IR-Opflow PVDF Precision Flowmeters

Corrosion resistant flow sensor

Manufactured in PVDF (polyvinylidene fluoride) the IR-Opflow Sensor is a precise volumetric flow meter.

Incoming liquid is forced into a twisting motion by spiral surfaces molded into the inflow section. This causes a miniature rotor to turn, virtually friction free. Each time the rotor spins, the blade interrupts a beam of infrared light generating a series of pulses that can be measured.

The precision of the IR-Opflow is not influenced by either the pressure or volume variations.
The patented rotor design prevents air or gas bubbles from becoming trapped in the flowtube, making the IR-Opflow flowsensor not only rugged but extremely accurate.

Typical features:

- Manufactured in PVDF (polyvinylidene fluoride)
- Measuring range: 0.1-120 l/min. through six sizes
- Threaded or Hose Barb connections
- Accuracy: ±1% or ±3% of measured value
- Repeatability: ±0.1% of measured value
- Square wave Vdc frequency output
- Patented design and lightweight rotor minimizes wear, provides friction free rotational movement
- Mountable in any position

Specifications:

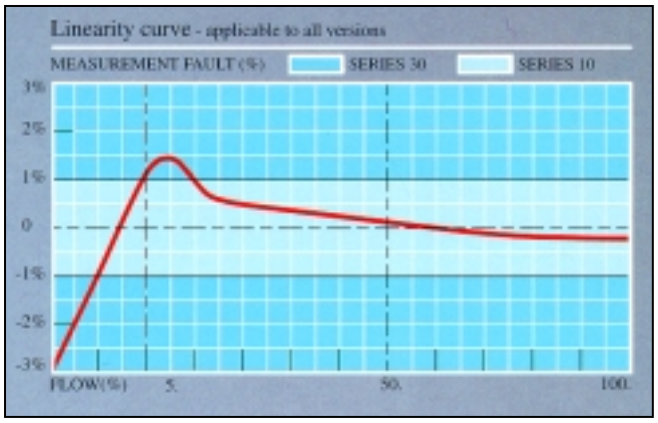
Type	Flow range lpm	(gpm)	K-factor<5cSt pulses/l	Output Hz
1	0.1-2.0	(0.03-0.53)	36,000	60-1200
2	0.3-9.0	(0.08-2.38)	8,000	40-1200
3	0.5-15.0	(0.13-3.96)	3,200	26.66-800
4	1.0-30.0	(0.26-7.93)	1,200	20-600
5	2.5-75.0	(0.66-19.8)	450	18.75-562
6	4.0-120.0	(1.06-32.0)	225	15-450

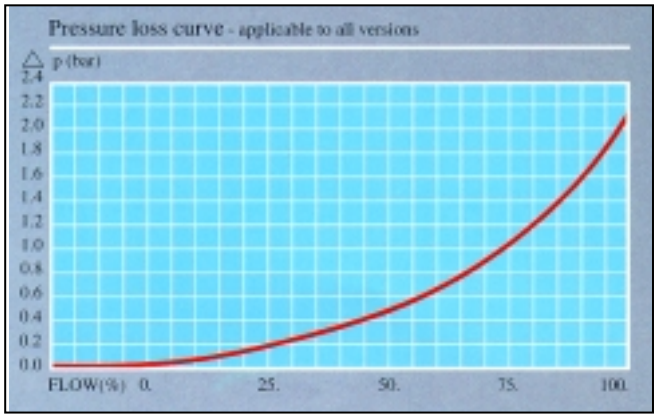
Technical Specifications:

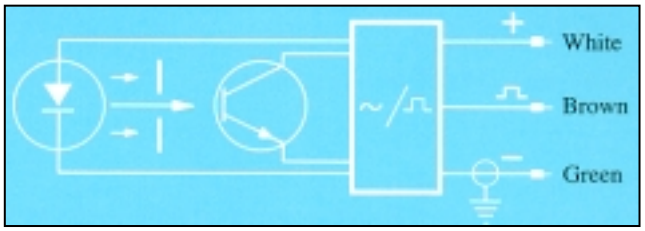
Accuracy:	10 Series ±1% of meas. value 30 Series ±3% of meas. value
Repeatability	±0.1% of measured value
Flow range:	See specifications
Temperature range:	-40 to 85˚C (-40° to 185° F)
Maximum pressure:	150 psi
Process connection:	NPT, BSP or flexible hose fitting, see table 1 and 2
Materials:	All wetted parts PVDF

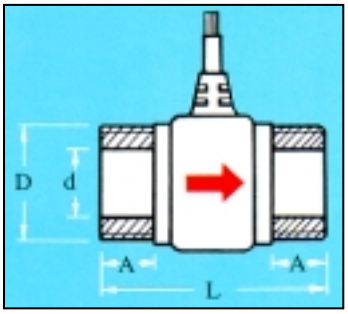
Electrical Specifications:

Power supply:	5 - 12 Vdc, 6 - 24 mA 8 - 24 Vdc, 18 - 30 mA
Pulse output:	Push-Pull
Max. load:	2k2 Ohm
Frequency:	15-1,200 Hz , see specifications
Signal cable:	3 feet, other lengths on request
Signal source:	Opto-electronic (infrared)









Optional cartridge model features

- Turbine meter accuracy with convenience of non-intrusive unit for cleaning
- Rotor assembly removable for cleaning or replacement of flow tube
- Patented design with ±1% or ±3% accuracy
- Accuracy guaranteed when replacing cartridge
- Electronics unaffected by replacement

Cartridge specifications:

Accuracy:	10 Series ±1% of meas. value 30 Series ±3% of meas. value
Repeatability:	±0.1% of measured value
Flow range:	Type 1, 2 and 3
Temperature range:	-40 to 85°C (-40 to 185°F)
Maximum pressure:	150 psi
Process connection:	Flexible hose fitting, (o.d. 9mm)
Materials:	All wetted parts are PVDF

Electrical specifications:

Power supply:	5 - 12 Vdc, 6 - 24 mA
Pulse output:	Push-Pull
Max. load:	2k2 ohms
Frequency:	26.66 - 1,200 H z, see specifications

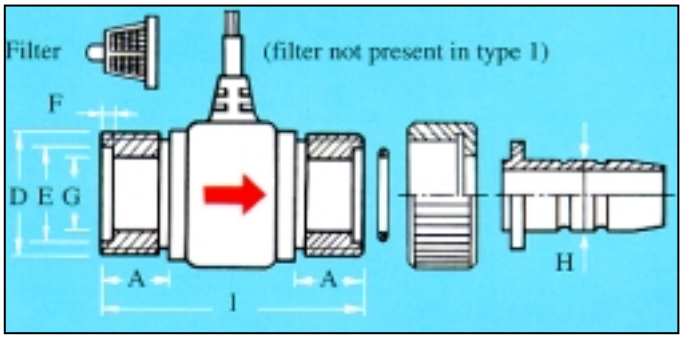


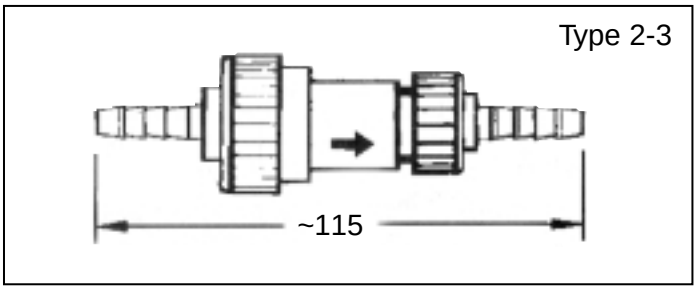
Table 1

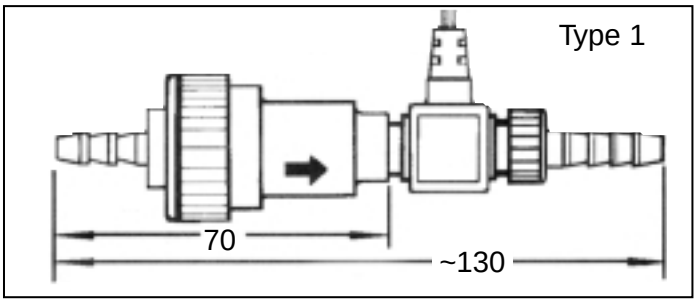
NPT or BSP	Dimensions (mm)			
Type	A	D	d	L
1	9.5	1/4"	6.5	39
2	12.7	1/2"	13.0	47
3	12.7	1/2"	13.0	47
4	18.5	3/4"	17.0	63
5	24.5	1 1/4"	29.0	80
6	24.5	1 1/4"	29.0	80

Table 2

Flexible hose fittings	Dimensions (mm)							
Type	A	D	E	F	G	H	I	Tot L.
1	9.0	M12x1.5	8.7	1.5	6.5	6.9	39	96
2	12.0	M20x2	16.0	1.8	12.0	9.0	43	112
3	12.0	M20x2	16.0	1.8	12.0	12.0	43	116
4	16.0	M27x2	21.0	2.3	16.0	16.0	57	136
5	16.5	BSP 1”pl.	29.4	1.6	24.5	19.5	80	182
6	16.5	BSP 1”pl.	29.4	1.6	24.5	24.5	80	183

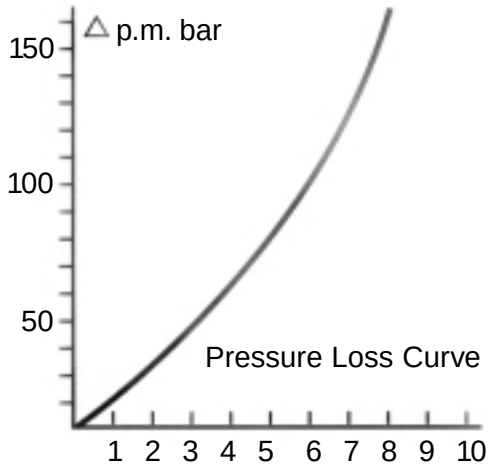
IR-Opflow Filters





Technical specifications:

Connections: Filter 1	(A) M12 x 1.5 F (fits flowmeter type 1) and flexible hose fitting; (B) Flexible hose fitting on both sides
Filter 2/3	Flexible hose fitting on both sides
Mesh width:	100 Micron
Pressure drop filter:	See graph
Filter housing material:	PVDF
Filter material:	PFA
'O'- ring material:	Viton



Ordering information

IR-Opflow XX X X X X

Accuracy

10 = ±1% of measured value
30 = ±3% of measured value

Output signal

0 = square wave pulse
5 = sinusoidal pulse

Type

1 = 0.1 - 2.0 lpm (0.03 - 0.53 gpm) *)
2 = 0.3 - 9.0 lpm (0.08 - 2.38 gpm) *)
3 = 0.5 - 15.0 lpm (0.13 - 3.96 gpm) *)
4 = 1.0 - 30.0 lpm (0.26 - 7.93 gpm)
5 = 2.5 - 75.0 lpm (0.66 - 19.8 gpm)
6 = 4.0 - 120.0 lpm (1.06 - 32.0 gpm)

Supply voltage

0 = 5 - 12 Vdc, 6 - 24 mA
1 = 8 - 24 Vdc, 18 - 30 mA

Process connection

N = NPT
H = Flexible hose fitting
B = BSP
S = Metric Thread

*) Available in cartridge design, "H" only

Examples:

100.10H
±1%, square wave, type 1, 5 - 12 Vdc, Hose barbs

300.41N
±3%, square wave, type 4, 8 - 24 Vdc, NPT