

Turbine Flow Meter

StaTurb TF100 Series - Standard

Introduction

The TF100 series turbine flow meter includes a rotor and a sensor. When fluid passes through TF100 and the revolving rotor passes the sensor, electrical pulses are produced in which frequency is proportional to the flow rate.

As one of our most popular turbine flow meters, TF100 series are used to measure lower viscous medium media, such as water, light fuel, solvent, hydraulic oil, lubricating oil etc.



Characteristics

- High pressure resistance
- Low pressure loss
- Fast response
- High repeatability and accuracy
- Resistant to contamination
- Optional 20:1 turndown

Applications

- Petrochemical / Energy
- Hydraulic / Lubrication
- Chemical processing
- Oil / Gas
- Aviation / Aerospace
- Test bench

Specifications

Applicable Medium	Liquids with medium or lower viscosity
Accuracy	1% of reading
	Optional 0.5%
Repeatability	<0.2% of reading
Pressure Resistance	Max. 6,000 psi (420 bar)
Operating Temperature	-350 to 450°F (-212 to 232°C)
Materials	Body: 316L SS
	Rotor: Duplex SS
	Bearing: Tungsten Carbide Journal Bearing
Process Connection	NPT thread
	BSPP thread
	Other connections on request

Flow Range

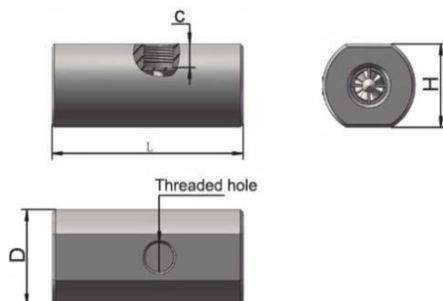
Part Code	Flow Meter Size (Inch)	Flow Range		Max. Pressure Rating		Max. Filter Diameter (Micron)
		GPM	LPM	psi	bar	
R4A	1/4"	0.13...1.3	0.5...5	6,000	420	75
R4	1/4"	0.26...2.6	1...10	6,000	420	100
R6	3/8"	0.52...5.2	2...20	6,000	420	150
R8A	1/2"	1...10	3.8...38	6,000	420	150
R8	1/2"	1.8...18	6.8...68	6,000	420	150
R12	3/4"	3.4...34	13...130	4,300	300	150
R16	1"	4.5...45	17...170	4,300	300	200
R20	1-1/4"	6.6...66	25...250	3,600	250	200
R24	1-1/2"	8.5...85	32...320	3,600	160	200
R32	2"	18...180	67...670	2,100	150	200

* Turndown 20:1 is available, see order code for details.

Pressure Drop

Part Code	Pressure Drop (% flow range)						
	bar (psi)						
	10%	25%	40%	55%	70%	85%	100%
R4A	0.00 (0.00)	0.01 (0.15)	0.03 (0.44)	0.05 (0.73)	0.08 (1.16)	0.11 (1.60)	0.15 (2.18)
R4	0.01 (0.15)	0.03 (0.44)	0.06 (0.87)	0.16 (2.32)	0.19 (2.76)	0.27 (3.92)	0.35 (5.08)
R6	0.01 (0.15)	0.02 (0.29)	0.06 (0.87)	0.11 (1.60)	0.16 (2.32)	0.23 (3.34)	0.32 (4.64)
R8A	0.01 (0.15)	0.05 (0.73)	0.11 (1.60)	0.20 (2.90)	0.30 (4.35)	0.46 (6.67)	0.61 (8.85)
R8	0.06 (0.87)	0.12 (1.74)	0.23 (3.34)	0.41 (5.95)	0.61 (8.85)	0.92 (13.35)	1.22 (17.70)
R12	0.06 (0.87)	0.13 (1.89)	0.24 (3.48)	0.42 (6.10)	0.64 (9.29)	0.93 (13.49)	1.22 (17.70)
R16	0.06 (0.87)	0.09 (1.31)	0.16 (2.32)	0.27 (3.92)	0.39 (5.66)	0.57 (8.27)	0.74 (10.74)
R20	0.06 (0.87)	0.13 (1.89)	0.24 (3.48)	0.43 (6.24)	0.62 (9.00)	0.96 (13.93)	1.31 (19.00)
R24	0.07 (1.02)	0.16 (2.32)	0.32 (4.64)	0.60 (8.70)	0.89 (12.91)	1.32 (19.15)	1.74 (25.24)
R32	0.07 (1.02)	0.08 (1.16)	0.14 (2.03)	0.24 (3.48)	0.34 (4.93)	0.51 (7.40)	0.66 (9.58)

Dimensions



Part Code	Flow Meter Size (inch)	End Fittings		Dimensions (female thread)							
		Female Thread (inch)	Male Thread (inch)	L		H		D		C	
				mm	inch	mm	inch	mm	inch	mm	inch
R4A	1/4"	3/8"	1/2"	68	2.68	27	1.06	33	1.3	9.7	0.38
R4	1/4"	3/8"	1/2"	68	2.68	27	1.06	33	1.3	9.2	0.36
R6	3/8"	3/8"	1/2"	68	2.68	30	1.18	36	1.42	8.7	0.34
R8A	1/2"	1/2"	3/4"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R8	1/2"	1/2"	3/4"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R12	3/4"	3/4"	1"	115	4.53	46	1.81	52	2.05	11.7	0.46
R16	1"	1"	1-1/4"	142	5.59	50	1.97	56	2.2	11	0.43
R20	1-1/4"	1-1/4"	1-1/2"	164	6.46	60	2.36	66	2.6	12.5	0.49
R24	1-1/2"	1-1/2"	2"	197	7.76	70	2.76	76	3	13.5	0.53
R32	2"	2"	2-1/2"	210	8.27	75	2.95	83	3.26	11	0.43

Order Code

Example: TF100-NF-R12-B

1. Model

TF100- Turbine Flow Meter

2. End Fitting

GF Female BSPP thread
 GM Male BSPP thread
 NF Female NPT thread
 NM Male NPT thread
 S Other connections on request

3. Part Code

R12 Select a part code from flow range table above to determine the flow range.

4. Accuracy

A 0.5% of reading
 B 1% of reading

5. Turndown (optional)

E20 20:1
 A 20:1 turndown will result in a 50% reduction in the lower flow limit.

See next page for electronics options

Electronics Options**S1000 Pickup Coils / Transmitters**

Amplified Pulse
Linearized 4...20mA Output

**DE500 Local Display**

Local Display
4...20mA + Alarms Output

**SA500 Pickup Coils**

Intrinsically Safe
Amplified Pulse

**SX500 Flow Transmitters**

Explosion-Proof
Modbus RS485



See electronics' datasheet for details.