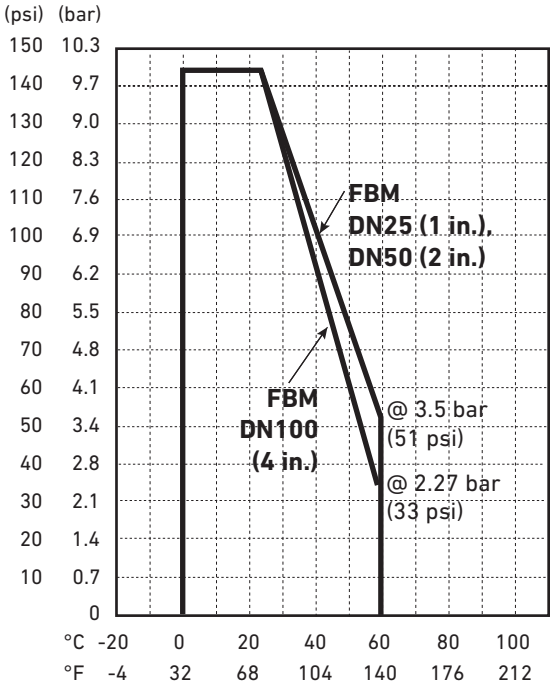
3-2580-P-T-010 

3-2580-P-T-020 

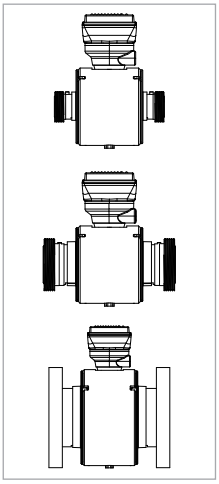
3-2580-P-T-040 

Temperature/Pressure Graph

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification.



Ordering Information

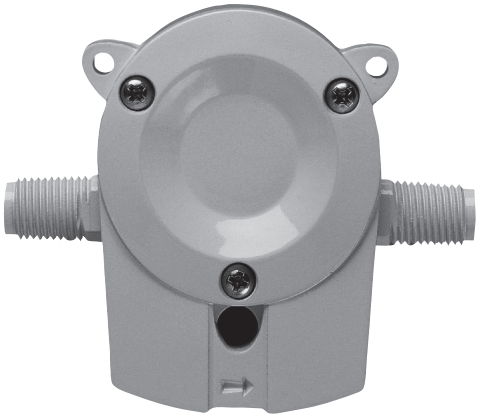


Mfr. Part No.	Code	Description
3-2580-P-T-010	**159 001 874**	FlowtraMag, PVC Union, FKM, Titanium, DN25 (1 in.)
3-2580-P-T-020	**159 001 875**	FlowtraMag, PVC Union, FKM, Titanium, DN50 (2 in.)
3-2580-P-T-040	**159 001 876**	FlowtraMag, PVC Flange, FKM, Titanium, DN100 (4 in.)

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-0252	159 001 808	0252 Configuration Tool
854-040	-	4 inch SCH 80 Van Stone Flange
37X002118	-	4 inch FKM Full Face Flange Gasket - 150# ANSI bolt pattern
37Z000069	-	4 inch Van Stone Flange bolt kit 316 SS - 150# (UNC bolts, SAE washers and nuts)
-	721 790 114	DN100 Flange Adapter, PVC-U Metric
-	721 700 014	DN100 Backing Flange, PVC-U Metric
-	161 375 904C	d32/DN25 Union End, metric
-	161 375 907C	d63/DN50 Union End, metric
-	161 375 430C	1" Union End, PVC
-	161 375 433C	2" Union End, PVC
3VGHR0A32C	-	ASTM / Union Nut, metric DN25 & 1", PVC
3VGHR0A63C	-	ASTM / Union Nut, metric DN50 & 2", PVC
9152-219	-	ASTM / O-Ring, metric DN25 & 1"
9152-332	-	ASTM / O-Ring, metric DN50 & 2"
-	749 440 714	DN100 Flange Profile Gasket

Signet 2000 Micro Flow Rotor Sensor



Features

- **Operating range 0.11 to 12.11 lpm (0.03 to 3.2 U.S. gpm)**
- **Simple mounting**
- **¼ 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)**

The Signet 2000 Micro Flow 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**

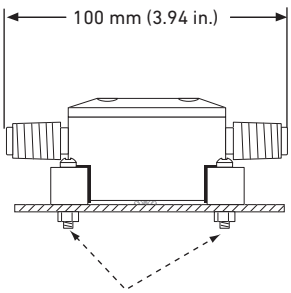
Specifications

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	±1.2% of full range		
Repeatability	±0.5% of full range		
Connections	¼ 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	FKM		
Electrical			
Power	5 to 24 VDC ±10%, regulated, 10 mA max.		
Output Type	Open-collector, sinking, 20 mA max.		
Cable Length	7.6 m (25 ft), can be extended up to 305 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.	
Shipping Weight			
	0.03 kg	0.7 lb	
Standards and Approvals			
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

See Temperature and Pressure graphs for more information.

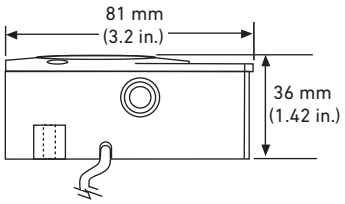
Dimensions

Top View

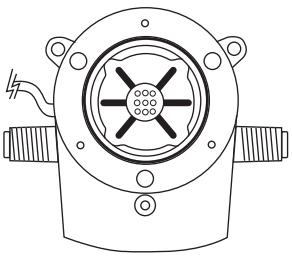


Mounting tabs for metric M3 or standard #6 screws on 68 mm (2.68 in.) bolt circle

Side View



Cover Removed



System Overview

Panel Mount	Pipe, Tank, Wall Mount	Automation System
Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments* - 9900-1P with Rear Enclosure - 9900-1 with 3-8050 Universal Mount Kit*	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller
Signet 2000 Flow Sensor		
Flexible tubing or rigid pipe (customer supplied)		

All sold separately

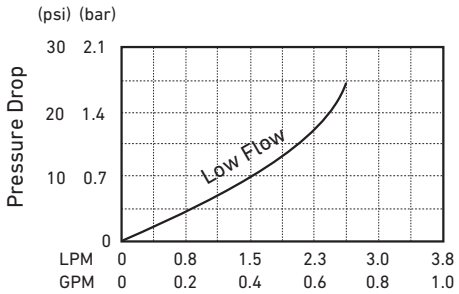
Application Tips

- For use in clean fluids - no suspended solids.
- Use the mounting tabs to secure the sensor to a flat horizontal surface, ±30°.
- Verify chemical compatibility before installation.

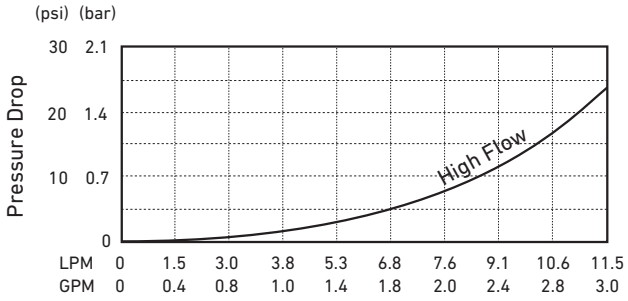
Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification.

Low Flow

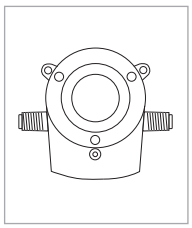


High Flow



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

Ordering Information

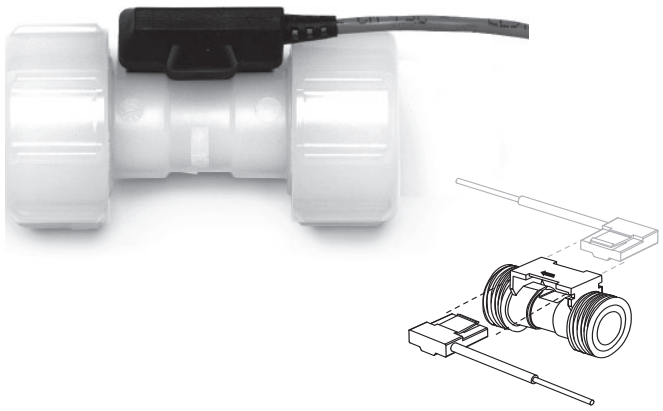


Mfr. Part No.	Code	Flow Range	End Fittings
Micro Flow Rotor Flow Sensor			
3-2000-11	**198 822 000**	Low flow, 0.11 to 2.61 lpm (0.03 to 0.7 gpm)	¼ NPT threads
3-2000-12	**198 822 001**	Low flow, 0.11 to 2.61 lpm (0.03 to 0.7 gpm)	ISO 7/1-R1/4 threads
3-2000-21	**198 822 002**	High flow, 1.13 to 12.11 lpm (0.3 to 3.2 gpm)	¼ NPT threads
3-2000-22	**198 822 003**	High flow, 1.13 to 12.11 lpm (0.3 to 3.2 gpm)	ISO 7/1-R1/4 threads

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, each
5523-0222	**159 000 392**	Cable (per foot), 2 cond. w/shield, 22 AWG
3-8050-1	**159 000 753**	Universal Junction Box

Signet 2100 Turbine Flow Sensor



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 (¼ in.), DN10 ($^{3}/_{8}$ in.), DN15 (½ in.) tubing, or DN15 (½ 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 (½ 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**

Applications

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

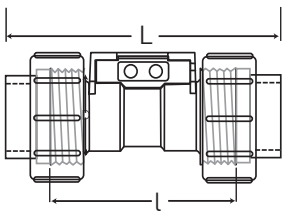
Specifications

General		
Flow 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
Accuracy	±3% of reading	
Repeatability	±0.5% of reading	
Pipe Size Range	DN15 (½ in.)	
Tubing Size	DN8 (¼ in.), DN10 (3/8 in.), DN15 (½ in.)	
Wetted Materials		
Sensor Body/Rotor	PVDF	
Shaft/Bearings	Ceramic	
O-rings	-1 = FKM, -2 = EPR (EPDM)	
Electronics Housing	PBT (polybutylene terephthalate)	
	EVA (ethylene vinyl acetate)	
Electrical		
Power	5 to 24 VDC ±10%, regulated, 1.5 mA max.	
	Reverse polarity protected	
Output	Open collector, sinking, max 30 mA	
Cable Length	4.6 m (15 ft) can be extended up to 305 m (1000 ft)	
Cable Type	PVC jacketed, 2 conductor twisted pair with shield (22 AWG)	
Max. Temperature/Pressure Rating		
	16 bar @ 20 °C	232 psi @ 68 °F
	9.3 bar @ 70 °C	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
Shipping Weight		
	0.15 kg	0.33 lb
Standards and Approvals		
	CE, FCC	
	RoHS compliant, China RoHS	
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety	

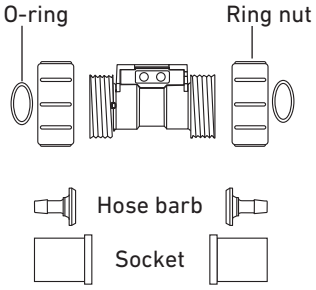
See Temperature and Pressure graphs for more information.

Dimensions

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 (2½ in.) Electronics module



System Overview

Panel Mount	Pipe, Tank, Wall Mount	Automation System
Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950	Signet Instruments* - 9900-1P with Rear Enclosure - 9900-1 with 3-8050 Universal Mount Kit*	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller

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

All sold separately

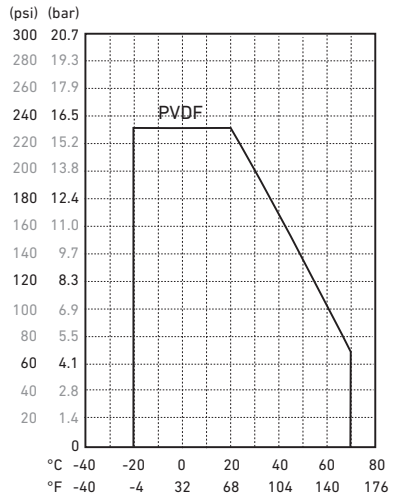
Application Tips

- All socket and hose barb connector kits are sold individually. Two kits are required for each sensor.
- Junction block, 3-8050-1 recommended if standard cable is extended to maximum 305 m (1000 ft).

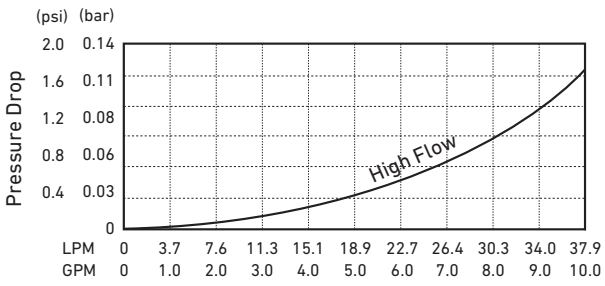
Temperature/Pressure Graphs

Note:

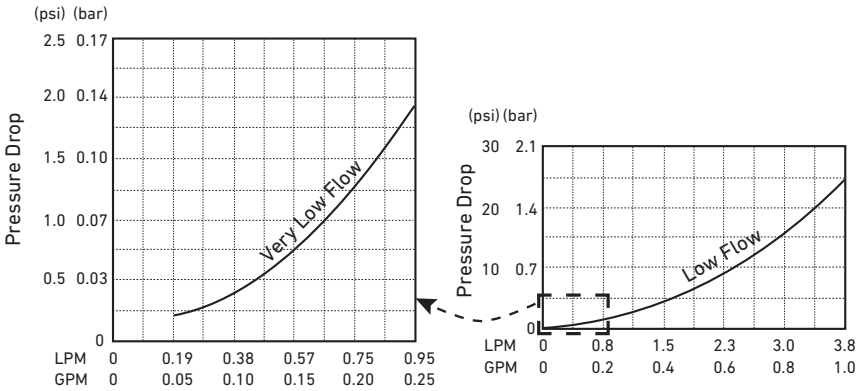
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



High Flow

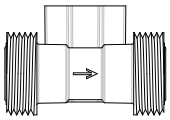


Low Flow



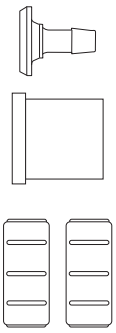
Please refer to Wiring, Installation, and Accessories sections for more information.

Ordering Information



Mfr. Part No.	Code	O-ring Material	Flow Range
Turbine Flow Sensor, PVDF Body and Rotor (for use with various end-connectors)			
3-2100-1L	**159 000 001**	FKM	low, 0.38 to 3.8 lpm (0.10 to 1 gpm)
3-2100-2L	**159 000 003**	EPR (EPDM)	low, 0.38 to 3.8 lpm (0.10 to 1 gpm)
3-2100-1H	**159 000 002**	FKM	high, 3 to 38 lpm (0.8 to 10 gpm)
3-2100-2H	**159 000 004**	EPR (EPDM)	high, 3 to 38 lpm (0.8 to 10 gpm)

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



Mfr. Part No.	Code	Type of End Fitting
End Fitting for Model 2100 Sensor		
3-2100-31	**159 000 005**	Hose Barb Connector Kit, PVDF, ½ in. (1-hose barb and 1-ring nut)
3-2100-32	**159 000 006**	Hose Barb Connector Kit, PVDF, 3/8 in. (1-hose barb and 1-ring nut)
3-2100-33	**159 000 007**	Hose Barb Connector Kit, PVDF, ¼ in. (1-hose barb and 1-ring nut)
3-2100-34	**159 000 008**	Fusion Socket Connector, PVDF, DN15 ½ in. (1-fusion socket and 1 ring nut)
3-2100-35	**159 000 009**	Butt Fusion/IR Connector Kit, PVDF, DN15 ½ in. (1-IR socket and 1 ring nut)
3-2100-36	**159 000 010**	Metric Socket Connector Kit, PVC, ½ in. (1-solvent socket and 1 ring nut)
3-2100-37	**159 000 011**	SCH 80 Socket Connector Kit, PVC, ½ in. (1-solvent socket and 1 ring nut)
3-2100-38	**159 000 012**	NPT Thread Socket Connector Kit, PVC, ½ in. (1-threaded socket and 1 ring nut)

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
1220-0018	**159 000 019**	O-rings FKM (2 required per sensor)
1224-0018	**159 000 020**	O-rings EPR (EPDM) (2 required per sensor)
3-8050-1	**159 000 753**	Universal Junction Box

Signet 2507 Mini Flow Rotor Sensor

Features

- **Operating range 100 to 12,000 ml/m (0.026 to 3.2 U.S. gpm)**
- **Detachable signal connector for easy servicing**
- **Simple installation with a G 1/4 in. (¼ in. NPT) threaded connection**
- **Standard 7.6 m (25 ft) cable**
- **PVDF construction**
- **Compact assembly**

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

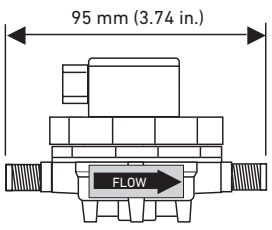
- **Fluid Dispensing**
- **Laboratory and Clinical Wet Benches**
- **Chemical Dosing**
- **Batch Processes**

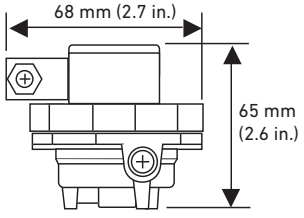
Specifications

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	±2% of reading		
Repeatability	±0.25% of full range		
Viscosity Range	0.2 to 20.0 centistokes		
Connections	G 1/4 in. ports, ¼ in. NPT pipe adapters (2 included)		
Wetted Materials			
Housing	PVDF		
Flow Insert	PTFE		
Quad Ring Seal	FKM		
Rotor	PVDF		
Pipe Thread Adapters	PVDF		
Electrical			
Power	5 to 24 VDC ±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 305 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	
Shipping Weight			
	0.115 kg	0.25 lb	
Standards and Approvals			
	CE, FCC		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

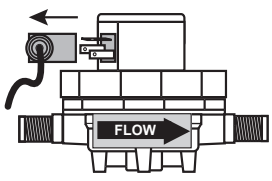
See Temperature and Pressure graphs for more information.

Dimensions

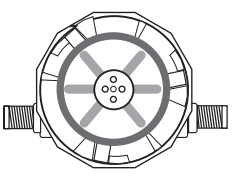




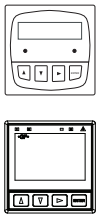
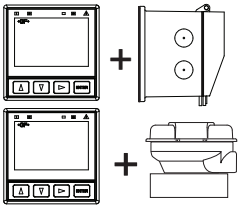
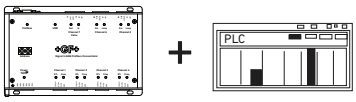
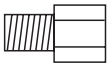
Detachable Signal Connector



Top View (cover removed)



System Overview

Panel Mount	Pipe, Tank, Wall Mount	Automation System
Signet Instruments - 8900 - 9900-1P - 9900-1BC - 9950 	Signet Instruments* - 9900-1P with Rear Enclosure - 9900-1 with 3-8050 Universal Mount Kit* 	- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or - Programmable Automation Controller 
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 		

All sold separately

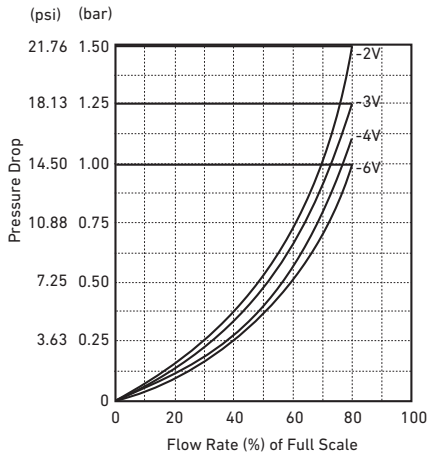
Application Tips

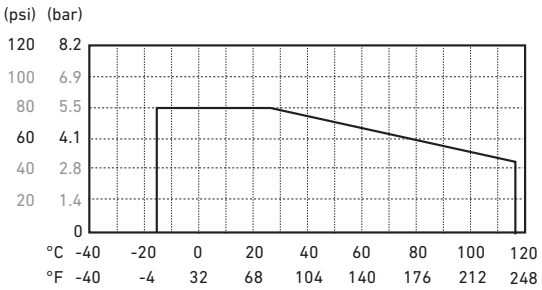
- Use the threaded ports on bottom of sensor to secure the sensor to any flat surface.
- The range of any sensor can be changed by replacing the flow insert.
- Suitable only for clean fluids without particles.

Temperature/Pressure Graphs

Note:
The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.

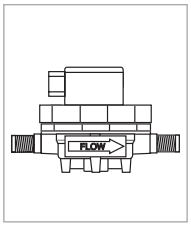
High Flow





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

Ordering Information



Mfr. Part No.	Code	Insert Option
Mini Flow Low Flow Sensor with Free Running Rotor		
3-2507.100-2V	**198 801 732**	With 2 mm insert; for 0.15 to 0.740 gpm (400 to 2800 mL/m)
3-2507.100-3V	**198 801 733**	With 3 mm insert, for 0.185 to 1.123 gpm (700 to 4200 mL/m)
3-2507.100-4V	**198 801 734**	With 4 mm insert, for 0.343 to 1.585 gpm (1300 to 6000 mL/m)
3-2507.100-6V	**198 801 736**	With 6 mm inlet, no insert, for 0.845 to 3.170 gpm (3200 to 12000 mL/m)

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

PORTAFLOW 220/330 Portable Ultrasonic Flowmeter

The Portaflow range brings simplicity to the non-invasive measurement of liquid flow. Portaflow offers the user quick and accurate flow measurement with its easy to follow menu and simple set up. Results can be achieved within minutes of opening the case. Compact, rugged and reliable, the Portaflow range has been designed to provide sustained performance in industrial environments.

Features

- **Large, easy to read graphic display with backlighting**
- **Easy to install thanks to flexible guide rails**
- **Rechargeable battery for up to 20 hours mobile operation**
- **Simple to follow dual function keypad**
- **Simple 'Quick Start' set up procedure**
- **Data logger for 198k data points (Type PF330)**
- **Analog and pulse outputs**

CE

Applications

- **Potable Water**
- **River Water**
- **Cooling Water**
- **Demineralized Water**
- **Water/Glycol Solutions**
- **Chemicals**
  - **Leak Detection**
  - **Boiler Testing**

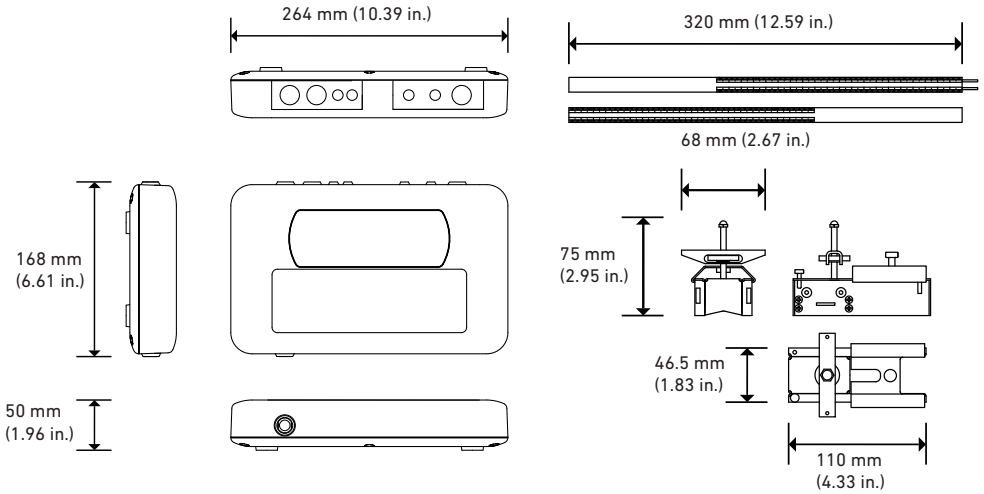
Specifications

General			
DSP Measurement Technique		Transit time	
Flow Velocity Range		0.1 m/s - 20 m/s	
Accuracy		Pipe ID >75 mm	±0.5% to ±2% of flow reading for flow rate >0.2 m/s
		Pipe ID 13 mm - 75 mm	±3% of flow reading for flow rate >0.2 m/s
		All pipe ID's	±6% of flow reading for flow rate <0.2 m/s
Repeatability		±0.5% of measured value or ±0.02 m/s whichever is the greater	
Response Time		< 500 ms depending on pipe diameter	
Selectable Flow Units		Velocity	m/sec, ft/sec.
		Volume	"l/s, l/min, l/h, gal/min, gal/h, USgals/min, USgals/h, Barrel/h, Barrel/day, m^3/s, m^3/min, m^3/h"
Selectable Total Volume Units		liter, gallon, US gallons, Barrel, m^3	
Total Volume		12 digits	
Menu Languages		EN, DE, FR, RU, SWE, IT, SP, P, NO, DEN	
Environmental			
Operating Temperature		-20 °C to 50 °C	-4 °F to 122 °F
Storage Temperature		-25 °C to 65 °C	-13 °F to 149 °F
Pipe Wall Temperature		-20 °C to 135 °C	-4 °F to 275 °F
Operating Humidity		Max. 90% relative humidity @ 50°C (122 °F)	
Applicable Pipe Types			
Pipe Materials		PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316, Copper	
Pipe Dimension (OD)	Type PF220	13 mm to 1000 mm	0.5 in. to 39 in.
	Type PF330	13 mm to 2000 mm	0.5 in. to 78 in.
Pipe Wall Thickness		1 mm to 75 mm	0.04 in. to 3 in.
Pipe Lining		Applicable pipe linings include Rubber, Glass, Concrete, Epoxy, Steel	
Pipe Lining Thickness		0 mm to 10 mm	0 in. to 0.4 in.
Electrical			
Supply Voltage		9 to 24 V DC	
Power Consumption		Max. 10.5 W	
Battery			
	Technology	5-cell NiMH	
	Capacity	3.8 Ah	
	Operating Time (typical)	Typically 20 hours continuous with backlight and 4 to 20 mA output OFF	
	Recharge Time	6.5 h	
	Service Life	>500 charge/discharge cycles	
Power supply			
Input Voltage		90 to 264 V AC (47 to 63 Hz)	
Output Voltage		12 V DC	
Output Current Maximum		1.5 A	
Approvals		UL, CUL, TUV, CB, CE	
Outputs			
Analog Output	Range	4 to 20 mA, 0 to 20 mA, 0 to 16 mA	
	Resolution	0.1% of full scale	
	Load Max.	620 Ω	
	Isolation	1500 V Opto-isolated	
	Alarm Current	Adjustable between 0 to 26mA	
Pulse Output	Type	Digital MOSFET relay	
	Pulse Repetition	Max. 500 pps, user programmable	
	Pulse Width	5 - 500 ms, user programmable	
	Voltage Max.	48 V	
	Current Max.	500 mA	
	Isolation	1500 V opto isolated	
USB Interface (PF330 only)	Protocol	Supports full speed (12Mbits/sec) data connection	
	Software	USB driver software is provided with the package	
	Connector	Proprietary industrial connector	
RS-232 Interface (PF330 only)	Protocol	Serial RS-232 communication including handshaking	
	Connector	Proprietary industrial connector (GND, RxD, TxD, DTR, DSR)	

Specifications (continued)

Data Logger (PF330 only)				
Data Logged		Log application details, flow rate, total flow, unit, time stamp		
Number of Data Points		198 k		
Number of Data Sites		20		
Number of Data Points per Site		No limit (max. 198k)		
Programmable Logging Interval		5 s - 1 h		
Start / Stop		Manually or timer controlled		
Data Download		Via RS-232 / USB interface		
Transducer Sets				
Type A		Type PF220 & PF330	13 - 114 mm (0.51 in - 4.49 in) pipe O.D. (2MHz)	
Type B		Type PF220	50 - 1000 mm (1.97 in - 39.37 in) pipe O.D. (1MHz)	
		Type PF330	115 - 2000 mm (1.97 in - 39.37 in) pipe O.D. (1MHz)	
Enclosure and Display				
Material		ABS		
Dimensions		264 x 168 x 50 mm	10.4 x 6.6 x 2.0 in.	
Weight		1.1 kg (incl. battery)	2.45 lb	
Keypad		16 key tactile feedback membrane keypad		
Display	Type	240 x 64 pixel graphic display, high contrast black-on-white, with backlight		
	Viewing angle	Min. 30°, typically 40°		
	Active area	127 x 34 mm	5 x 1.3 in.	
IP Rating		IP 54		
Shipping Weight				
		PF330		PF220	
Box dimensions	420 x 390 x 220 mm	16.5 x 15.4 x 8.7 in.	510 x 140 x 440 mm	20 x 5.5 x 17.3 in.
Weight	7.5 kg	16.5 lb	6 kg	13.2 lb
Volumetric Weight	5.7 kg	12.5 lb	5.2 kg	11.5 lb
Standards and Approvals				
	CE, RoHS compliant			
	Safety	BS EN 61010		
	EMC	BS EN 61326 - 1:2006	BS EN 61326-2-3:2006	
	Power Supply	EN61204 - 3	UL, CUL, TUV, CB, CE	

Dimensions



System Overview

220 Portable Ultrasonic Flowmeter

1 - Portaflow 220 instrument
2 - Ruled separation bar
3 - Transducers 'A-ST' x2 for use with pipes ranging 13mm – 114mm, or 'B-ST' x2
4 - Guide rail
5 - Chains x2 - 0.5 m long (1.65 ft) for A-ST, or 3.3 m long (10.8 ft) for B-ST type transducers
6 - Transducer cables (x2) 2 meters long
7 - Test block
8 - Acoustic couplant
9 - Output cable
10 - Power supply
11 - Manual (not shown)

The Portaflow 220 equipment is supplied in a Polypropylene carrying case fitted with a foam insert to give added protection for transportation.

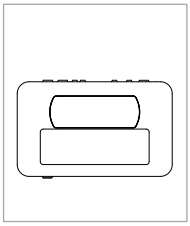
System Overview

330 Portable Ultrasonic Flowmeter

1 - Portaflow 330 instrument with backlit graphic display
2 - Ruled separation bar
3- Transducers 'A-ST' x2 for use with pipes ranging 13mm – 114mm
4 - Transducers 'B-ST' x2 for use with pipes ranging 115mm – 2000mm
5 - Guide Rail
6 - Chains x2 3.3 m long (10.8 ft)
7 - Transducer cables (x2) 2 meters long
8 - Test block
9 - Acoustic couplant
10 - Output cable
11 - RS-232 cable
12 - USB cable
13 - Power supply
14 - Manual (not shown)

The Portaflow 330 equipment is supplied in a rugged IP67 carrying case fitted with a foam insert to give added protection for transportation.

Ordering Information



Mfr. Part No.	Code	Description
Standard		
PF 220 A	**159 300 002**	Portaflow PF220, for pipe OD 13 mm - 114 mm (0.51 in - 4.49 in)
PF 220 B	**159 300 003**	Portaflow PF220, type B transducers for pipe OD 50 mm - 1000 mm (1.97 in - 39.37 in)
PF 330 A+B	**159 300 001**	Portaflow PF330, type A and B transducers for pipe OD 13 mm - 2000 mm (1.97 in - 39.37 in), data logger

U1000 V2 Ultrasonic Flowmeter

The U1000 V2 is an ultrasonic permanent clamp-on flow metering solution for measuring flow rate. This cost effective device can either be used as a stand-alone meter or as an integral part of a control loop.

The U1000 V2 is very simple to install – clamp it on to the pipe, connect it to power and enter the pipe diameter. No expertise or special tools are required.

The "clamp-on" concept makes the installation of the sensors in running systems possible. The pipe does not have to be opened. Compact, robust and reliable – the U1000 V2 was designed for long-term use in industrial applications.

Features

- **Large, easy to read graphic display with backlighting**
- **Easy to install without special tools**
- **"Clamp-on" design**
- **Expanded size range (¾ inch to 6 inch)**
- **Simple to follow programming menu**
- **Simple quick-start set up procedure**
- **Compact integral design**

CE

25

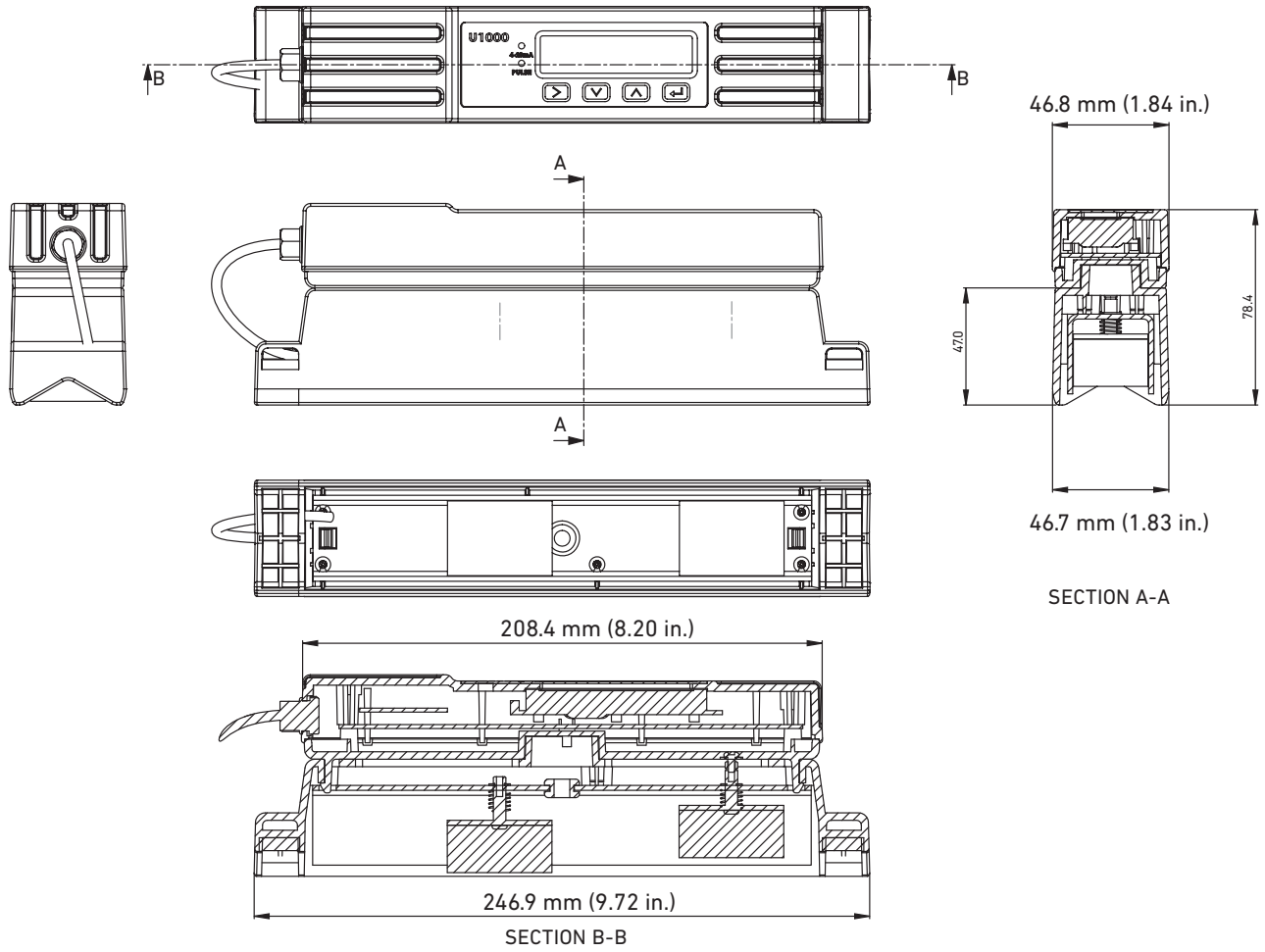
Applications

- **Ultrapure water measurement**
- **Flow measurement for heat metering**
- **Chilled water metering**
- **Flow measurement for energy metering**
- **Monitoring of manufacturing processes**
- **New Water / Glycol Measurement**

Specifications

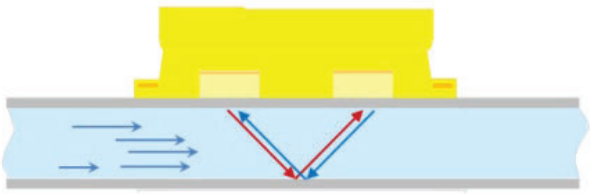
General			
Measuring Method		Ultrasonic runtime measurement	
Flow Range		0.1 m/s – 10 m/s (0.3 ft/s - 33 ft/s), bi-directional	
Accuracy		± 3 % of the flow value with a flow rate > 0.3 m/s (1.0 ft/s)	
Repeatability		±0.5 % of measured value	
Response Time		< 500 ms	
Selectable Flow Units		Velocity	m/sec, ft/sec.
		Volume	l/s, l/min, gal/s, gal/min, USgal/s, USgal/min, m3/min, m3/hr
Selectable Totalizer units		l, m3, gals, USgals	
Menu Languages		EN	
Environmental			
Operating Temperature		0 °C to 50 °C	32 °F to 122 °F
Storage Temperature		-10 °C to +60 °C	14 °F to 140 °F
Temperature of pipe wall		0 °C to 85 °C	32 °F to 185 °F
Humidity during operation		Maximum 90 % relative humidity at +50 °C (122 °F)	
Suitable Pipe Types			
Pipe Materials		PVDF, PP-H, PE, PB, ABS, UPVC, CPVC, construction steel, iron, stainless steel 316	
Pipe Diameter (d)		d22 - d180 mm*	0.86 - 7 inch* (¾ inch to 6 inch)
Electronics			
Power Supply		12 to 24 V AC/DC	
Power Consumption		Maximum 7 VA	
Outputs			
Analog Output	Range	4 to 20 mA	
	Resolution	0.1 % of measurement range	
	Load Maximum	620 Ω	
	Insulation	1500 V optically isolated	
	Alarm Current	3.5 mA	
Pulse Output	Type	Opto-isolated MOSFET volt free contact (NO/NC)	
	Pulse Sequence	1 – 166 pps user-programmable frequency mode max. 200 Hz	
	Pulse Width	25 ms standard value, 3 – 99 ms user-programmable	
	Maximum Voltage	48 V AC	
	Maximum Current	500 mA	
	Insulation	2500 V optically isolated	
Housing and Display			
Material		Polycarbonate	
Dimensions		250 x 48 x 90 mm	9.85 x 1.9 x 3.55 inch
Weight		0.5 kg	1.1 lb
Keyboard		Keypad with 4 buttons	
Display	Type	LCD, 2 lines x 16 characters	
	Viewing Angle	Min. 30°, Max. 40°	
	Active Area	83 x 18.6 mm	3.3 x 0.73 inch
Protection class		IP 54	
Shipping Information			
Packet Dimensions		290 x 280 x 100 mm	11.4 x 11 x 4 inch
Weight		1.4 kg	0.05 lb
Volume Weight		1.4 kg	0.05 lb
Standards and Approvals			
	CE, Conforms to RoHS		
	Security	BS EN 61010-1:2001	
	EMV	BS EN 61326-1:2006	BS EN 61326-2-3:2006
	Environment	BS EN 60068-1:1995	
		BS EN 60068-2-1:2007	BS EN 60068-2-2:2007

Dimensions



Function

The U1000 V2 functions, as do all current ultrasonic flow meters, according to the path-time principle of ultrasonic waves.



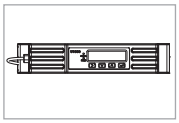
The device is installed directly on a pipe surface and transmits ultrasonic waves back and forth between the two sound transducers. Depending on the flow, a small time difference arises between the two ultrasonic signals – this is proportional to the flow speed.

The U1000 V2 is especially configured for pure water and can be used on PVDF-ABS, PVC, PP, PE, PB-Instaflex, iron and steel pipes. Processes can be monitored directly by a higher-level system via 4 to 20 mA, Modbus, pulse or frequency output

Technical Data

No.	Description
1	Power supply (AC/DC)
2	Pipe bracket
3	Electronics module
4	Guide rail
5	User interface
6	Pipe

Ordering Information



Mfr. Part No.	Code	Description
U1000 V2	**159 300 300**	U1000 V2, 4 to 20 mA & Frequency, d22 - d115 (¾ in. to 4 in.)
U1000 V2	**159 300 301**	U1000 V2, 4 to 20 mA & Frequency, d125 - d180 (5 in. to 6 in.)
U1000 V2	**159 300 302**	U1000 V2, Modbus & Frequency, d22 - d115 (¾ in. to 4 in.)
U1000 V2	**159 300 303**	U1000 V2, Modbus & Frequency, d125 - d180 (5 in. to 6 in.)

ULTRAFLOW U3000 / U4000 Ultrasonic Flowsensor

The Ultraflow brings simplicity to the non-invasive measurement of liquid flow, offering the user quick and accurate flow measurement with its easy to follow menu and simple set up. Dry servicing, providing minimum downtime and maximum availability, even in a continuously running system. Compact, rugged and reliable, the Ultraflo has been designed to provide sustained performance in industrial environments.

Features

- **Large, easy to read graphic display**
- **Easy to install**
- **Clamp-on sensors for dry servicing**
- **Simple to follow programming menu**
- **Simple 'Quick Start' set up procedure**
- **Data logger for 198 k data points (Type U4000)**
- **Analog, pulse and alarm outputs**
- **Reynolds number correction**

CE

Applications

- **HVAC & Energy System Audits**
- **Pump Verification**
- **Process Control**
- **Chemical Addition**
- **Hydraulic Systems**
- **Fire Systems**
- **Leak Detection**
- **Boiler Testing**

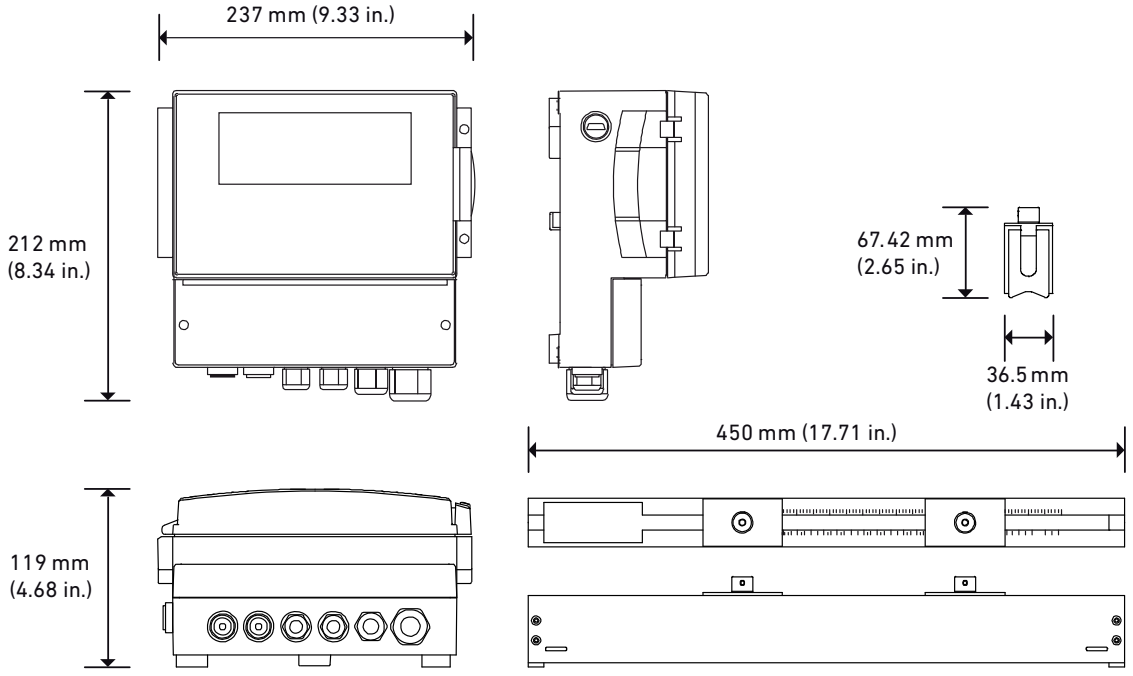
Specifications

General		
DSP Measurement Technique	Transit time	
Flow Velocity Range	0.1 m/s - 20 m/s (0.33 f/s - 66 f/s)	
Accuracy	Pipe ID >75 mm	±0.5% to ±3 % of flow reading for flow rate >0.2 m/s (0.66 f/s)
	Pipe ID 13 mm - 75 mm	±3% of flow reading for flow rate >0.2 m/s (0.66 f/s)
Repeatability	±0.5% of measured value or ±0.02 m/s whichever is the greater	
Response Time	< 500 ms depending on pipe diameter.	
Selectable Flow Units	Velocity	m/sec, ft/sec.
	Volume	l/s, l/min, l/h, gal/min, gal/h, USgals/min, USgals/h, Barrel/h, Barrel/day, m^3/s, m^3/min, m^3/h.
Selectable Total Volume Units	liters, m^3, gallons, US gallons, barrels	
Total Volume	12 Digits	
Menu Languages	EN, DE, FR, RU, SWE, IT, SP, P, NO, DEN	
Environmental		
Operating Temperature	-20 °C to +50 °C	-4 °F to +122 °F
Storage Temperature	-25 °C to +75 °C	-13 °F to +167 °F
Pipe Wall Temperature	-20 °C to +135 °C	-4 °F to +275 °F
Operating Humidity	Max. 90% relative humidity @ 50 °C (122 °F)	
Applicable Pipe Types		
Pipe Materials	PVDF-SYGEF, PP-PROGEF, PE-ELGEF, PB-INSTAFLEX, ABS, PVC-U/PVC-C, Mild Steel, Ductile Iron, Stainless Steel 316, Copper	
Pipe Dimension (OD)	13 mm to 2000 mm	0.5 in. to 78 in.
Pipe Wall Thickness	1 mm to 75 mm	0.04 in. to 3 in.
Pipe Lining	Applicable pipe linings include Rubber, Glass, Concrete, Epoxy, Steel	
Pipe Lining Thickness	0 mm to 25 mm	0 in. to 1 in.
Electrical		
Supply Voltage	12 - 24 V AC or DC; 86 - 264 V AC (47Hz to 63Hz)	
Power Consumption	Max. 10.5 W	
Outputs		
Analog Output	Range	4 to 20 mA, 0 to 20 mA, 0 to 16 mA
	Resolution	0.1% of full scale
	Load Max.	620 Ω
	Isolation	1500 V Opto-isolated
	Alarm Current	Adjustable between 0–26 mA
Pulse Output	Type	Digital MOSFET relay
	Pulse Repetition	1 to 250 pps, user programmable
	Pulse Width	2 to 500 ms, user programmable
	Voltage Max.	48 V
	Current Max.	500 mA
	Isolation	1500 V opto isolated
Alarm Outputs	Type	2 x MOSFET relays
	Voltage Max.	48 V
	Current Max.	500 mA
	Isolation	1500 V opto isolated
	Alarm Function	High / Low flow rate, flow volume or signal error
USB Interface (U4000 only)	Protocol	Supports full speed (12Mbits/sec) data connection
	Software	USB driver software is provided with the package
	Connector	Mini USB
RS-232 Interface (U4000 only)	Protocol	"Serial RS-232 communication including XON/XOFF handshaking"
	Terminal Block	GND, RxD, TxD

Specifications (continued)

Data Logger (U4000 only)			
Data Logged		Log application details, flow rate, unit, time stamp	
Number of Data Points		198 k	
Number of Data Sites		20	
Number of Data Points per Site		No limit (max. 198k)	
Programmable Logging Interval		5 s - 1 h	
Start / Stop		Manually or timer controlled	
Data Download		Via RS232 / USB interface	
Transducer Sets			
	Type A	13 - 114 mm pipe O.D. (2 MHz)	
	Type B	115 - 2000 mm pipe O.D. (1 MHz)	
Enclosure and Display			
Material		ABS and aluminium	
Dimensions		230 x 180 x 120 mm	9.0 x 7.1 x 4.7 in.
Weight		1.2 kg	2.65 lb
Keypad		"15 key tactile feedback membrane keypad"	
Display	Type	240 x 64 pixel graphic display, high contrast black-on-white, with backlight.	
	Viewing Angle	Min. 30°, typically 40°	
	Active Area	127 x 34 mm	5 x 1.3 in.
IP Rating		IP 65	
Shipping Weight			
Box Dimensions		480 x 320 x 230 mm	19 x 12.5 x 9 in.
Weight		4.8 kg	10.6 lb
Volumetric weight		5.8 kg	12.8 lb
Standards and Approvals			
	CE, RoHS compliant		
	EMC	BS EN 61326-1:2006	BS EN 61326-2-3:2006
	Safety	BS EN 61010-1:2001	
	Environmental	BS EN 60068-1:1995	
		BS EN 60068-2-1:2007	
		BS EN 60068-2-2:2007	

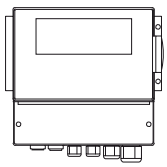
Dimensions



System Overview

1 - Instrument with backlit graphic display
2 - Guide rail for use with 'A' or 'B' transducers
3 - Steel bands used to secure the transducer guide rails to the pipe
4 - Transducers 'A-ST' x2 (U3000/U4000A) for use with pipes ranging 13 mm – 114 mm
5 - Transducers 'B-ST' x2 (U3000/U4000B) for use with pipes ranging 115 mm – 2000 mm
6 - User documentation
7 - Acoustic couplant
8 - USB cable and RS232-C cable (U4000)
9 - Transducer cables (x2) 10 meters long

Ordering Information



Mfr. Part No.	Code	Description
Supply voltage 230 V AC		
U3000A d13-114	**159 300 004**	Ultraflow U3000, for pipe OD 13 - 114 mm (0.5 in - 4.5 in)
U3000B d115-299	**159 300 006**	Ultraflow U3000, for pipe OD 115 - 299 mm (4.5 in - 11.8 in)
U3000B d300-2000	**159 300 075**	Ultraflow U3000, for pipe OD 300 - 2000 mm (11.8 in - 77.7 in)
U4000A d13-114	**159 300 008**	Ultraflow U4000, for pipe OD 13 - 114 mm (0.5 in - 4.5 in), data logger
U4000B d115-299	**159 300 010**	Ultraflow U4000, for pipe OD 115 - 299 mm (4.5 in - 11.8 in), data logger
U4000B d300-2000	**159 300 076**	Ultraflow U4000, for pipe OD 300 - 2000 mm (11.8 in - 77.7 in), data logger
Supply voltage 24 V DC		
U3000A d13-114	**159 300 005**	Ultraflow U3000, for pipe OD 13 - 114 mm (0.5 in - 4.5 in)
U3000B d115-299	**159 300 007**	Ultraflow U3000, for pipe OD 115 - 299 mm (4.5 in - 11.8 in)
U3000B d300-2000	**159 300 077**	Ultraflow U3000, for pipe OD 300 - 2000 mm (11.8 in - 77.7 in)
U4000A d13-114	**159 300 009**	Ultraflow U4000, for pipe OD 13 - 114 mm (0.5 in - 4.5 in), data logger
U4000B d115-299	**159 300 011**	Ultraflow U4000, for pipe OD 115 - 299 mm (4.5 in - 11.8 in), data logger
U4000B d300-2000	**159 300 079**	Ultraflow U4000, for pipe OD 300 - 2000 mm (11.8 in - 77.7 in), data logger

Accessories

Code	Description
159 300 068	Cable Kit 5 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 069	Cable Kit 10 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 290	Cable Kit 15 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 070	Cable Kit 20 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 291	Cable Kit 25 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 292	Cable Kit 30 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 293	Cable Kit 35 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 294	Cable Kit 40 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 295	Cable Kit 45 meter - Sensor Cable Kit (contains 2 cables each red/blue)
159 300 296	Cable Kit 50 meter - Sensor Cable Kit (contains 2 cables each red/blue)

Signet Flow Instruments

	9950	9900	9900-1BC
Description	Multi-Channel (2 Channel), Multi-Parameter Controller	Single-Channel, Multi-Parameter Transmitter	Single-Channel, Single Parameter Controller
Modular Components	Yes		
Number of Flow Totalizers	2 Permanent 2 Resettable	1 Permanent 1 Resettable	
Max. Sensor Inputs	2 frequency or (S^3L) inputs	1	
Mounting Options	Panel	Panel, Wall, Pipe, Tank	Panel, Wall, Pipe, Tank installation using rear enclosure
Display	LCD, Dot matrix	LCD with digital bar graph	
Analog Output Types	2 Passive 4 to 20 mA Outputs, Standard up to 6 via optional modules (optional relay module)	2 Passive 4 to 20 mA 1 standard, 1 optional with 4 to 20 mA output module HART optional with H COMM module	1 Passive 4 to 20 mA
Max. Relays / O.C.	4 dry contact relays or 2 mechanical and 2 solid state relays (optional relay module)	1 open collector (standard) 2 relays (optional relay module)	1 open collector 2 relays
Derived Measurements	6 Derived Measurements Sum, Delta (Difference), Ratio, % Passage% Reject, % Recovery	N/A	
Languages	English, French, German, Spanish and Simplified Chinese	English	
Ambient Temperature (°C) **Storage Temperature (°F)**	DC -10 °C to 70 °C (14 °F to 158 °F) AC -10 °C to 60 °C (14 °F to 140 °F) -15 °C to 70 °C (5 °F to 158 °F)	-10 °C to 70 °C (14 °F to 158 °F) -15 °C to 70 °C (5 °F to 158 °F)	-10 °C to 70 °C (14 °F to 158 °F) -15 °C to 70 °C (5 °F to 158 °F)
Relative Humidity	0 to 95%, non-condensing		
Power Requirements	DC - 24 VDC nominal (12 to 32 VDC, ±10% regulated) AC - 100 to 240 VAC, 50 to 60 Hz, 24 VA	24 VDC input range: 10.8 to 35.2 VDC regulated	
Standards and Approvals	CE, FCC, UL, CUL, RoHS compliant, China RoHS, NEMA TYPE 4X/IP65 (front face only on panel mount)	CE, FCC, UL, CUL, RoHS compliant, Lloyd's Register, China RoHS, NEMA TYPE 4X/IP65 (front face only on panel mount); field mount is 100% NEMA TYPE 4X/IP65	CE, UL, CUL, FCC, RoHS compliant, China RoHS, NEMA TYPE 4X/IP65 (front face only)

Specification Matrix

	8900	8150
Description	Multi-Channel, Multi-Parameter Controller	Battery Powered Flow Totalizer
Modular Components	Yes	No
Number of Flow Totalizers	6 Permanent 6 Resettable	1 Permanent 2 Resettable
Max. Sensor Inputs	up to 2 frequency and 4 (S^3L) or 6 (S^3L) 6 total sensor inputs	1
Mounting Options	Panel	Panel, Wall, Pipe, Tank, Integral
Display	LCD	
Analog Output Types	4 Passive/Active 4 to 20 mA or (2) 0 to 5/10 VDC	None
Max. Relays / O.C.	Up to (8) relays (via 8059)	None
Derived Measurements	Sum, Difference, % Recovery, % Reject, % Passage, Ratio, Power (BTU)	None
Languages	English, French, German, Spanish, Italian, and Portuguese	English
Ambient Temperature (°C) **Storage Temperature (°F)**	-10 °C to 55 °C (14 °F to 131 °F) -15 °C to 80 °C (5 °F to 176 °F)	-10 °C to 65 °C (14 °F to 149 °F)
Relative Humidity	0 to 95%, non-condensing	
Power Requirements	12 to 24 VDC ±10%, regulated or 100 to 240 VAC ±10%, regulated, 50/60 Hz	(2) 3.6 V Lithium Batteries
Standards and Approvals	CE, FCC, UL, CUL, RoHS compliant, China RoHS NEMA 4X/IP65 (front face only)	CE, FCC, UL, CUL, RoHS compliant, China RoHS, NEMA 4X/IP65 (front face only on panel mount); field mount is 100% NEMA 4X/IP65

Signet 8150 Battery Powered Flow Totalizer

Member of the ProcessPro® Family of Instruments

Panel Mount

Pipe, Wall, and Tank Mount

Integral Mount

The Signet 8150 Battery Powered 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 AutoCal 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. Users 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**
- **R.O. Concentrate**
- **Process Flow Monitoring**
- **UPW Distribution**
- **Demineralizer Regeneration**
- **Process Cooling Water**

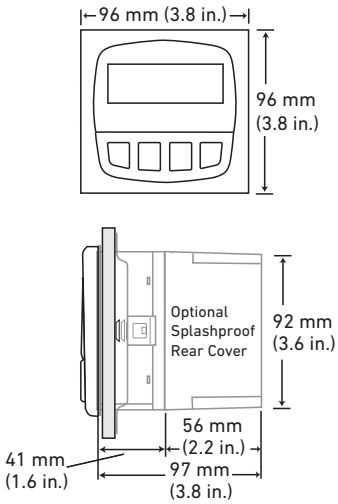
Specifications

General		
Compatibility	Signet 515 and 525 Flow Sensors	
Input Frequency Range	0 to 400Hz	
Accuracy	±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	Sealed 4-key silicon rubber	
Panel and Case Gasket	Neoprene	
Window	Polyurethane coated polycarbonate	
Electrical		
Battery	Two 3.6 V Lithium thionyl chloride, AA-size	
Battery Life	4 years nominal @ 50 °C (122 °F)	
Environmental		
Operating Temperature	-10 °C to 65 °C	14 °F to 149 °F
	-40 °C to 100 °C	-40 °F to 212 °F
Relative Humidity	0 to 95%, non-condensing	
Enclosure	NEMA 4X/IP65 (front face only on panel mount); field mount is 100% NEMA 4X/IP65	
Shipping Weight		
	0.5 kg	1.1 lb
Standards and Approvals		
	CE, FCC, UL, CUL	
	RoHS compliant, China RoHS	
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety	

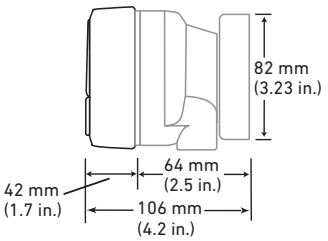
Dimensions

3-8150-1P

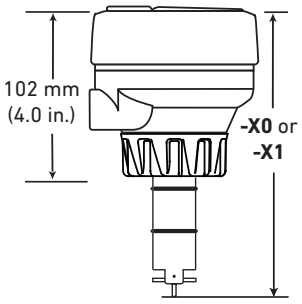
Panel Mount



3-8150-1 with Universal Mount

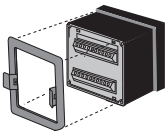
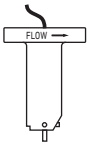
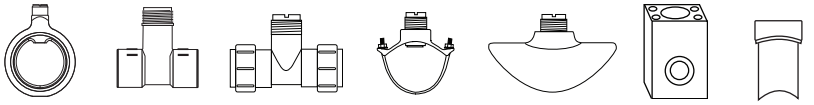


Model 515 Integral Mount Sensors - see 515 data sheet for specifications



-X0 = 152 mm (6.0 in.)
-X1 = 185 mm (7.3 in.)

System Overview

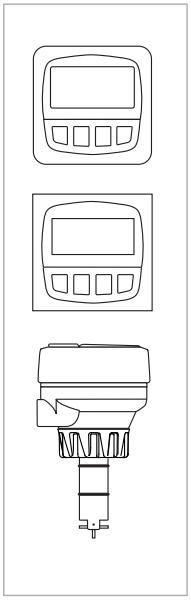
Panel Mount	Pipe, Tank, Wall Mount
Signet 8150 Flow Totalizer includes mounting bracket and panel gasket  	**Signet 8150 Flow Totalizer** with 3-8050 Universal Mount Kit  + 
Signet Sensors 515 525 	
Signet Fittings 	All sold separately

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 splashproof rear cover can be ordered separately if needed.

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

Ordering Information



Mfr. Part No.	Code	Mounting notes
Battery Operated Flow Totalizer		
Field Mount (yellow body)		
3-8150-1	**159 000 929**	Field mount for pipe, tank, and wall mounting
Panel Mount (black body)		
3-8150-1P	**159 000 930**	Panel mount; includes mounting bracket and panel gasket
Integral Mount		
for ½ to 4 in. pipes		
3-8150-P0*	**159 000 931**	mounted on Model 515 Paddlewheel (Part No. 3-8510-P0), w/ polypropylene body, black polypropylene retaining nut, black PVDF rotor, and Titanium pin
3-8150-T0*	**159 001 011**	mounted on Model 515 Paddlewheel (Part No. 3-8510-T0), with a natural PVDF body, natural PVDF retaining nut, rotor, and pin
for 5 to 8 in. pipes		
3-8150-P1*	**159 000 932**	mounted on Model 515 Paddlewheel (Part No. 3-8510-P1), w/ polypropylene body, black polypropylene retaining nut, black PVDF rotor, and Titanium pin

* See individual sensor sheets for more sensor information.

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
Mounting		
3-8050	**159 000 184**	Universal Mounting Kit
3-8050.390-1	**159 001 702**	Retaining Nut Replacement Kit, NPT, Valox
3-8050.390-3	**159 310 116**	Retaining Nut Replacement Kit, NPT, PP
3-8050.390-4	**159 310 117**	Retaining Nut Replacement Kit, NPT, PVDF
3-0000.596	**159 000 641**	Heavy Duty Wall Mount Bracket (panel mount only)
3-5000.399	**198 840 224**	Panel Adapter, 5 x 5 in. to ¼ DIN
3-5000.598	**198 840 225**	Surface Mount Bracket (panel mount only)
3-8050.395	**159 000 186**	Splashproof Rear Cover (panel mount only)
3-9900.396	**159 001 701**	Angle Adjustment Adapter Kit
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, Valox
3-8051-1	**159 001 755**	Flow Integral Mounting Kit, NPT, PP
3-8051-2	**159 001 756**	Flow Integral Mounting Kit, NPT, PVDF
3-8510-P0	**198 864 504**	Sensor for ½ to 4 in. pipes, Polypropylene body
3-8510-PI	**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

Flow Integral Systems with 9900 Transmitter

Member of the SmartPro® Family of Instruments

Signet has combined the 9900 SmartPro® Transmitter with the 515/8510 and 2536/8512 Paddlewheel Flow Sensors to create integral systems that are easy to order and simple to install. Integral systems are also available in conductivity, level, temperature, and pressure configurations.

Each integral system features a 9900 Transmitter which provides a local and easy to read LCD display. The push button keypad makes it easy to navigate through the transmitter's menu. The DC-powered 9900 features a scalable 4 to 20 mA output and open collector for process control.

Flow Integral Systems with 9900 Transmitters are combined with Signet's field-proven Models 515/8510 and 2536/8512. These sensors reliably perform in flow ranges from 0.3 to 6 m/s (1 to 20 ft/s) and 0.1 to 6 m/s (0.3 to 20 ft/s) respectively for pipe sizes from ½ to 8 inches. They are available in a variety of materials including polypropylene and PVDF and are easily mounted in the pipe using Signet's comprehensive line of standard fittings.

Features

- **Local display for sensor mounted instruments**
- **Provides 4 to 20 mA output**
- **"At a glance" visibility**
- **"Dial-type" digital bar graph**
- **NEMA 4X/IP65**

Applications

- **RO/DI System Control**
- **Cooling Tower Control**
- **Water Quality Monitoring**
- **Filtration Systems**
- **Chemical Production**
- **Liquid Delivery Systems**
- **Pump Protection**
- **Scrubber Systems**
- **Semiconductor Water Production**

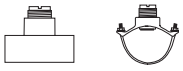
System Overview

Integral Installation

Signet Model 9900 Transmitter
with 3-8051-X Integral Mount Kit

Signet Sensor
8510
8512

Signet Fittings



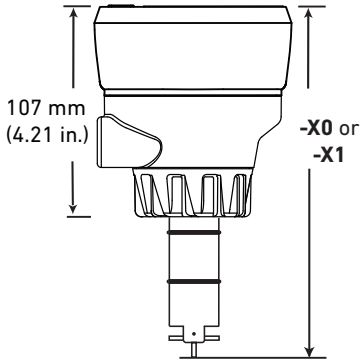
All sold separately

Refer to Models 515/8510, 2536/8512 and 9900 technical specifications for more details on these products.

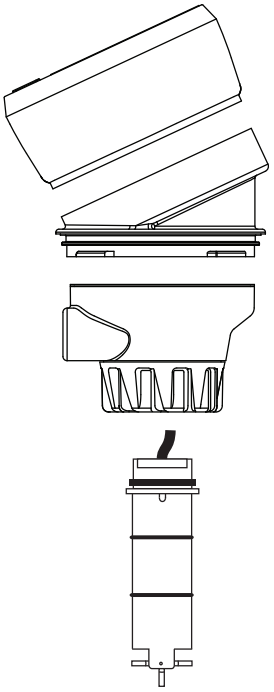
Specifications

See individual product pages for more information.

Dimensions



-X0 = 170 mm (6.7 in.)
-X1 = 203 mm (8.0 in.)



3-9900
Instrument

3-9900.396
Angle Adjustment Adapter Kit
(optional accessory)

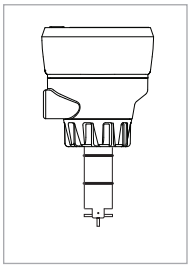
3-8051-X
Integral Mount Kit

3-8510-X or 3-8512-X
Flow Sensor

Ordering Notes
Integral Mounts are available with all parts conveniently assembled (transmitter, sensor, and mounting kit). Alternatively, all three parts can be purchased separately. See individual transmitter and sensor pages for more information.

Only available in Europe

Ordering Information



Mfr. Part No. /Code	Instrument + Sensor	Pipe Size	Sensor Body Material	Sensor Rotor/Pin Material
159 001 733	3-9900-1 w/ 3-8510-P0	½ to 4 in.	Polypropylene	Black PVDF/Titanium
159 001 734	3-9900-1 w/ 3-8510-H0	½ to 4 in.	Polypropylene	Black PVDF/Hastelloy-C
159 001 735	3-9900-1 w/ 3-8510-S0	½ to 4 in.	Polypropylene	Black PVDF/Natural PVDF
Special order via DZS	3-9900-1 w/ 3-8510-V0	½ to 4 in.	Natural PVDF	Natural PVDF/Hastelloy-C
159 001 736	3-9900-1 w/ 3-8510-T0	½ to 4 in.	Natural PVDF	Natural PVDF/Natural PVDF
159 001 737	3-9900-1 w/ 3-8510-P1	5 to 8 in.	Polypropylene	Black PVDF/Titanium
159 001 738	3-9900-1 w/ 3-8512-P0	½ to 4 in.	Polypropylene	Black PVDF/Titanium
159 001 739	3-9900-1 w/ 3-8512-H0	½ to 4 in.	Polypropylene	Black PVDF/Hastelloy-C
159 001 740	3-9900-1 w/ 3-8512-S0	½ to 4 in.	Polypropylene	Black PVDF/Natural PVDF
159 001 741	3-9900-1 w/ 3-8512-V0	½ to 4 in.	Natural PVDF	Natural PVDF/Hastelloy-C
159 001 742	3-9900-1 w/ 3-8512-T0	½ to 4 in.	Natural PVDF	Natural PVDF/Natural PVDF
159 001 743	3-9900-1 w/ 3-8512-P1	5 to 8 in.	Polypropylene	Black PVDF/Titanium

Accessories

Mfr. Part No.	Code	Description
3-9900.396	**159 001 701**	Angle Adjustment Adapter Kit
3-0252	**159 001 808**	Configuration Tool

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