Introducing the TDFM Series Flow Meter.

SERIES: TDFM

APPLICATIONS

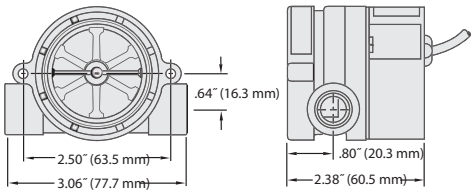
- Water Purification/Dispensing Systems
- Chemical Metering Equipment
- Lasers and Welders
- Water Injection Systems
- Semiconductor Processing Equipment
- Chillers and Heat Exchangers

DESCRIPTION

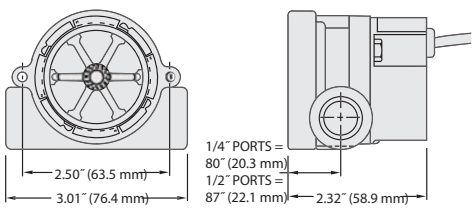
T-Direct's paddlewheel design is complemented nicely by combining high visibility rotors with solid-state electronics that are packaged into compact, panel moutning housings. They provide accurate flow rate output with integral visual confimation… all with unprecedented price/performance ratio. Units will feature a VDC pulsed or a 0-10VDC output.

DIMENSIONS

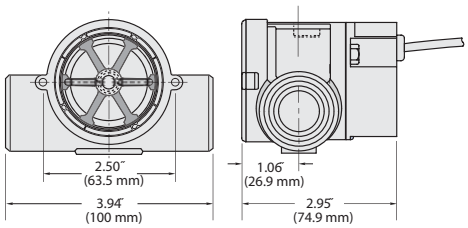
Polypropylene Bodies



Brass and Stainless Steel Bodies - .25˝ and .50˝ Ports



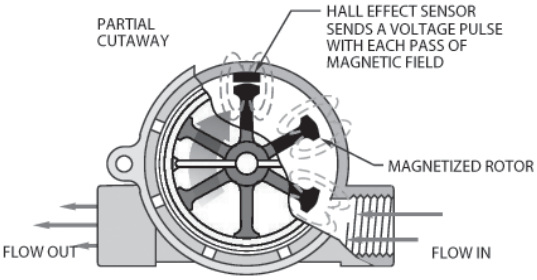
Brass Bodies – .75˝ and 1.00˝ NPT Ports



High Resolution
Black Rotor
PPS composite. Each of the six rotor arms is magnetized. A PTF loaded bushing

Note: Improved accuracy can be achieved by calibrating the individual unit with the external controller or indicator.

Operating Principle



1. As liquid passes through the body, the magnetic rotor spins at a rate that is proportional to flow. This causes a series of magnetic fields (the rotor vanes) to excite the Hall Effect sensor, producing a series of voltage pulses

2. The output pulses are at the same voltage level as the input (4.5 - 24 VDC) with a frequency proportional to the flow rate. The output signal can be utilized by digital rate meters totalizers or other electronic controllers. TDFM analog sensors condition the output signal to 0-10 VDC

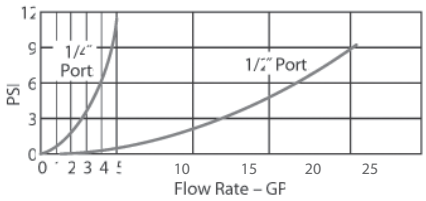
3. The Flow Indicators may be mounted with flow entering either port. Performance is optimized by positioning ports at the top of the unit

Frequency vs. Flow Rate-Typical

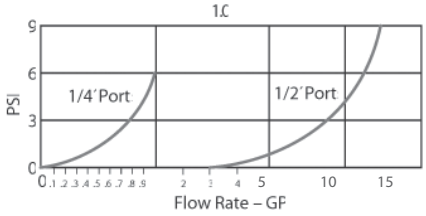
	Output Frequency – H					
	RFO Model – Based on Port Size					
Flow Rate (GPM)	.25″	.25″ with Adapter[1]	.50″	.50″ with Adapter[1]	.75″	1″
0.10		13				
0.25		41				
0.50	15	90				
0.75		137				
1.0	34	186				
1.5	54			17		
2.0	73			25.9		
2.5	90			34		
3.0	110			43	12.0	
3.5	128					
4.0	148		34	60	16.4	
4.5	168					
5.0	185		44.8	76.7	20.4	
6.0			55	94		
7.0			65.9	111		
8.0			76	129		21.8
9.0			87.5	147		
10			99	165	38.6	27.5
11			110	185		
12			122	204		
13			135			
14			147			
15			158		60.6	42.1
16			170			
17			183			
18			195			
19			207			
20			220		83.0	56.6
25					104.0	72.7
30					125.5	88.8
35					147.2	104.4
40					171.9	121.3
45					191.0	137.1
50					212.9	153.9
55						171.0
60						188.7

Pressure Drop-Typical

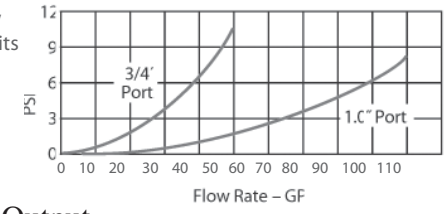
Standard Flow Range Units



Low Flow Range Units



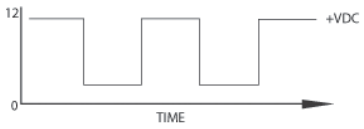
High Flow Range Units



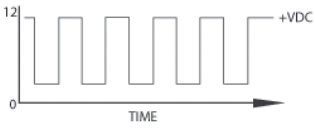
Signal Output

Output Signal for pulse type is an on/off pulse of the DC voltage supplied to the unit, it is compatible with all digital logic families. Input voltage range is4.5 to 24 VDC. Frequency of the output pulse is proportional to the flow rate and ranges from approximately 15 Hz at low flow to 225 Hz at high flow.

Example Low Flow



High Flow



SPECIFICATIONS

Wetted Materials	
Body	Brass, 316 Stainless Steel or Polypropylene (Hydrolytically Stable, Glass Reinforced)
Rotor Pin	Ceramic
Rotor	PPS Composite, Black1
Lens	Polysulfone
O-Ring	Viton® (Alloy Bodies); Buna N (Polypropylene Body)
Low Flow Adaptor	Glass Reinforced Polypropylene
Operating Pressure, Maximum	
Brass or Stainless Steel Body	200 PSIG @ 70°F, 100 PSI Max. @ 212°F 2
Polypropylene Body	100 PSIG @ 70°F, 40 PSI Max. @ 180°F
Operating Temperature	
Brass or Stainless Steel Body	-20°F to 212°F (-29°C to 100°C)
Polypropylene Body	-20°F to 180°F (-29°C to 82°C)
Electronics	150°F (65°C) Ambient
Viscosity, Maximum	200 SSU
Input Power	Pulsed output = 4.5 VDC to 24 VDC, 0-10VDC output = 24VDC +/10%
Output Signal	4.5 VDC to 24 VDC Pulse or 0-10VDC analog signal @ 1mA max Pulse Rate Dependent on Flow Rate, Port Size and Range.
Current Consumption	Pulsed version = 8 mA, No Load. Analog version = 25mA max
Current Source Output, Max.	70 mA
Frequency Output Range	15 Hz (Low Flow) to 225 Hz (High Flow)
Accuracy	See Table
Electrical Termination	22 AWG PVC-Jacketed, 24" Cable. Color Coded: Red = +VDC; Black = Ground; White = Signal Output

ORDERING

For standard configurations, specify Part Number based on desired body material and port size.

Body Material	Port Size NPT	Flow Range – GPM		Part Number Pulsed Output	Part Number 0-10VDC Output Stnd. Range	Part Number 0-10VDC Output Low Range
		Low* Range (Accuracy)	Standard Range (Accuracy)			
Polypropylene	.25"	0.1 to 1.0 (±7.0%)	0.5 to 5.0 (±7.0%)	TDFM21	TDFM31	TDFM41
	.50"	1.5 to 12.0 (±7.0%)	4.0 to 20.0 (±15.0%)	TDFM22	TDFM32	TDFM42
Brass	.25"	0.1 to 1.0 (±7.0%)	0.5 to 5.0 (±7.0%)	TDFM23	TDFM33	TDFM43
	.50"	1.5 to 12.0 (±7.0%)	4.0 to 20.0 (±15.0%)	TDFM24	TDFM34	TDFM44
	.75"		5.0 to 30.0 (±10.0%)	TDFM25	TDFM35	
	1.00"		8.0 to 60.0 (±15.0%)	TDFM26	TDFM36	
Stainless Steel	9/16"-18**	0.1 to 1.0 (±7.0%)	0.5 to 5.0 (±7.0%)	TDFM27	TDFM37	TDFM45
	.50"	1.5 to 12.0 (±7.0%)	4.0 to 20.0 (±15.0%)	TDFM28	TDFM38	TDFM46
	.75"		5.0 to 30.0 (±10.0%)	TDFM29	TDFM39	
	1.00"		8.0 to 60.0 (±15.0%)	TDFM30	TDFM40	

* With use of low flow adapter Supplied (Pulsed Output Only)
** Straight thread with O-Ring seal

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