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 Magnetic The 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	NPT thread G thread

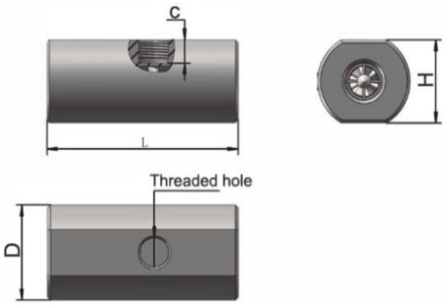
Measuring range

Part Code	Flow Meter Size (Inch)	Measuring Range		Extended measuring Range		Max. Filter Diameter (Micron)	Max. Pressure	
		gal/min	L/min	gal/min	L/min		bar	psi
R4A	1/4"	0.16…1.32	0.6…5	0.08…1.32	0.3…5	75	420	6000
R4	1/4"	0.43…2.64	1.6…10	0.13…3.17	0.5…12	100		
R6	3/8"	0.79…5.28	3.0…20	0.19…6.60	0.7…25	150		
R8A	1/2"	1…10	3.8…38	0.27…10.03	1…38	150		
R8	1/2"	2.64…26.4	10…100	0.80…26.41	3…100	150		
R12	3/4"	3.43…34.3	13…130	1.32…38.30	5…145	150	300	4350
R16	1"	4.49…44.9	17…170	1.59…50.19	6…190	200	300	4350
R20	1-1/4"	6.6…66	25…250	2.38…71.32	9…270	200	250	3625
R24	1-1/2"	8.45…84.5	32…320	3.17…95.10	12…360	200	160	2320
R32	2"	17.7…177	67…670	6.60…184.92	25…700	200	150	2175

Pressure Drop

Part Code	Pressure Drop (% measuring 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"	1/4"	1/2"	68	2.68	27	1.06	33	1.3	9.7	0.38
R4	1/4"	1/4"	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"	1/2"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R8	1/2"	1/2"	1/2"	96.6	3.8	41	1.61	47	1.85	11.7	0.46
R12	3/4"	3/4"	3/4"	115	4.53	46	1.81	52	2.05	11.7	0.46
R16	1"	1"	1"	142	5.59	50	1.97	56	2.2	11	0.43
R20	1-1/4"	1-1/4"	1-1/4"	164	6.46	60	2.36	66	2.6	12.5	0.49
R24	1-1/2"	1-1/2"	1-1/2"	197	7.76	70	2.76	76	3	13.5	0.53
R32	2"	2"	2"	210	8.27	75	2.95	83	3.26	11	0.43

Order Code

Example: TF100-NF-R15-B

1. Model	
TF100-	Turbine Flow Meter

2. End Fitting	
GF	Female G thread
GM	Male G thread
NF	Female NPT thread
NM	Male NPT thread
S	Other connections on request

3. Part Code	
R12	Select a part code from measuring range table above to determine the flow range.

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 efffect
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