



## LTM TURBINE SERIES

### Axial Turbine Flow Meters for Accurate Measurement of Liquids and Gases

The Metri series of industrial in-line turbine flow meters provide a high standard of accuracy and reliability in a large number of volumetric flow measurement applications.

- Wide range of sizes
- Accurate measurement with excellent linearity & repeatability
- Rugged stainless steel and exotic material construction available
- Versatile, adaptable design with custom options
- High pressure rating up to 1400 bar
- Low temperature cryogenic
- Customised hybrid bearing
- High temperature option up to 350°C
- Selection of flow instruments & displays for compact or remote installation
- Choice of outputs including pulse, 4-20 mA
- ATEX rated option IECEx EIA Ex d



#### Summary

- Brand: METRI
- Category: Turbine Flow Meters
- Fluid type: Liquids & Gases
- Part ref: IC-LTM
- IWN: FLO-130268

Rugged

Compact or Remote

Adaptable

Versatile




Repeatable

Accurate


#### Suitable for the following market sectors:

-  Industrial & Energy
-  Marine & Offshore
-  Medical & Science
-  Research & Development
-  Oil & Gas
-  Power Generation
-  Water & Wastewater
-  Food & Beverage
-  Aerospace & Automotive

#### Suitable for use with the following liquids:

-  Chemical
-  Clean Water
-  Fuel & Oil

## SPECIFICATION DETAILS

Nominal size	DN6, DN15, DN20, DN25, DN40, DN50, DN80, DN100, DN150 (other sizes on request)	
Process connection	BSPP (parallel) & BSPT (taper) female threaded, DIN & ANSI flanged; other on request eg PNXX, tri-clamp, NPT, RJT, Weco and Autoclave	
Flange rating	PN 16, 40, 100 (BS EN 1092-1); ANSI 150, 300, 600 RF, 900 RF, 1500 RF (ANSI B16.5) Slip on and Butt Weld type	
Compatibility	Solids free and partially contaminated liquids including water, chemicals, hydrocarbons, mineral oils, alcohols	
Flow range	0.028 to 550 m <sup>3</sup> /hr (0.4 to 9166 l/min), various ranges	
Operating temperature	Standard: -40 to 230°C High: -40 to 350°C (excludes ATEX) Cryogenic available: -196°C	
Max operating pressure	All threaded bodies: Flanged bodies:	Standard design 15-80mm up to 250 bar (1400 Bar Optional) Depends on flange rating operating temperature range
Frequency range	50-2500 Hz	
Pressure drop	Typically less than 250 mbar at maximum flow rate (standard ranges without flow restrictor)	
Linearity	< ± 0.25% of reading (selected range) < ± 0.5% of reading (linear range) over 1-5 cSt	
Repeatability	± 0.02 to 0.05% over stated conditions at operating viscosity range	
Materials	Body: Rotor: Rotor shaft: Bearings:	316 (Standard); other materials available on request e.g. Incoloy 431 stainless steel * Alternatives Available on request e.g. 174PH, Super Duplex 316 stainless steel; Tungsten Carbide, other materials on request Tungsten Carbide, Stainless steel ball race, Ceramic/Hybrid.
Output/display	Variable reluctance coil only (mV); pulse / analogue output modules; flow transmitter	
Installation	Horizontal or vertical flow rising, full pipe only	
Approvals (Sensor)	CE, ATEX EEx ia IIC or IIB T6 to T3 (excluding high temperature option) Ex d Ex II 2 G Ex d IIC T6 to T2	
Approvals (Displays)	F Series approvals • IP67 • Intrinsically Safe - ATEX and IECEx approval for gas and dust applications • Explosion/flare proof II 2 GD EEx d IIB T5  	E Series Approvals IP67 -40 to +70°C The ATEX markings are: Gas: II 2 G Ex d IIC T6 Gb Dust: II 2 D Ex tb IIIC T85°C Db FM / CSA c-us  The IECEx markings are: Gas: Ex d IIC T6 Gb Dust: Ex tb IIIC T85°C Db

## DIMENSIONS

Nominal Size (Bore)	Flanged		Screwed	
	L mm	H mm	L mm	H mm
6 mm (1/4")	114	-	51	92
12 mm (1/2")	127	69	63.5	94
16 mm (5/8")	127	69	63.5	94
20 mm (3/4")	140	72	83	96
25 mm (1")	152	75	89	98
40 mm (1.5")	178	78	114	82.5
50 mm (2")	197	78	134	92
80 mm (3")	254	92	200	-
100 mm (4")	356	110	-	-
150 mm (6")	368	-	-	-

## INSTRUMENT OPTIONS AVAILABLE

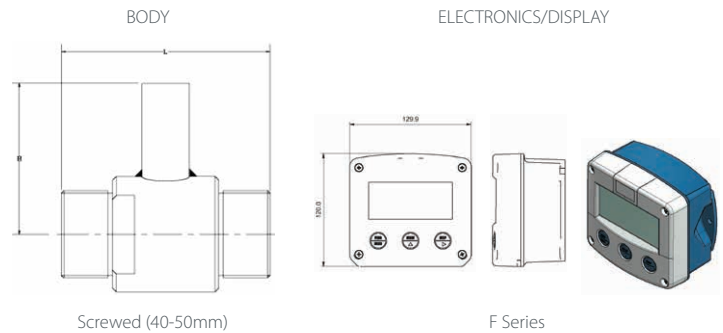
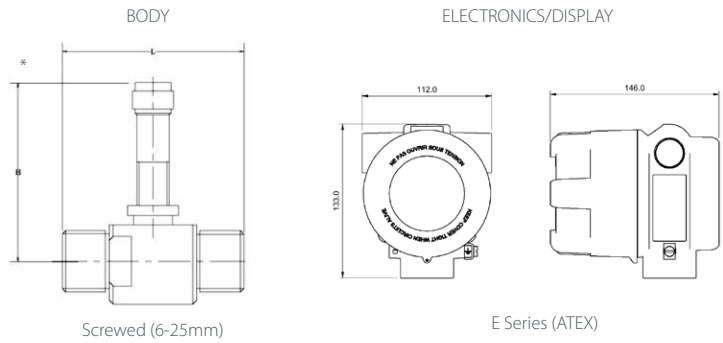
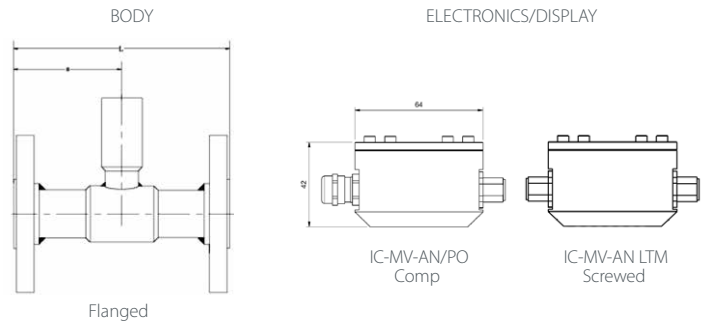
Type	Coil only	IC-MV-PO pulse output module	IC-MV-AN analogue output module	FDS (FMS)	E & F Series ATEX
Input	-	20-2000mV peak to peak	20-200 mV peak to peak	mV/4-20 mA	mV/Pulse/4-20 mA
Frequency range	50-2500 Hz	30-1500 Hz	25-2500 Hz	0-2500 Hz	0-60 Hz (E Series) 0-500 Hz (F Series)
Supply voltage	-	5-30 Vdc	24 Vdc	24 Vdc	24 Vdc 110/240VAC
Outputs	mV	Open collector PNP/NPN selectable	4-20 mA, 2 wire current loop	4-20 mA, relay	Open collector pulse, 4-20 mA relay, Hart & Modbus
Operating temp	-	-10 to 55°C	-10 to 55°C	-10 to 65°C	-40 to 70°C
Rating	IP65, ATEX* (optional)	IP65	IP65	-	IP67

\* ATEX rating optional 

# CONFIGURATIONS

Ordering information for the Turbine Flow Meter

IC-LTM	Nominal size, flow range (based on H <sub>2</sub> O at 20°C)		
	Standard flow range		Extended flow range*
	Bore	l/min	m <sup>3</sup> /hr
06B	DN6 (6 mm)	0.4 - 10	-
012A	DN12 (12 mm)	1.8 - 20	-
016A	DN16 (16 mm)	3.6 - 36	-
016B	DN16 (16 mm)	6.6 - 66	-
020A	DN20 (20 mm)	13 - 133	-
025A	DN25 (25mm)	26 - 266	-
040A	DN40 (40 mm)	56 - 566	-
050A	DN50 (50 mm)	113 - 1133	6.8 - 68
080A	DN80 (80 mm)	13.5 - 135m <sup>3</sup> /hr	13.5 - 135
080B	DN80 (80 mm)	20 - 200m <sup>3</sup> /hr	20 - 200
100A	DN100 (100 mm)	27 - 270m <sup>3</sup> /hr	27 - 270
150A	DN150 (150 mm)	55 - 550 m <sup>3</sup> /hr	55 - 550
0Z0Z	Other sizes and flow rates on request		
Flow range: standard/extended (see above for values)			
S	Standard		
E	Extended (please contact us for details)		
Flow direction			
S	Single		
B	Bi-directional (From DN25 and above)		
Process connection			
A	BSPP (parallel) male		
B	BSPT (taper) male		
C	PN16		
D	PN40		
E	PN100		
F	ANSI 150 RF		
G	ANSI 300 RF		
H	ANSI 600 RF		
I	ANSI 900 RF		
J	ANSI 1500 RF		
K	Other on request (eg. PNXX, tri-clamp, NPT, RJT etc) (Refer to HBT Hygienic Flow Meter for more options)		
Bearings			
B	Ball Race		
T	Journal		
Z	Others available on request		
Max operating temperature			
S	Standard: -40 to 230°C		
H	High: -40 to 350°C		
Approvals			
0	General purpose		
1	ATEX Ex ia (Intrinsically Safe)		
2	ATEX Ex d / FM / CSA c-us		
Output/display			
0	Coil only		
P	IC-MV-PO pulsed output module		
A	IC-MV-AN analogue output module		
D	Flow transmitter / display (specify separately)		
Mounting of instrument			
0	No instrument		
C	Compact (locally mounted on flow sensor)		
R	Wall mounted, incl. bracket (up to 3m from sensor, please specify)		
Options			
0	None		
1	Specify options		



Contact us for dimensions of display fitting.  
\*Remote electronics for sizes up to DN25

## ORDER CODE EXAMPLE

IC-LTM 025A S S A B S 0 A C 0



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