

DESCRIPTION

The DigiFlow DFS-2W/3W flowmeters were specifically developed for use in biopharmaceutical, medical, food processing and other end-use/OEM applications requiring either interchangeable or disposable components or other high volume/low unit cost applications. The basic flowmeter consists of two major assemblies:

- A sterilizable, interchangeable/disposable rotor assembly including all wetted surfaces.
- A permanent, fixed electronics/mounting assembly.

The flowmeter design makes it an integral component of systems designed for accurate monitoring or flow control of liquids.

ADVANTAGES

- Interchangeable/disposable rotor assembly
- Flowmeters can be manufactured under certified cleanroom conditions
- Easy and quick installation of rotor assembly
- Permits continuous feedback during process of quantity dosed
- Flowmeter control system allows simple adjustment of different quantities
- Wetted parts of FDA approved materials

DESIGN FEATURES

- Suitable for flows ranging from 0.07 – 25 L/min (.02 – 6.6 GPM)
- Accuracy within 0.5%
- Wetted surfaces and housing of high quality polymers
- Low pressure drops
- Ultra-low friction bearings yield long life
- High chemical resistance
- Turn down ratios of up 64:1
- Infrared signal detection
- Resolution of up to 65,000 pulses/L (227,100/gallon)

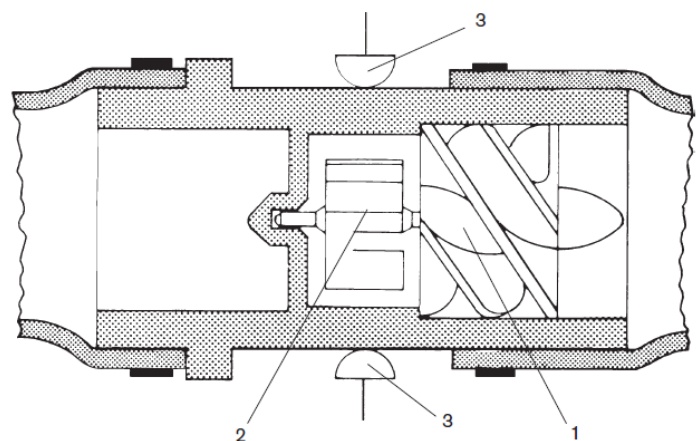
SYSTEMS & APPLICATIONS

Connected to a basic counter, the DFS meter can monitor flow rates and/or total quantities. In conjunction with a stand-alone process controller or general purpose computers, the DFS is an integral part of flow controlled processes. DigiFlow units are adaptable to a wide range of monitoring and controlling applications including: dosing of chemicals into main stream, dosing of pharmaceuticals on filling lines, medical equipment, and beverage dispensing.



DFS-2W and DFS-3W

PRINCIPLE OF OPERATIONS



The fluid flows through the meter, first passing the fixed worm (1) causing a spiral flow which, in turn, spins the rotor (2) on a virtually frictionless bearing. The rotor blades interrupt an infrared beam (3), thus generating a square wave digital output signal.

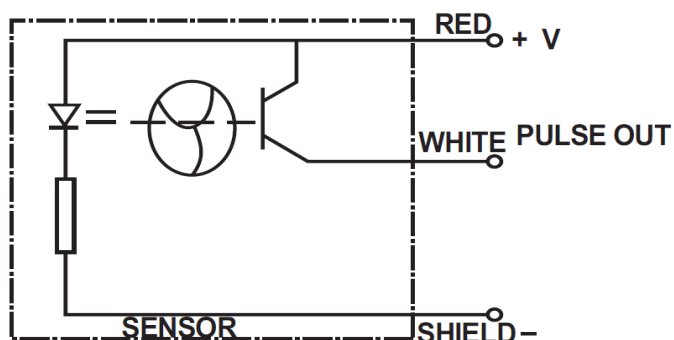
The rotor is the only moving part. Due to its light weight and the helical flow pattern, the rotor has a minimum response time, resulting in very high resolution and accuracy, linearity, and repeatability.

DFS meters can be mounted in any position and do not require flow straighteners or other specialized tools.

SPECIFICATIONS

Specifications	DFS-2W	DFS-3W
Media	liquids	liquids
Flow range	0.07 - 4.5 L/m (.02 - 1.2 GPM)	0.66 - 25 L/m (.17 - 6.6 GPM)
Turndown ratio	64:1	38:1
Accuracy	± 0.5% (of actual flow reading)	± 0.5% (of actual flow reading)
Linearity deviation	0.5%	0.5%
Repeatability	< 0.15%	< 0.10%
Average K-factor	60,000 pulses/L (227,100 pulses/Gal.)	4,500 pulses/L (17,000 pulses/Gal.)
Temperature range		
Operational	-15°C to +85°C (5°F to +185°F)	-15°C to +85°C (5°F to +185°F)
Static	-20°C to +130°C (-4°F to +266°F)	-20°C to +130°C (-4°F to +266°F)
Viscosity range	0.8 - 10 cSt (0.8 - 10 mm ² /s)	0.8 - 15 cSt (0.8 - 15 mm ² /s)
Max. pressure	25 bar (360 PSIG)	25 bar (360 PSIG)
Pressure drop	0.2 bar @ 1 L/m (2.9 PSI @ .25 GPM)	0.2 bar @ 5 L/m (2.9 PSI @ 1.3 GPM)
Power supply	5 VDC, 12 - 36 mAmp	5 VDC, 12 - 36 mAmp
Output signal	5 VDC square wave	5 VDC square wave
Materials		
Rotor assembly	PVDF	PVDF
Mounting assembly	Polycarbonate	Acetal
Electrical lead	1 meters (39") in length	1 meters (39") in length
Dimensions		
Rotor assembly	38 mm x 7 mm (1.5" x 0.28")	52 mm x 12 mm (2.05" x 0.47")
Mounting assembly	35 mm x 23 mm x 7.9 mm (1.4" x 0.9" x 0.3")	30 mm x 15 mm x 17 mm (1.2" x 0.6" x 0.7")
Connections	7 mm (9/32") hose barb fitting	12 mm (15/32") hose barb fitting or 7/8"-14 (M22) male thread

WIRING CHART



RECOMMENDATIONS FOR USING DIGIFLOW FLOWMETERS

- Check flow direction (arrow on the housing), fluid going in the opposite direction will not generate an output signal.
- Install a suitable filter in front of the sensor (see table for recommended pore size).
- De-aerate the system with a gentle flow before starting the system.
- Check for leakages after starting the system.
- Never clean the flowtube with compressed air.
- Check chemical resistance of the wetted parts before use