

Series FM10 Turbine Flow Meters

- ▶ **FM10 – F FLANGED FULL BORE TURBINE FLOWMETERS** 1/2 in (12 mm) to 12 in (300 mm)
- ▶ **FM10 – T THREADED FULL BORE TURBINE FLOWMETERS** ¼ in (6 mm) to 2 in (50 mm)
- ▶ **FM50 FLOW INSTRUMENTS TRANSMITTERS - RATE OF FLOW INDICATORS - TOTALISERS**

SERIES FM10 TURBINE FLOW METERS are rugged, accurate, reliable instruments for the volumetric flow measurement of liquids and gases in closed pipe applications.

They are suitable for the industrial, petrochemical, hydraulic and aerospace industries

- ▶ **FULL RANGE OF LINE SIZES**
- ▶ **EXCELLENT LINEARITY**
- ▶ **GOOD REPEATABILITY**
- ▶ **TRACEABLE CALIBRATION**
- ▶ **RUGGED CONSTRUCTION**
- ▶ **NEGLEGIBLE PRESSURE DROP**



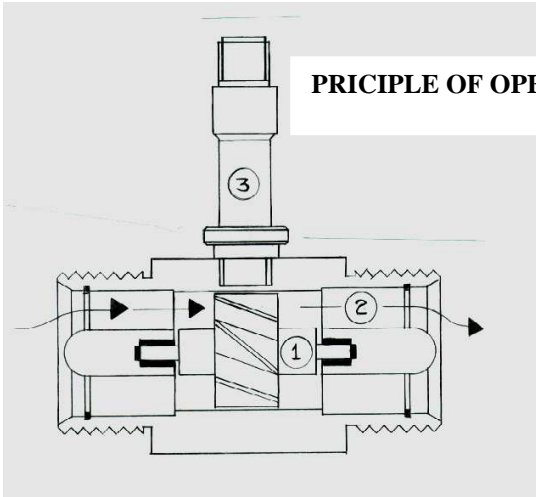
Flanged Meter



Threaded Meter

Linearity – Liquids	-----	< +/- 0.25 % of reading (selected range)
		< +/- 0.5 % of reading (linear range)
Gases	-----	< +/- 1% of reading (linear range)
Repeatability	-----	0.05% over stated conditions
Response time	-----	< 0.05 seconds for 50% flow rate change
Operating pressure	-----	Screwed bodies upto 350 bar Flanged bodies dependant on flange rating
Pressure drop	-----	Typically 0.25 bar at maximum flow rate
Temperature range	-----	- 40 to + 300 deg c. (dependent on pickup)
Electrical connection	-----	Plug & socket 30 to 500mV peak to peak
End connections	-----	Threaded B.S.P. flanged ANSI or DIN std. (Alternatives available on request)

PRICIPLE OF OPERATION



AS FLUID PASSES THROUGH THE TURBINE METER IT CAUSES A FREELY SUPPORTED ROTOR (1) TO REVOLVE AT A SPEED WHICH IS DIRECTLY PROPORTIONAL TO THE VOLUMETRIC FLOW RATE.

THIS IS ACHIEVED BY CONTROLLING THE BEARING SUPPORT ANNULUS (2) AND ARRANGING THE BLADES OF THE ROTOR AT AN APPROPRIATE ANGLE TO THE FLOW.

A PICKUP ASSEMBLY (3) MOUNTED OUTSIDE THE FLOWMETER BODY DETECTS THE PASSAGE OF EACH ROTOR BLADE A SINUSOIDAL VOLTAGE IS GENERATED THE FREQUENCY OF WHICH IS PROPORTIONAL TO FLOWRATE.

THE HIGHER THE ROTATIONAL SPEED THE HIGHER THE FREQUENCY AND THE VOLTAGE GENERATED

WHEN ORDERING PLEASE SPECIFY

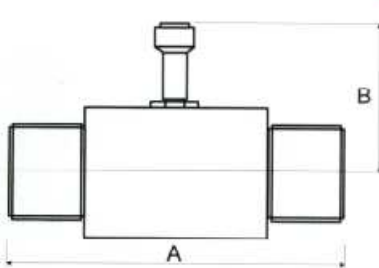
- FLUID TYPE
- FLUID PRESSURE
- FLUID TEMPERATURE
- FLUID VISCOSITY OR DENSITY
- MAX. AND MIN. FLOW RATES
- PIPELINE NOMINAL BORE
- END CONNECTIONS TYPE AND SIZE
- PICKUP TYPE
- OPTIONAL EQUIPMENT *

MATERIALS

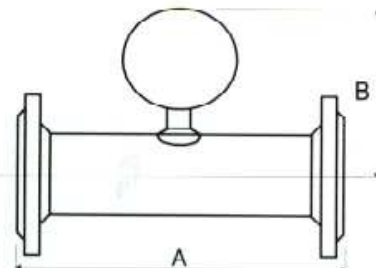
- BODY** 304 / 316 STAINLESS STEEL
- BEARINGS** S.S. BALL RACE FOR LUBRICATING FLUIDS AND GASES
STELLITE/T.C. FOR NON -LUBRICATING FLUIDS
- ROTOR** STAINLESS STEEL (BS146 ANC21) FOR CASTINGS
SANDVIK 1802 (BS970 431) FOR MACHINED TYPE
- FLANGES** STAINLESS STEEL 316L / 304
- PICKUP** STANDARD MAGNETIC, ALTERNATIVES :- HIGH TEMP. & I.S.

NOMINAL BORE		MAXIMUM OPERATING FLOW RATES				DIMENSIONS			
		LIQUIDS		GASES		THREADED		FLANGED	
mm	inches	cmh	gpm.	A/cmh	A/cfm	A(mm)	B(mm)	A(mm)	B(mm)
6	¼	0.28	1.00			50	93		
6	¼	0.55	2.00			50	93		
12	½	1.10	4.00			63.5	93	127	120
16	5/8	2.20	8.00	6.60	3.75	63.5	93	127	120
16	5/8	4.00	15.00	12.00	7.50	63.5	93	127	120
20	¾	8.00	30.00	24.00	15.00	83	96	140	125
25	1	16.00	60.00	48.00	30.00	89	99	152	140
38	1 1/2	34.00	125.00	100.00	60.00	114	105	178	150
50	2	68.00	250.00	200.00	120.00	134	120	197	170
75	3	135.00	500.00					251	180
100	4	270.00	990.00					368	200

cmh = cubic meters per hour, gpm = imperial gallons per minute, cfm = cubic feet per minute
Rangeability 10 : 1 as standard on above flow rates subject to fluid properties. - 4, 6, 8, 10 & 12inch meters by request



Threaded Body



Flanged Body

LARGER SIZE METERS ARE PRODUCED TO CUSTOMERS SPECIFICATION

EACH METER IS INDIVIDUALLY CALIBRATED AND SUPPLIED WITH A CALIBRATION SHEET

CALIBRATION IS TRACEABLE TO NATIONAL STANDARDS

INDEPENDANT CERTIFICATION TO VERIFY COMPLIANCE CAN BE ARRANGED

The meters are manufactured from high grade, corrosion resistant materials and constructed to ensure reliable performance over a long period
The correct combination of materials, bearings, pickup style and end connections allow units to be assembled to suit hygenic, cryogenic, high temperature and high pressure applications

* Optional equipment includes Conduit Boxes, Zener Barriers, Transmitters, Rate of Flow Indicators & Totalisers

SERIES FM50 FOR FLOW TRANSMITTERS, RATE OF FLOW INDICATORS & TOTALISERS