# Signet 515/2536 Rotor-X Flow Sensors

English

## Instructions for all versions of: 515/8510 and 2536/8512

3-0515.090 Rev S 10/12 English

**SAFETY INSTRUCTIONS**

1. Depressurize and vent system prior to installation or removal.
2. Confirm chemical compatibility before use.
3. DO NOT exceed maximum temperature/pressure specifications.
4. ALWAYS wear safety goggles or faceshield during installation/service.
5. DO NOT alter product construction.

## 1. Specifications

### General Data

| | |
|---|---|
| Flow Rate Range: | |
| 515: | 0.3 to 6 m/s (1 to 20 ft/s) |
| 2536: | 0.1 to 6 m/s (0.3 to 20 ft/s) |
| Pipe Size Range: | DN15 to DN900 (½ in. to 36 in.) |
| Linearity: | ±1% of maximum range @ 25 °C (77 °F) |
| Repeatability: | ±0.5% maximum range @ 25 °C (77 °F) |
| Cable Length: | 7.6 m (25 ft) standard |
| 515: | 60 m (200 ft) maximum |
| 2536: | 305 m (1000 ft) maximum |
| Cable Type: | 2-conductor twisted pair w/shield (22 AWG) |
| Minimum Reynolds Number Required: | 4500 |
| Cap Material: | Glass Filled Polypropylene (red or blue) |

### Wetted Materials

| | |
|---|---|
| • Sensor Body: | Glass filled Polypropylene (black) or PVDF |
| • O-Rings: | FPM (Std), EPR (EPDM) or FFPM optional |
| • 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 |

Shipping Weight:

| | |
|---|---|
| -X0 | 0.454 kg (1 lb) |
| -X1 | 0.476 kg (1.04 lbs) |
| -X2 | 0.680 kg (1.50 lbs) |
| -X3 | 0.794 kg (1.75 lbs) |
| -X4 | 0.850 kg (1.87 lbs) |
| -X5 | 1.0 kg (2.20 lbs) |
| 3519 | 1.3 kg (2.86 lbs) |

### Electrical (515 Sensor)

| | |
|---|---|
| Frequency: | 19.7 Hz per m/s nominal (6 Hz per ft/s) |
| Amplitude: | 3.3 V p/p per m/s nominal (1 V p/p per ft/s) |
| Source Impedance: | 8 kΩ |

### Electrical (2536 Sensor)

| | |
|---|---|
| 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 |
| Output current: | 10 mA max. |

### Pressure/Temperature Ratings

Standard and Integral Sensor:
Polypropylene Body:
12.5 bar (180 psi) max. @ 20 °C (68 °F)

| | |
|---|---|
| • 515: | 1.7 bar (25 psi) max. @ 90 °C (194 °F) |
| • 2536: | 1.7 bar (25 psi) max. @ 85 °C (185 °F) |
| Operating Temp: | -18 to 66 °C (0 to 150 °F) |

PVDF Body:
• 14 bar (200 psi) max @ 20 °C (68 °F)

| | |
|---|---|
| • 515: | 1.7 bar (25 psi) max @ 100 °C (212 F) |
| • 2536: | 1.7 bar (25 psi) max @ 85 °C (185 °F) |
| Operating Temp: | -18 to 100 °C (0 to 212 °F) |

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

### Standards & Approvals

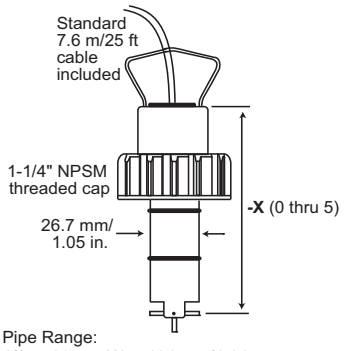
Manufactured under ISO 9001, ISO 14001 and OHSAS 18001.
CE (2536 only)

China RoHS (Go to www.gfsignet.com for details)

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and,
(2) This device must accept any interference received, including interference that may cause undesired operation.

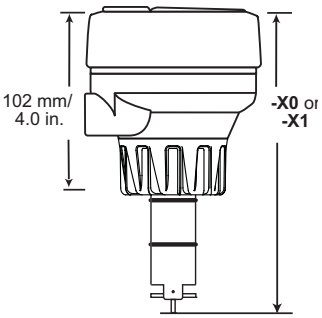
### Dimensions

**515/2536 Sensor**



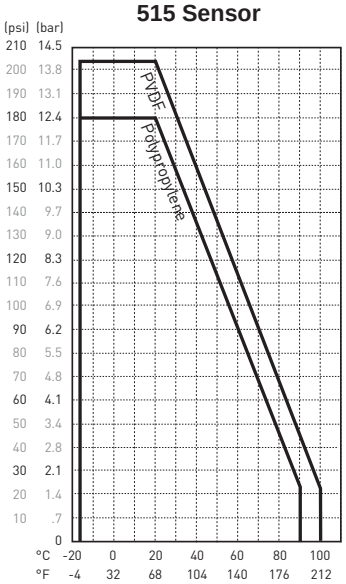

Pipe Range:
1/2 to 4 in. -X0 = 104 mm/4.1 in.
5 to 8 in. -X1 = 137 mm/5.4 in.
10" and up -X2 = 213 mm/8.4 in.
1/2 to 4 in. -X3 = 297 mm/11.7 in.
5 to 8 in. -X4 = 332 mm/13.1 in.
10" and up -X5 = 408 mm/16.1 in.
} Wet-tap Lengths

**8510-XX/8512-XX Integral Sensor shown with Transmitter and Integral Adapter Kit (sold separately)**

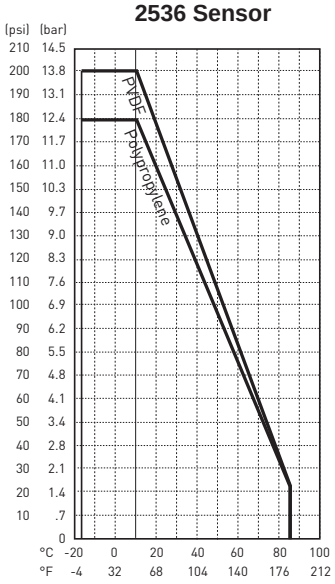



**-X0** = 152 mm/6.0 in.
**-X1** = 185 mm/7.3 in.

**515 Sensor**

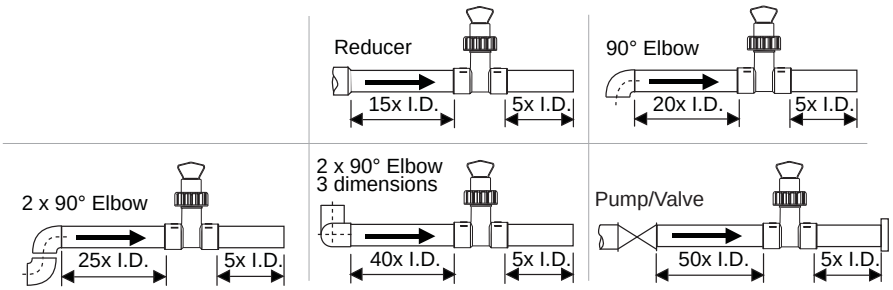



**2536 Sensor**



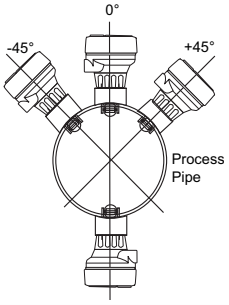
## 2. Location of Fitting

Recommended sensor upstream/downstream mounting requirements




## 3. Sensor Mounting Position

- Horizontal pipe runs: Mount sensor in the upright (0°) position for best performance. Mount at a maximum of 45° when air bubbles are present (pipe must be full). Do not mount on the bottom of the pipe when sediments are present.
- Vertical pipe runs: Mount sensor in any orientation. Upward flow is preferred to ensure full pipe.




## 4. Standard Sensor Installation

- Lubricate O-rings with a non-petroleum based, viscous lubricant (grease) compatible with the system.
- Using an alternating/twisting motion, lower the sensor into the fitting, making sure the installation arrows on the black cap are pointing in the direction of flow, see Figure A.
- Engage one thread of the sensor cap then turn the sensor until the alignment tab is seated in the fitting notch. Hand tighten the sensor cap. DO NOT use any tools on the sensor cap or the cap threads and/or fitting flange threads will be damaged, see Figure B.

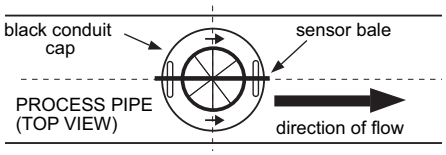



Figure A

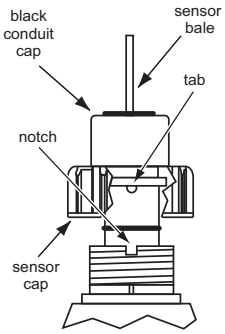


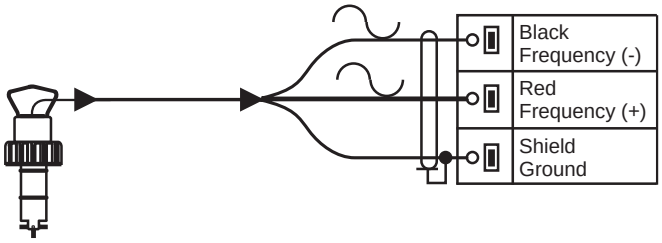

Figure B

## 5. Sensor Wiring

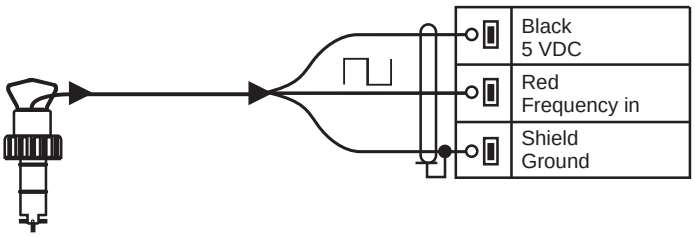
**Technical Notes**

- Use 2-conductor shielded cable for cable extensions.
- Cable shield must be maintained through cable splice.
- Refer to your instrument manual for specific wiring details.

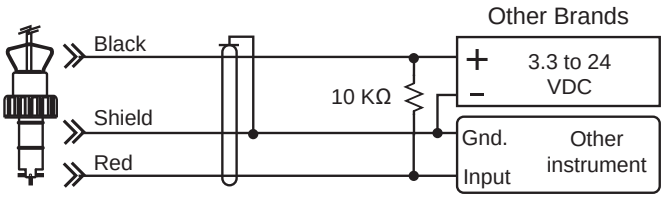
515 Sensor Connections to Signet Instruments




2536 Sensor Connections to Signet Instruments



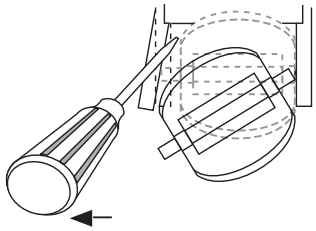

2536 Sensor Connections to Other Brand Instruments




● DC sensor power supplied from Signet instrument.
10 KΩ Pull-up resistor may be required for non-Signet brand instrument.

## 6. Rotor Replacement Procedure

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



## 7. K-Factors

A **K-Factor** is the number of pulses a sensor will generate for each engineering unit of fluid that passes the sensor. K-factors for water are listed below in U.S. gallons and liters. For example, in a 1-inch PVC pipe, the 515 paddlewheel generates 172.07 pulses per gallon of water passing the rotor. K-factors are listed for pipes up to 12 inches. For pipes over 12 inches, consult your Signet distributor.

| PIPE SIZE (IN.) | FITTING | 515/8510-XX | | 2536/8512-XX | |
|---|---|---|---|---|---|
| | | LITERS | U.S. GAL | LITERS | U.S. GAL |
| **SCH 80 PVC TEES FOR SCH 80 PVC PIPE** | | | | | |
| 1/2 | MPV8T005 | 137.42 | 520.12 | 271.37 | 1027.1 |
| 3/4 | MPV8T007 | 78.61 | 297.52 | 154.08 | 583.19 |
| 1 | MPV8T010 | 45.46 | 172.07 | 88.65 | 335.53 |
| 1-1/4 | MPV8T012 | 24.19 | 91.54 | 47.24 | 178.79 |
| 1-1/2 | MPV8T015 | 16.44 | 62.22 | 32.08 | 121.42 |
| 2 | MPV8T020 | 9.60 | 36.32 | 18.87 | 71.44 |
| **SCH 80 PVC TEES FOR SCH 80 PVC PIPE** | | | | | |
| 2-1/2 | PV8T025 | 5.7683 | 21.833 | 11.359 | 42.994 |
| 3 | PV8T030 | 3.5775 | 13.541 | 7.0414 | 26.652 |
| 4 | PV8T040 | 2.0147 | 7.6258 | 3.9645 | 15.006 |
| **SCH 80 CPVC TEES FOR SCH 80 CPVC PIPE** | | | | | |
| 1/2 | MCPV8T005 | 137.42 | 520.12 | 271.37 | 1027.1 |
| 3/4 | MCPV8T007 | 78.61 | 297.52 | 154.08 | 583.19 |
| 1 | MCPV8T010 | 45.46 | 172.07 | 88.65 | 335.53 |
| 1-1/4 | MCPV8T012 | 24.19 | 91.54 | 47.24 | 178.79 |
| 1-1/2 | MCPV8T015 | 16.44 | 62.22 | 32.08 | 121.42 |
| 2 | MCPV8T020 | 9.60 | 36.32 | 18.87 | 71.44 |
| **SCH 80 PVC SADDLES FOR SCH 80 PVC PIPE** | | | | | |
| 2 | PV8S020 | 8.5812 | 32.480 | 17.633 | 66.739 |
| 2-1/2 | PV8S025 | 5.7683 | 21.833 | 11.359 | 42.994 |
| 3 | PV8S030 | 3.5775 | 13.541 | 7.0414 | 26.652 |
| 4 | PV8S040 | 2.0147 | 7.6258 | 3.9645 | 15.006 |
| 6 | PV8S060 | 1.0997 | 4.1623 | 2.1994 | 8.3246 |
| 8 | PV8S080 | 0.6263 | 2.3705 | 1.3253 | 5.0164 |
| 10 | PV8S100 | 0.4042 | 1.5300 | 0.808 | 3.0600 |
| 12 | PV8S120 | 0.2801 | 1.0600 | 0.571 | 2.1600 |
| **SCH 80 PVC SADDLE ON SCH 40 PVC PIPE** | | | | | |
| 2 | PV8S020 | 7.2259 | 27.350 | 14.452 | 54.700 |
| 2-1/2 | PV8S025 | 4.9866 | 18.874 | 9.8175 | 37.159 |
| 3 | PV8S030 | 3.3389 | 12.638 | 6.2608 | 23.697 |
| 4 | PV8S040 | 1.7776 | 6.7282 | 3.5552 | 13.456 |
| 6 | PV8S060 | 0.9854 | 3.7297 | 1.9708 | 7.4594 |
| 8 | PV8S080 | 0.5688 | 2.1527 | 1.1966 | 4.5292 |
| 10 | PV8S100 | 0.3567 | 1.3500 | 0.740 | 2.8000 |
| 12 | PV8S120 | 0.2536 | 0.9600 | 0.523 | 1.9800 |

| PIPE SIZE (IN.) | FITTING | 515/8510-XX | | 2536/8512-XX | |
|---|---|---|---|---|---|
| | | LITERS | U.S. GAL | LITERS | U.S. GAL |
| **CARBON STEEL TEES ON SCH 40 PIPE** | | | | | |
| 1/2 | CS4T005 | 97.808 | 370.20 | 199.74 | 756.00 |
| 3/4 | CS4T007 | 56.027 | 212.06 | 115.90 | 438.69 |
| 1 | CS4T010 | 37.289 | 141.14 | 75.768 | 286.78 |
| 1-1/4 | CS4T012 | 16.025 | 60.655 | 32.026 | 121.22 |
| 1-1/2 | CS4T015 | 11.982 | 45.350 | 24.079 | 91.139 |
| 2 | CS4T020 | 7.0717 | 26.767 | 14.391 | 54.468 |
| **STAINLESS STEEL TEES ON SCH 40 PIPE** | | | | | |
| 1/2 | CR4T005 | 94.838 | 358.96 | 193.98 | 734.20 |
| 3/4 | CR4T007 | 53.530 | 202.61 | 108.88 | 412.10 |
| 1 | CR4T010 | 33.590 | 127.14 | 66.764 | 252.70 |
| 1-1/4 | CR4T012 | 16.357 | 61.910 | 33.849 | 128.12 |
| 1-1/2 | CR4T015 | 10.676 | 40.410 | 20.428 | 77.320 |
| 2 | CR4T020 | 5.8917 | 22.300 | 12.095 | 45.780 |
| **GALVANIZED IRON TEES ON SCH 40 PIPE** | | | | | |
| 1 | IR4T010 | 27.619 | 104.54 | 56.277 | 213.01 |
| 1-1/4 | IR4T012 | 16.639 | 62.979 | 33.751 | 127.75 |
| 1 1/2 | IR4T015 | 12.335 | 46.688 | 24.941 | 94.401 |
| 2 | IR4T020 | 7.7832 | 29.459 | 15.699 | 59.420 |
| **BRONZE TEES ON SCH 40 PIPE** | | | | | |
| 1 | BR4T010 | 27.619 | 104.54 | 56.277 | 213.01 |
| 1-1/4 | BR4T012 | 16.639 | 62.979 | 33.751 | 127.75 |
| 1-1/2 | BR4T015 | 12.335 | 46.688 | 24.941 | 94.401 |
| 2 | BR4T020 | 7.7832 | 29.459 | 15.699 | 59.420 |
| **COPPER TEE FITTINGS ON COPPER PIPE SCH K** | | | | | |
| 1/2 | CUKT005 | 117.10 | 443.21 | 242.50 | 917.84 |
| 3/4 | CUKT007 | 56.052 | 212.16 | 113.15 | 428.27 |
| 1 | CUKT010 | 33.600 | 127.18 | 67.749 | 256.43 |
| 1-1/4 | CUKT012 | 23.307 | 88.218 | 46.615 | 176.44 |
| 1-1/2 | CUKT015 | 15.049 | 56.962 | 30.565 | 115.69 |
| 2 | CUKT020 | 7.7595 | 29.370 | 16.746 | 63.385 |
| **COPPER TEE FITTINGS ON COPPER PIPE SCH L** | | | | | |
| 1/2 | CUKT005 | 109.49 | 414.41 | 226.74 | 858.22 |
| 3/4 | CUKT007 | 50.485 | 191.09 | 101.91 | 385.74 |
| 1 | CUKT010 | 31.662 | 119.84 | 63.841 | 241.64 |
| 1-1/4 | CUKT012 | 22.576 | 85.451 | 45.152 | 170.90 |
| 1-1/2 | CUKT015 | 14.573 | 55.160 | 29.598 | 112.03 |
| 2 | CUKT020 | 7.5575 | 28.605 | 16.310 | 61.74 |

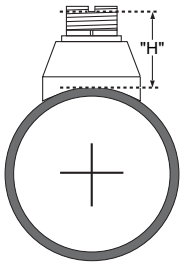
| PIPE SIZE (IN.) | FITTING | 515/8510-XX | | 2536/8512-XX | |
|---|---|---|---|---|---|
| | | LITERS | U.S. GAL | LITERS | U.S. GAL |
| **STAINLESS STEEL WELDOLETS ON SCH 40 PIPE** | | | | | |
| 2-1/2 | CR4W025 | 4.9670 | 18.800 | 9.9339 | 37.600 |
| 3 | CR4W030 | 3.2153 | 12.170 | 6.4306 | 24.340 |
| 4 | CR4W040 | 1.8388 | 6.9600 | 3.6777 | 13.920 |
| 5 | CR4W050 | 1.3897 | 5.2600 | 2.8692 | 10.860 |
| 6 | CR4W060 | 0.9749 | 3.6900 | 1.9868 | 7.5200 |
| 8 | CR4W080 | 0.5627 | 2.1300 | 1.1466 | 4.3400 |
| 10 | CR4W100 | 0.3567 | 1.3500 | 0.7292 | 2.7600 |
| 12 | CR4W120 | 0.2536 | 0.9600 | 0.5125 | 1.9400 |
| **CARBON STEEL WELDOLETS ON SCH 40 PIPE** | | | | | |
| 2-1/2 | CS4W025 | 4.9670 | 18.800 | 9.9339 | 37.600 |
| 3 | CS4W030 | 3.2153 | 12.170 | 6.4306 | 24.340 |
| 4 | CS4W040 | 1.8388 | 6.9600 | 3.6777 | 13.920 |
| 5 | CS4W050 | 1.3897 | 5.2600 | 2.8692 | 10.860 |
| 6 | CS4W060 | 0.9749 | 3.6900 | 1.9868 | 7.5200 |
| 8 | CS4W080 | 0.5627 | 2.1300 | 1.1466 | 4.3400 |
| 10 | CS4W100 | 0.3567 | 1.3500 | 0.7292 | 2.7600 |
| 12 | CS4W120 | 0.2536 | 0.9600 | 0.5125 | 1.9400 |
| **COPPER/BRONZE BRAZOLETS ON SCH 40 PIPE** | | | | | |
| 2-1/2 | BR4B025 | 4.9670 | 18.800 | 9.934 | 37.600 |
| 3 | BR4B030 | 3.2153 | 12.170 | 6.431 | 24.340 |
| 4 | BR4B040 | 1.8388 | 6.9600 | 3.678 | 13.920 |
| 5 | BR4B050 | 1.3897 | 5.2600 | 2.869 | 10.860 |
| 6 | BR4B060 | 0.9749 | 3.6900 | 1.987 | 7.5200 |
| 8 | BR4B080 | 0.5627 | 2.1300 | 1.147 | 4.3400 |
| 10 | BR4B100 | 0.3567 | 1.3500 | 0.729 | 2.7600 |
| 12 | BR4B120 | 0.2536 | 0.9600 | 0.513 | 1.9400 |
| **SCH 80 IRON SADDLES ON SCH 80 PIPE** | | | | | |
| 2 | IR8S020 | 8.5495 | 32.360 | 17.099 | 64.720 |
| 2-1/2 | IR8S025 | 5.8705 | 22.220 | 11.223 | 42.480 |
| 3 | IR8S030 | 3.5456 | 13.420 | 6.980 | 26.420 |
| 4 | IR8S040 | 2.0238 | 7.6600 | 3.884 | 14.700 |
| 5 | IR8S050 | 1.5482 | 5.8600 | 3.218 | 12.180 |
| 6 | IR8S060 | 1.0806 | 4.0900 | 2.230 | 8.4400 |
| 8 | IR8S080 | 0.6156 | 2.3300 | 1.295 | 4.9000 |
| 10 | IR8S100 | 0.4042 | 1.5300 | 0.808 | 3.0600 |
| 12 | IR8S120 | 0.2801 | 1.0600 | 0.571 | 2.1600 |
| **SCH 80 IRON SADDLE ON SCH 40 PIPE** | | | | | |
| 2 | IR8S020 | 7.0859 | 26.820 | 14.172 | 53.640 |
| 2-1/2 | IR8S025 | 4.9670 | 18.800 | 9.934 | 37.600 |
| 3 | IR8S030 | 3.1678 | 11.990 | 6.135 | 23.220 |
| 4 | IR8S040 | 1.8098 | 6.8500 | 3.503 | 13.260 |
| 5 | IR8S050 | 1.4082 | 5.3300 | 2.917 | 11.040 |
| 6 | IR8S060 | 0.9934 | 3.7600 | 1.913 | 7.2400 |
| 8 | IR8S080 | 0.5627 | 2.1300 | 1.162 | 4.4000 |
| 10 | IR8S100 | 0.3567 | 1.3500 | 0.740 | 2.8000 |
| 12 | IR8S120 | 0.2536 | 0.9600 | 0.523 | 1.9800 |

## K-Factors DIN Pipes

| PIPE SIZE | FITTING | 515/8510-XX | | 2536/8512-XX | |
|---|---|---|---|---|---|
| | | LITERS | U.S. GAL | LITERS | U.S. GAL |
| **POLYPROPYLENE FITTINGS (DIN/ISO AND BS AND ANSI)** | | | | | |
| DN 15 | PPMT005 | 127.23 | 481.55 | 251.75 | 952.87 |
| DN 20 | PPMT007 | 73.207 | 277.09 | 148.77 | 563.10 |
| DN 25 | PPMT010 | 37.300 | 141.18 | 77.042 | 291.60 |
| DN 32 | PPMT012 | 22.071 | 83.540 | 44.709 | 169.22 |
| DN 40 | PPMT015 | 13.544 | 51.265 | 27.450 | 103.90 |
| DN 50 | PPMT020 | 7.8193 | 29.596 | 16.060 | 60.789 |
| **PVDF FITTINGS (DIN/ISO AND BS AND ANSI)** | | | | | |
| DN 15 | SFMT005 | 111.19 | 420.87 | 218.56 | 827.26 |
| DN 20 | SFMT007 | 60.277 | 228.15 | 129.42 | 489.87 |
| DN 25 | SFMT010 | 36.116 | 136.70 | 74.915 | 283.55 |
| DN 32 | SFMT012 | 20.950 | 79.294 | 41.899 | 158.59 |
| DN 40 | SFMT015 | 11.490 | 43.490 | 22.980 | 86.980 |
| DN 50 | SFMT020 | 6.8450 | 25.908 | 13.312 | 50.385 |
| **PVC FITTINGS (DIN/ISO) - EUROPE ONLY** | | | | | |
| DN 15 | PVMT005 | 128.45 | 486.18 | 256.90 | 972.37 |
| DN 20 | PVMT007 | 64.160 | 242.85 | 128.32 | 485.69 |
| DN 25 | PVMT010 | 39.270 | 148.64 | 78.540 | 297.274 |
| DN 32 | PVMT012 | 22.490 | 85.125 | 44.980 | 170.249 |
| DN 40 | PVMT015 | 13.700 | 51.855 | 27.400 | 103.709 |
| DN 50 | PVMT020 | 7.8600 | 29.750 | 15.720 | 59.500 |

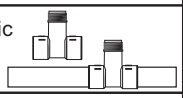
## 8. H-Dimensions

The plastic sensor insert in the Weldolet fitting MUST be removed during the welding process. When reinstalled, it is important that the insert be threaded to the proper height ("H" dimension).




| Weldolet | "H" dimension | | Weldolet | "H" dimension | |
|---|---|---|---|---|---|
| part number | mm | inches | part number | mm | inches |
| CS4W020 | 60.45 | 2.38 | CS4W240 | 105.66 | 4.16 |
| CS4W025 | 62.99 | 2.48 | CS4W360 | 104.14 | 4.10 |
| CS4W030 | 62.73 | 2.47 | | | |
| CS4W040 | 62.23 | 2.45 | CR4W020 | 60.45 | 2.38 |
| CS4W050 | 82.29 | 3.24 | CR4W025 | 62.99 | 2.48 |
| CS4W060 | 78.99 | 3.11 | CR4W030 | 62.73 | 2.47 |
| CS4W080 | 73.15 | 2.88 | CR4W040 | 62.23 | 2.45 |
| CS4W100 | 143.00 | 5.63 | CR4W050 | 82.29 | 3.24 |
| CS4W120 | 137.16 | 5.25 | CR4W060 | 78.99 | 3.11 |
| CS4W140 | 129.54 | 5.40 | CS4W080 | 73.15 | 2.88 |
| CS4W160 | 123.19 | 4.85 | CR4W100 | 143.00 | 5.63 |
| CS4W180 | 116.84 | 4.60 | CR4W120 | 137.16 | 5.40 |
| CS4W200 | 111.25 | 4.38 | | | |

## 9. Signet Fittings

| Type | Description |
|---|---|
| Plastic tees  | • 0.5 to 2 inch versions<br>• MPVC or CPVC |
| PVC Glue-on Saddles | • Available in 10 and 12 inch sizes only<br>• Cut 2-1/2 inch hole in pipe<br>• Weld in place using solvent cement |
| PVC Clamp-on Saddles | • 2 to 4 inch, cut 1-7/16 inch hole in pipe<br>• 6 to 8 inch, cut 2-1/8 inch hole in pipe |
| Iron Strap-on saddles | • 2 to 4 inch, cut 1-7/16 inch hole in pipe<br>• Over 4 inch, cut 2-1/8 inch hole in pipe<br>• Special order 14 in. to 36 in. |

| Type | Description |
|---|---|
| Iron, Carbon Steel, 316 SS Threaded tees | • 0.5 to 2 in. versions<br>• Mounts on threaded pipe ends |
| Carbon steel & stainless steel Weld-on Weldolets | • 2 to 4 inch, cut 1-7/16 inch hole<br>• Over 4 inch, cut 2-1/8 inch hole in pipe |
| Fiberglass tees FPT | • 1.5 in. to 2 in. PVDF insert |
| Metric Union Fitting | • For pipes from DN 15 to 50 mm<br>• PP or PVDF |

## 10. Chemical Compatibility

Georg Fischer Signet products are manufactured in a variety of wetted materials to suit various liquids and chemicals.

All plastic materials including typical piping types (PVC, PVDF, PP and PE) are more or less permeable to contained media, such as water or volatile substances, including some acids. This effect is not related to porosity, but purely a matter of gas diffusion through the plastic.

If the plastic material is compatible with the medium according to the application guidelines, the permeation will not damage the plastic itself. However, if the plastic encloses other sensitive components, as is the case with GF Signet plastic paddlewheel sensors, these may be affected or damaged by the media diffusing through the plastic body and rotor.

Failures of PVDF paddlewheel sensors when used in hot nitric acid applications have been reported. PVDF is known to allow for substantial permeation of nitric acid constituents without being damaged itself. No clear guideline can be given here, since the damaging effect to the sensor is highly dependent on temperature, pressure and concentration.

Utilizing sensors in applications with aggressive substances is possible. On special request GF Signet can provide sensors with a different internal resin encapsulation (potting) that will delay the damaging effect of acids to the sensors.

For all Special Product inquiries or to place an order, please email **signet-specialproduct@georgfischer.com.**

**WARNING!**

The retaining nuts of paddlewheel sensors are not designed for prolonged contact with aggressive substances. Strong acids, caustic substances and solvents or their vapor may lead to failure of the retaining nut, ejection of the sensor and loss of the process fluid with possibly serious consequences, such as damage to equipment and serious personal injury. Retaining nuts that may have been in contact with such substances, e.g. due to leakage or spilling, must be replaced.

# 515/8510-XX
## Ordering Information

| Part No. | Code | Product Description |
|---|---|---|
| P51530-H0 | 198 801 659 | Sensor, Polypropylene, Hastelloy-C, Black PVDF; 0.5 to 4 inch |
| P51530-P0 | 198 801 620 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black), 0.5 to 4 inch |
| P51530-P1 | 198 801 621 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| P51530-P2 | 198 801 622 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 10 to 36 inch |
| P51530-P3 | 198 840 310 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black), 0.5 to 4 inch |
| P51530-P4 | 198 840 311 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| P51530-P5 | 198 840 312 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 10 to 36 inch |
| P51530-S0 | 198 801 661 | Sensor, polypropylene, PVDF (natural), Black PVDF; 0.5 to 4 inch |
| P51530-T0 | 198 801 663 | Sensor, PVDF (natural), PVDF (nat.) Rotor Pin, PVDF Rotor (nat.), 0.5 to 4 inch |
| P51530-T1 | 198 801 664 | Sensor, PVDF (natural), PVDF (nat.) Rotor Pin, PVDF Rotor (nat.), 5 to 8 inch |
| P51530-V0 | 198 801 623 | Sensor, PVDF (natural), Hastelloy-C Rotor Pin, PVDF Rotor (natural), 0.5 to 4 inch |
| P51530-V1 | 198 801 624 | Sensor, PVDF (natural), Hastelloy-C Rotor Pin, PVDF Rotor (natural), 5 to 8 inch |
| P51530-V2 | 198 801 625 | Sensor, PVDF (natural), Hastelloy-C Rotor Pin, PVDF Rotor (natural), 10 to 36 inch |
| P51550-3 | 198 820 043 | Rotor and pin, PVDF Natural |
| 3-8510-P0 | 198 864 504 | Sensor, Integral, PP, Titanium Rotor Pin, PVDF Rotor (black), 0.5 to 4 inch |
| 3-8510-P1 | 198 864 505 | Sensor, Integral, PP, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| 3-8510-T0 | 159 000 622 | Sensor, Integral, PVDF (nat.), PVDF (nat.) Rotor Pin, PVDF Rotor (nat.), 0.5 to 4 inch |
| 3-8510-V0 | 198 864 506 | Sensor, Integral, PVDF (nat.), Hastelloy-C Rotor Pin, PVDF Rotor (nat.), 0.5 to 4 inch |
| 3-3519/515-P3 | 159 000 819 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), 0.5 to 4 inch |
| 3-3519/515-P4 | 159 000 820 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), 5 to 8 inch |
| 3-3519/515-P5 | 159 000 821 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), 10 to 36 inch |
| **Accessories** | | |
| M1538-2 | 198 801 181 | Rotor, PVDF Black |
| P51547-3 | 159 000 474 | Rotor, PVDF Natural |
| M1538-4 | 198 820 018 | Rotor, ETFE |
| P51550-3 | 198 820 043 | Rotor and Pin, PVDF Natural |
| 3-0515.322-1 | 198 820 059 | Sleeved Rotor, PVDF Black |
| 3-0515.322-2 | 198 820 060 | Sleeved Rotor, PVDF Natural |
| 3-0515.322-3 | 198 820 017 | Sleeved Rotor, ETFE |
| M1546-1 | 198 801 182 | Rotor Pin, Titanium |
| M1546-2 | 198 801 183 | Rotor Pin, Hastelloy-C |
| M1546-3 | 198 820 014 | Rotor Pin, Tantalum |
| M1546-4 | 198 820 015 | Rotor Pin, Stainless Steel |
| P51545 | 198 820 016 | Rotor Pin, Ceramic |
| 1220-0021 | 198 801 186 | O-Ring, FPM |
| 1224-0021 | 198 820 006 | O-Ring, EPDM |
| 1228-0021 | 198 820 007 | O-Ring, FFKM |
| P31536 | 198 840 201 | Sensor Plug, Polypropylene |
| P31542 | 198 801 630 | Sensor Cap, Red (for use with 515) |
| P31934 | 159 000 466 | Conduit Cap |
| P51589 | 159 000 476 | Conduit Adapter Kit |
| 5523-0222 | 159 000 392 | Cable (per foot), 2 conductor with shield, 22 AWG |
| 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® |
| 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 |
| 3-8051 | 159 000 187 | Transmitter integral adapter (for 8510 and 8512) |

# 2536/8512-XX
## Ordering Information

| Part No. | Code | Product Description |
|---|---|---|
| 3-2536-P0 | 198 840 143 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black), ½ to 4 inch |
| 3-2536-P1 | 198 840 144 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| 3-2536-P2 | 198 840 145 | Sensor, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 10 to 36 inch |
| 3-2536-P3 | 159 000 758 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black), ½ to 4 inch |
| 3-2536-P4 | 159 000 759 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| 3-2536-P5 | 159 000 760 | Sensor, Wet-Tap, Polypropylene, Titanium Rotor Pin, PVDF Rotor (black) 10 to 36 inch |
| 3-2536-V0 | 198 840 146 | Sensor, PVDF (natural), Hastelloy-C Rotor Pin, PVDF Rotor (natural), ½ to 4 inch |
| 3-2536-V1 | 198 840 147 | Sensor, PVDF (natural), Hastelloy-C Rotor Pin, PVDF Rotor (natural), 5 to 8 inch |
| 3-2536-T0 | 198 840 149 | Sensor, PVDF (natural), PVDF (nat.) Rotor Pin, PVDF Rotor (natural), ½ to 4 inch |
| 3-8512-P0 | 198 864 513 | Sensor, Integral, PP, Titanium Rotor Pin, PVDF Rotor (black), ½ to 4 inch |
| 3-8512-P1 | 198 864 514 | Sensor, Integral, PP, Titanium Rotor Pin, PVDF Rotor (black) 5 to 8 inch |
| 3-8512-T0 | 198 864 518 | Sensor, Integral, PVDF (nat.), PVDF (nat.) Rotor Pin, PVDF Rotor (nat.), ½ to 4 inch |
| 3-8512-V0 | 198 864 516 | Sensor, Integral, PVDF (nat.), Hastelloy-C Rotor Pin, PVDF Rotor (nat.), ½ to 4 inch |
| 3-3519/2536-P3 | 159 000 822 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), ½ to 4 inch |
| 3-3519/2536-P4 | 159 000 823 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), 5 to 8 inch |
| 3-3519/2536-P5 | 159 000 824 | Sensor & Wet-Tap Assy., PP, Titanium Rotor Pin, PVDF Rotor (black), 10 to 36 inch |

**Accessories**

| | | |
|---|---|---|
| 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 |
| 3-2536.321 | 198 820 054 | Rotor and Pin, PVDF Natural |
| 3-2536.322-1 | 198 820 056 | Sleeved Rotor, PVDF Black |
| 3-2536.322-2 | 198 820 057 | Sleeved Rotor, PVDF Natural |
| 3-2536.322-3 | 198 820 058 | Sleeved Rotor, ETFE |
| M1546-1 | 198 801 182 | Rotor Pin, Titanium |
| M1546-2 | 198 801 183 | Rotor Pin, Hastelloy-C |
| M1546-3 | 198 820 014 | Rotor Pin, Tantalum |
| M1546-4 | 198 820 015 | Rotor Pin, Stainless Steel |
| P51545 | 198 820 016 | Rotor Pin, Ceramic |
| 1220-0021 | 198 801 186 | O-Ring, FPM |
| 1224-0021 | 198 820 006 | O-Ring, EPDM |
| 1228-0021 | 198 820 007 | O-Ring, FFKM |
| P31536 | 198 840 201 | Sensor Plug, Polypropylene |
| P31542-3 | 159 000 464 | Sensor Cap, Blue (for use with 2536) |
| P31934 | 159 000 466 | Conduit Cap |
| P51589 | 159 000 476 | Conduit Adapter Kit |
| 5523-0222 | 159 000 392 | Cable (per foot), 2 conductor with shield, 22 AWG |
| 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® |
| 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 |
| 3-8051 | 159 000 187 | Transmitter integral adapter (for 8510 and 8512) |

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3-0515.090 Rev. S 10/12 English

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