

Turbine Flow Meter

StaTurb TF100 Series - Standard

Introduction

StaTurb TF100 series flowmeter contains a magnetic detector and a magnetically permeable rotor (impeller). The flow of the medium drives the rotor (impeller) to turn. The rotational speed of the rotor (impeller) is proportional to the flow velocity of the medium. The magnetic detector detects the rotational speed of the rotor and converts it into a standard industrial electrical signal for output or display.

TF100 series are used to measure medium or lower viscosity 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
- Pulse /analog output

Applications

- Petrochemical/energy industry
- Hydraulic /lubrication system
- Water treatment
- Oil /gas industry
- Experimental equipment
- Test systems

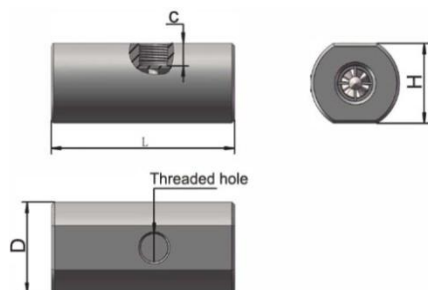
Specifications

Measuring range	0.16...154 gal/min (0.6...700 L/min)
Applicable medium	Liquids with medium or lower viscosity
Accuracy	1% of reading (optional 0.5%)
Repeatability	2% of reading
Pressure resistance	Max. 6000 psi (420 bar)
Ambient Temperature	-40...185°F (-40...85°C)
Medium Temperature	-40...212°F (-40...100°C). See order code for higher options)
Materials	Body: 304 stainless steel Rotor: 304 stainless steel Bearing: tungsten carbide journal bearing
Process connection	G female thread NPT female thread

Measuring range

Part Code	End Fitting (Inch)	Measuring Range		Extended measuring Range		Max. Filter Diameter (Micron)	Max. Pressure	
		gal/min	L/min	gal/min	L/min		bar	psi
R4	1/4"	0.16...1.32	0.6...5	0.08...1.32	0.3...5	75	420	6000
R6	1/4"	0.43...2.64	1.6...10	0.13...3.17	0.5...12	100		
R10	3/8"	0.79...5.28	3.0...20	0.19...6.60	0.7...25	150		
R13	1/2"	1...10	3.8...38	0.27...10.03	1...38	150		
R15	1/2"	2.64...26.4	10...100	0.80...26.41	3...100	150		
R20	3/4"	3.43...34.3	13...130	1.32...38.30	5...145	150	300	4350
R25	1"	4.49...44.9	17...170	1.59...50.19	6...190	200	300	4350
R32	1-1/4"	6.6...66	25...250	2.38...71.32	9...270	200	250	3625
R40	1-1/2"	8.45...84.5	32...320	3.17...95.10	12...360	200	160	2320
R50	2"	17.7...177	67...670	6.60...184.92	25...700	200	150	2175

Dimensions



Size Code	End Fitting (Inch)	L		H		D		C	
		mm	inch	mm	inch	mm	inch	mm	inch
R4	1/4"	68	2.68	27	1.06	33	1.3	9.7	0.38
R6	1/4"	68	2.68	27	1.06	33	1.3	9.2	0.36
R10	3/8"	68	2.68	30	1.18	36	1.42	8.7	0.34
R13	1/2"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R15	1/2"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R20	3/4"	115	4.53	46	1.81	52	2.05	11.7	0.46
R25	1"	142	5.59	50	1.97	56	2.2	11	0.43
R32	1-1/4"	164	6.46	60	2.36	66	2.6	12.5	0.49
R40	1-1/2"	197	7.76	70	2.76	76	3	13.5	0.53
R50	2"	210	8.27	75	2.95	83	3.26	11	0.43

Pressure Drop

Part Code	End Fitting (Inch)	Pressure Drop (% measuring range)						
		bar (psi)						
		10%	25%	40%	55%	70%	85%	100%
R4	1/4"	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)
R6	1/4"	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)
R10	3/8"	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)
R13	1/2"	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)
R15	1/2"	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)
R20	3/4"	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)
R25	1"	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)
R32	1-1/4"	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)
R40	1-1/2"	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)
R50	2"	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)

Order Code

Example: TF100-NF-R15-B

1. Model

TF100- Turbine Flow Meter

2. End Fitting

GF G female thread
 NF NPT female thread
 S Other connections on request

3. Part Code

R4	1/4"	0.6...5 L/min (0.16...1.32 gal/min)
R6	1/4"	1.6...10 L/min (0.43...2.64 gal/min)
R10	3/8"	3.0...20 L/min (0.79...5.28 gal/min)
R13	1/2"	3.8...38 L/min (1...10 gal/min)
R15	1/2"	10...100 L/min (2.64...26.4 gal/min)
R20	3/4"	13...130 L/min (3.43...34.3 gal/min)
R25	1"	17...170 L/min (4.49...44.9 gal/min)
R32	1-1/4"	25...250 L/min (6.6...66 gal/min)
R40	1-1/2"	32...320 L/min (8.45...84.5 gal/min)
R50	2"	67...670 L/min (17.7...177 gal/min)

4. Accuracy

A 0.5% of reading
 B 1% of reading

Sensor Options

1. Model

S1000- Sensor for turbine flow meter

2. Pickup

M Magnetic (standard)
 H Hall effect
 R RF

3. Output

P1 Pulse output
 P2 Linearized pulse output
 A Analog output
 D Digital transmitter
 E Ex-proof transmitter

4. Temperature

T1 -40...212°F (-40...100°C)
 T2 -40...302°F (-40...150°C)
 T3 -40...446° (-40...230°C)

See sensor's datasheet for details



Pulse output



Analog output



Digital display



Ex-proof digital display