

IR Opflow PVDF Precision Liquid Turbine Flow Meter

Accurate, low flow, chemically resistant flowmeter

Manufactured in PVDF (polyvinylidene fluoride) the IR-Opflow Sensor is a precise volumetric liquid 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 pressure or volume variations. The patented rotor design prevents air or gas bubbles from becoming trapped in the flow tube, making the IR-Opflow flow sensor not only rugged but also extremely accurate. The corrosive resistant turbine flowmeter is ideal for aggressive chemicals, de-ionized water and other demanding low to medium flow applications.



Features

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

Flow Ranges and Pulses

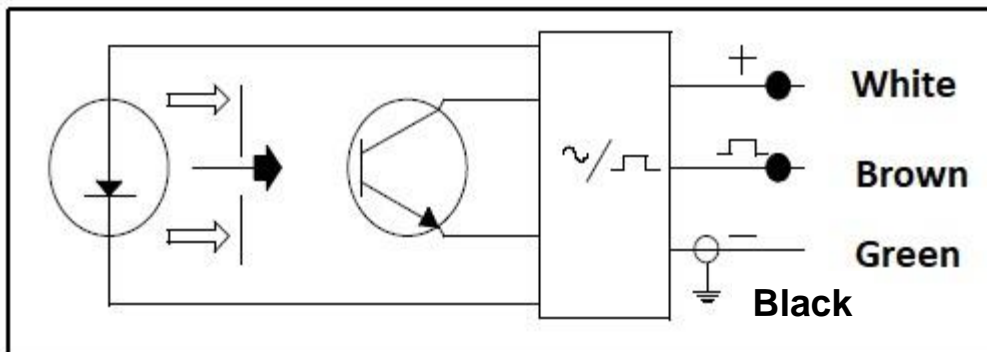
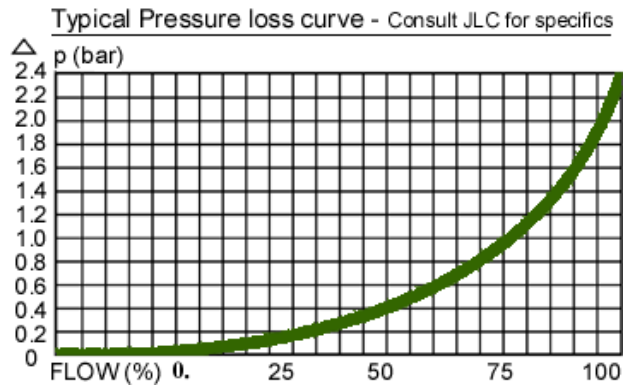
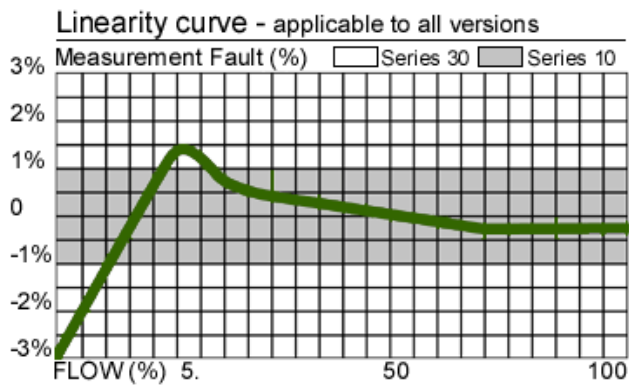
Type	Range liter/min	Range gal/min	Frequency Hz	K-factor 1/liter	K-factor 1/gallon
1	0.1.....2.0	0.03.....0.53	60.....1200	36000	136275
2	0.3.....9.0	0.08.....2.38	40.....1200	8000	30284
3	0.5.....15.0	0.13.....3.96	26.66.....800	3200	12113
4	1.0.....30.0	0.26.....7.93	20.....600	1200	4542
5	2.5.....75.0	0.66.....19.81	18.75..562	450	1703
6	4.0.....120.0	1.06.....31.70	15.....450	225	852

Table 1

Technical Specifications

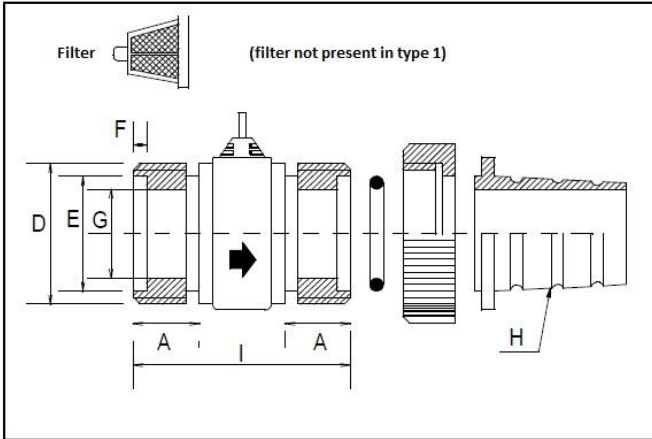
- Accuracy: 10 Series $\pm 1\%$ of reading, 30 Series $\pm 3\%$ of reading
- Repeatability: $\pm 0.1\%$ of reading
- Pulse output: Square wave pulse, open collector, NPN, max. 500 Ohms
- Output frequency: 15 – 1200 Hz, all over six types
- Detector: Opto-electronic (Infrared) *
- Pressure rating: 10 bar (145 psi)
- Viscosity: maximum 5 cSt
- Temperature rating: $-40\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$) up to $85\text{ }^{\circ}\text{C}$ ($185\text{ }^{\circ}\text{F}$)
- Process connections: NPT, BSP, or Hose Barbs (see table 2 and 3)
- Body and internals: PVDF
- Seals: Viton O ring, only on hose barb models
- Power supply: 5 – 12 Vdc or 8 – 24 Vdc
- Cable length: 1-meter (3 feet) standard

*) wavelength approx. 85 nm, medium must be translucent



Electrical connections

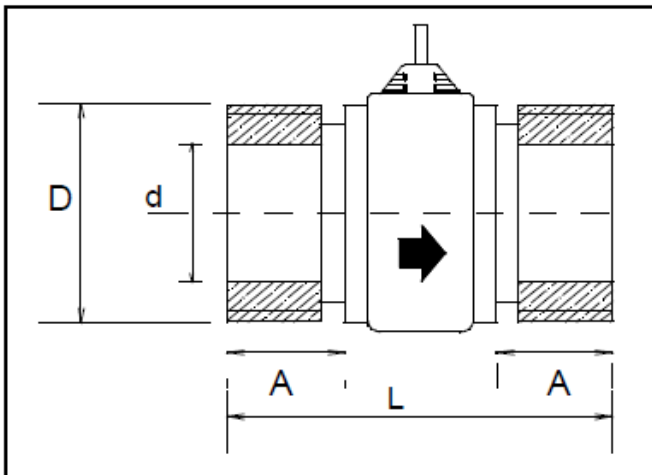
Dimensions in mm



Hose Barbs

Type	A	D	E	F	G	H	I	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"	29.4	1.6	24.5	19.5	80	182
6	16.5	BSP 1"	29.4	1.6	24.5	24.5	80	183

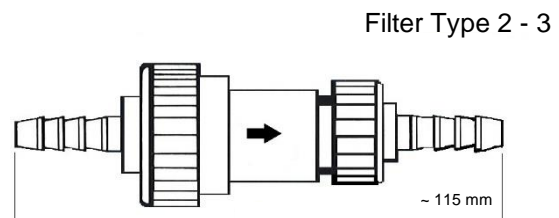
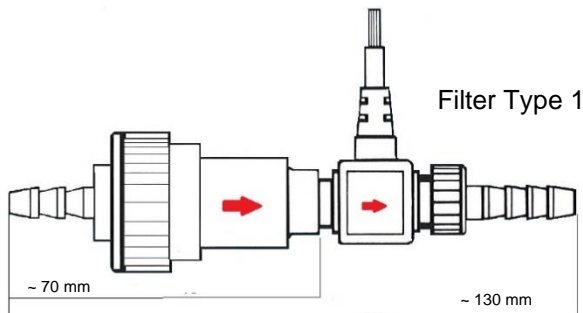
Table 2



NPT or BSP Male Thread

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 3



- Hose barb fittings on both sides
- Filter 100 micron
- Housing material PVDF
- Filter material PFA
- O-ring material Viton



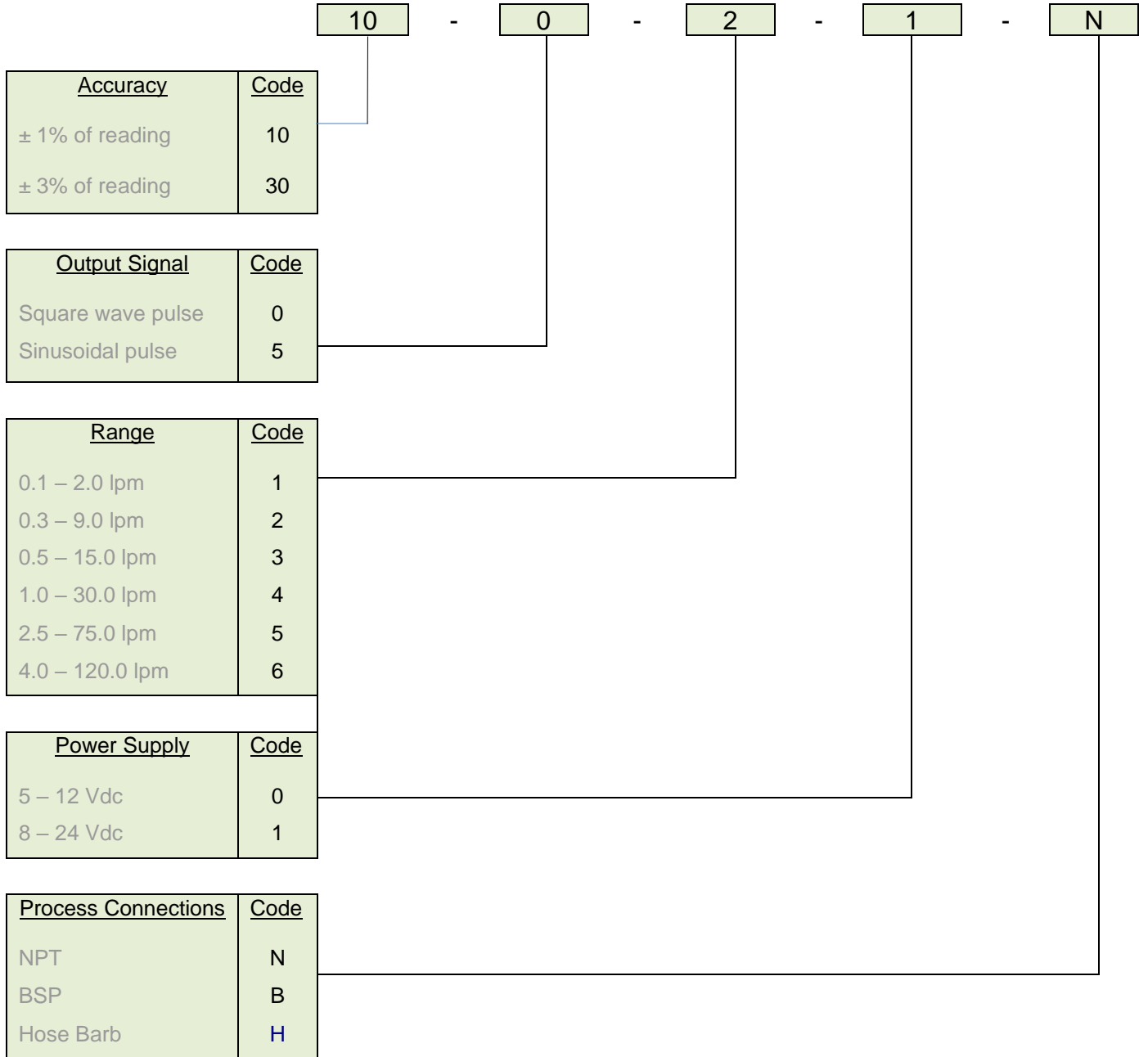
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Model Ordering Guide



Order example: 100.21N; ± 1% of reading, square wave pulse, type 2, 8 – 24 Vdc and NPT process connections