



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
- FM approved
- Operating range 0.5 to 6 m/s (1.6 to 20 ft/s)



Applications

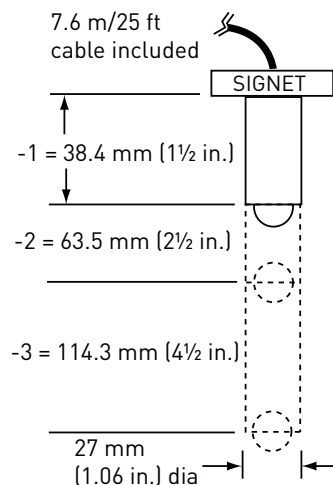
- Boiler Feedwater Monitoring
- HVAC
- Chemical Transport
- Heat Exchangers
- Reverse Osmosis
- Cooling Systems
- Not Suitable for Gases

Specifications

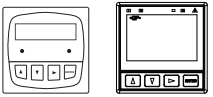


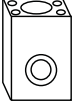
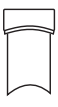
| General | | |
|--|--|----------------|
| Operating Range | 0.5 to 6 m/s | 1.6 to 20 ft/s |
| Pipe Size Range | DN15 to DN300 | ½ to 12 in. |
| Linearity | ±1% of max. range @ 25 °C [77 °F] | |
| Repeatability | ±0.5% of max. range @ 25 °C [77 °F] | |
| Min. Reynolds Number Required | 4500 | |
| Wetted Materials | | |
| Sensor Body | 316 SS (ACI type CF-8M per ASTM A351), DIN 17440 | |
| Rotor Material | CB7Cu-1 Alloy | |
| 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 | 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 |
| P525-3/-3S | 0.923 kg | 2.0 lb |
| Standards and Approvals | | |
| FM Class I (Group A, B, C, D), II (Group E,F,G), III, Division 1 (Groups A-G) | | |
| RoHS compliant | | |
| China RoHS | | |
| Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management | | |

See Temperature and Pressure graphs for more information.

Dimensions



System Overview

| Panel Mount | | | Field Mount - Pipe, Tank, Wall | | |
|--|--|---|--|---------------------|--|
| Signet Instruments 5075 5090 5500 5600 8150 8550 8900 9900 | | | Signet Instruments 8150 8550 9900 with 3-8050 Universal Mount Kit | | |
|  | | |  | | |
| 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).
- The 525 can be used in intrinsically safe areas using an approved barrier between the sensor and instrument.

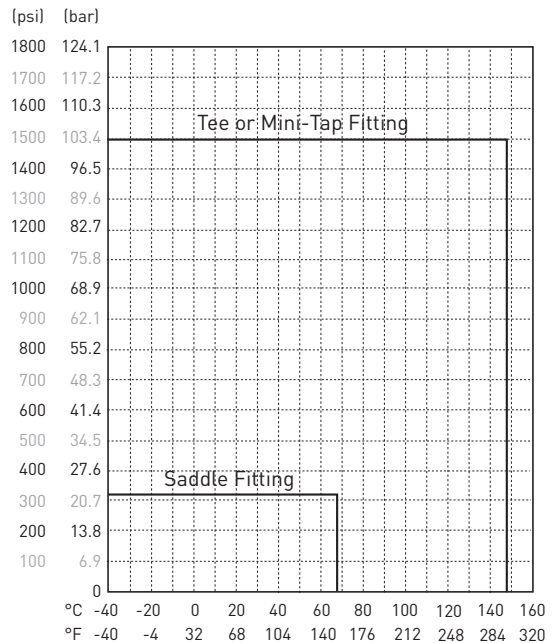
Model 525 Ordering Notes

- 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.

Operating Temperature/Pressure Graphs

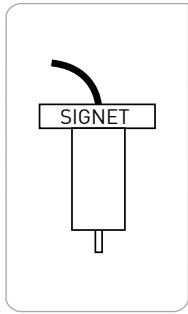
Note:

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 |
| P525-3 | 198 801 496 | used with 2 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 |
| P525-3S | 159 000 965 | used with 2 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 |
| 6402-9001 | 159 001 486 | Intrinsic safety barrier (2 required) |