

+GF+ SIGNET 2100 Turbine Sensor



Features

- True union piping and tubing connections with removable electronics for simple installation
- All mounting angles acceptable for easy installation
- Minimal up and downstream lengths provides installation flexibility in piping and tubing systems
- PVDF and ceramic wetted parts provide superior chemical compatibility
- Two flow range options for specific application needs
- Outstanding accuracy for precise dosing applications.

Description

Engineered specifically for use in low flow, small dimension applications, the +GF+ SIGNET 2100 Turbine Flow Sensor provides accurate readings in two flow ranges, 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. True union piping and tubing connections along with removable NEMA 4X electronics allow for easy assembly and field replaceability.

The 2100 can be used with 1/4", 3/8" or 1/2" tubing, or 1/2" piping for installation flexibility. End connections are available in PVDF for hose barbs, fusion socket, and IR/butt fusion, and in PVC for socket and

NPT thread. Ideal for clear and opaque fluids, the 2100 offers a process ready open collector signal and is compatible with all +GF+ SIGNET flow instrumentation.

Installation

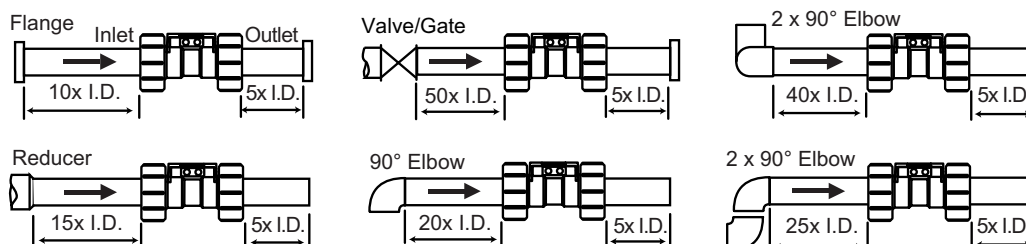
1. Install sensor with arrow pointing in the direction of flow. All mounting angles acceptable.
 2. Slide union nut onto pipe or flexible tubing.
 3. Install end connectors.
 4. Hand tighten union nut to secure.
- Suitable for clear or opaque fluids. Suspended solids may cause mechanical failure.
 - Upstream/downstream mounting requirements:

Compatibility

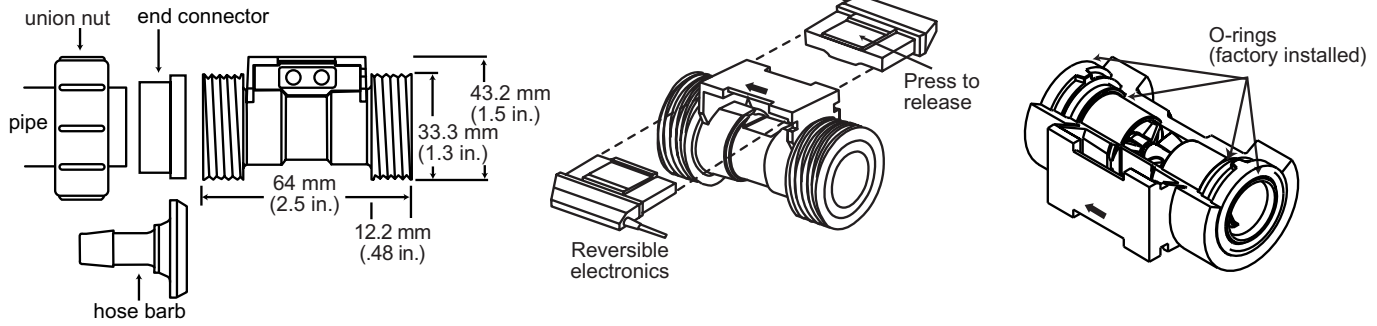
All +GF+ SIGNET flow instrumentation

Applications

Chemical addition
Textile
Clinical/laboratory
High purity
Plating
Dosing liquid fertilizer
Water fertigation

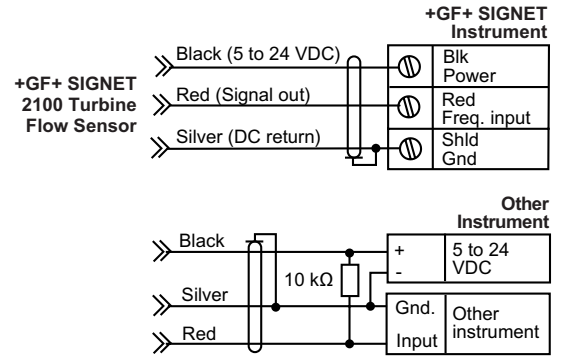


Installation (cont.)



Sensor Wiring

- Use 2-conductor twisted-pair shielded cable (Belden #8451 or equivalent) for sensor cable splices up to 300 m (1000 ft) max.
- Maintain cable shield through cable splice.
- Route sensor cable away from AC power lines.
- Use the 2535/2536 input card setting for +GF+ SIGNET Intelk-Pro controllers.



Calibration (Conversion formula: 1 U.S. gallon = 0.83267 Imperial gallon)

Sensor Model	Connection Option	K-Factors: Pulses/U.S. Gallon	Pulses/Liter
High Flow Sensors 3-2100-1H, 2H	1/2" Pipe	1725	456
	1/2" Hose	1700	449
Low Flow Sensors 3-2100-1L, 2L	1/2" Pipe	12250	3236
	1/4" Hose	12800	3382
	3/8" Hose	13000	3435
	1/2" Hose	12500	3303

Specifications

General

Flow range:	-L = 0.38 to 3.8 l/m (0.1 to 1 gpm) -H = 3 to 38 l/m (0.8 to 10 gpm)
Pipe size:	DN 15 (1/2")
Hose size:	1/2", 3/8", 1/4"
Accuracy:	±3% of reading
Repeatability:	±0.5% of reading
Weight:	151 g (0.33 lbs)

Materials

Sensor body/rotor:	PVDF
Shaft/bearings:	Ceramic
O-rings:	-1 = FPM, -2 = EPDM
Electronics box:	PBT overmolded EVA
Cable type:	PVC jacketed, 2 conductor twisted pair with shield (22 AWG)
Cable length:	4.6 m (15 ft.)

Electrical

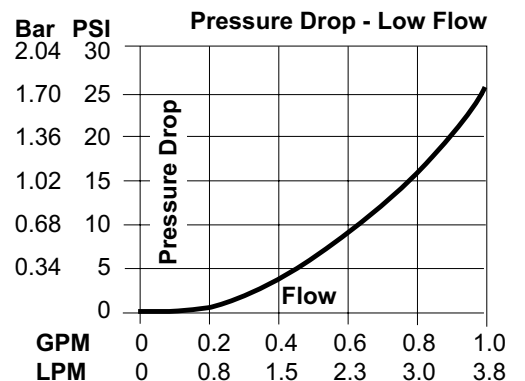
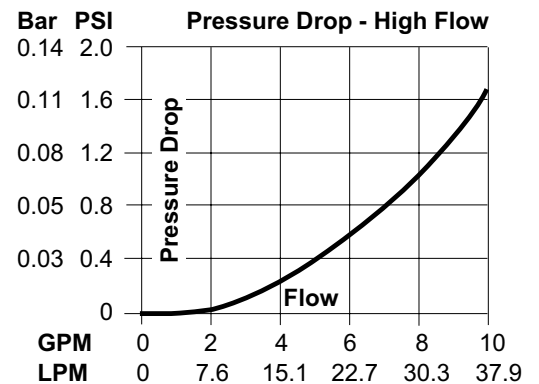
Power:	5 to 24 VDC @ 1.0 mA max.
Output:	Open collector, sinking, max 30 mA
Reverse polarity protected	

Standards and Approvals

CE, Manufactured under ISO 9001

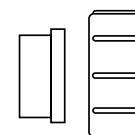
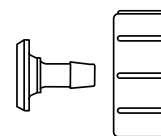
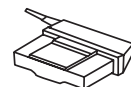
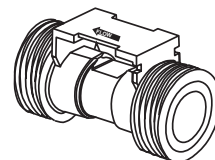
Environmental

Maximum Operating Pressure/Temperature: 16 bar @ 20°C max. (232 psi @ 68°F)
Operating Temperature: 0 to 70°C (32 - 160°F)



Parts and Accessories

	Part No.	GF Part No.	Description
Turbine Body:	3-2100-1L	159.000.001	Turbine Lo Flow PVDF/FPM
	3-2100-1H	159.000.002	Turbine Hi Flow PVDF/FPM
	3-2100-2L	159.000.003	Turbine Lo Flow PVDF/EPDM
	3-2100-2H	159.000.004	Turbine Hi Flow PVDF/EPDM
Electronics:	3-2100.390	159.000.014	Electronics Box
O-rings:	1220-0018	159.000.019	O-rings (2 required) FPM
	1224-0018	159.000.020	O-rings (2 required) EPDM
Connector Kits:	3-2100-31	159.000.005	Hose Barb Kit, PVDF 1/2"
	3-2100-32	159.000.006	Hose Barb Kit, PVDF 3/8"
	3-2100-33	159.000.007	Hose Barb Kit, PVDF 1/4"
	3-2100-34	159.000.008	Fusion Socket Kit, PVDF DN 15
	3-2100-35	159.000.009	Butt Fusion/IR Kit, PVDF DN 15
	3-2100-36	159.000.010	Metric Socket Kit, PVC DN 15
	3-2100-37	159.000.011	SCH80 Socket Kit, PVC 1/2"
	3-2100-38	159.000.012	NPT Thread Socket Kit, PVC 1/2"
Replacement Body	3-2100.390-1L	159.000.015	Replacement Turbine LoFlow /FPM O-rings
	3-2100.390-1H	159.000.016	Replacement Turbine HiFlow /FPM O-rings
	3-2100.390-2L	159.000.017	Replacement Turbine LoFlow /EPDM O-rings
	3-2100.390-2H	159.000.018	Replacement Turbine HiFlow /EPDM O-rings



Engineering Specifications for the +GF+ SIGNET 2100 Turbine Flow Sensor

- The flow sensor shall use a turbine-type flow-sensing technology.
- The sensor shall be compatible with clean process liquids regardless of fluid color.
- The sensor shall operate with a power input of 5 to 24 VDC @ 1.0 mA max.
- The sensor shall provide an output signal via an open collector NPN transistor sinking a maximum of 30mA.
- Output shall be via a twisted pair, foil-shielded cable with drain wire. Supplied cable shall be at least 4.6 m (15ft) long, with a maximum allowable length of 300 m (1000 ft).
- Linearity of the output signal with respect to flow rate shall be +/- 3% of reading.
- Measurement repeatability shall be +/- 0.5% of reading.
- The sensor shall be available in versions that accommodate nominal flow rates from 0.1 to 10 GPM.
- The sensor body shall be made of PVDF that shall accommodate up to 16 bar @ 20°C (232 psi @ 68°F)
- The sensor rotor shall be made of PVDF.
- The sensor bearings and shaft shall be made of ceramic.
- The sensor shall provide 1/2" true union end connections for attachment to a rigid pipe, or 1/4", 3/8", or 1/2" hose barb connections for attachment to flexible tubing.
- The sensor shall meet appropriate CE standards.
- The flow sensor shall be +GF+ SIGNET, Model 2100 Turbine Flow Sensor.

+GF+ SIGNET

Signet Scientific Company, 3401 Aerojet Avenue, El Monte, CA 91731-2882 U.S.A. • Tel. (626) 571-2770 • Fax (626) 573-2057
 For Worldwide Sales and Service, visit our website: www.gfsignet.com • Or call (in the U.S.): (800) 854-4090

