

FMTL SERIES LIQUID TURBINE FLOW METER

FEATURES

- ◎ Available with hygienic type, food-grade flowmeter designed for measuring both conductive and non-conductive, non-corrosive liquids.
- ◎ Excellent repeatability, with short-term repeatability ranging from 0.05% to 0.2%, offering good sensitivity and stability.
- ◎ Operating temperature range: -20° C to 120° C; -20° C to 130° C optional.
- ◎ Suitable for mediums with a viscosity less than $5 \times 10^{-6} \text{ m}^2/\text{s}$.
- ◎ Wide measurement range: medium and large diameters up to 1:20, small diameters up to 1:10.
- ◎ Optional battery powered.
- ◎ Available in an insert-type design, ideal for large-diameter measurements, with continuous removal capability for easy installation and maintenance.



INTRODUCTION

The FMTL series liquid turbine flow meters feature high accuracy, good repeatability, simple structure, high pressure resistance, wide measurement range, compact size, lightweight, low pressure loss, long service life, simple operation, and easy maintenance. They are used for measuring the volumetric flow and cumulative volume of low-viscosity, non-corrosive, and clean liquids in closed pipelines. These flow meters are widely applicable in industries such as petroleum, chemical engineering, metallurgy, organic liquids, inorganic liquids, liquefied gas, urban gas networks, pharmaceuticals, food processing, and papermaking.

WORKING PRINCIPLE

When the measured liquid flows through the sensor, the rotor is subjected to force and begins to rotate. The rotation speed of the rotor is directly proportional to the average flow velocity in the pipeline. The rotor's movement periodically alters the magnetic reluctance of the magnetic circuit, causing the magnetic flux in the detection coil to vary periodically. This generates an induced electromotive force with the same frequency as the rotor's rotational frequency, which is then amplified, converted, and processed.

SPECIFICATIONS

Measuring medium	No impurities, low viscosity, no strong corrosive liquid
Nominal Diameter(mm)	DN15-DN200 (Flange connection) DN4-DN80 (Thread connection) DN4-DN200 (Clamp connection)

Accuracy	0.5%, 0.2%
Nominal Pressure	1.0MPa, 1.6MPa, 2.5MPa, 4.0MPa
Accuracy	±1%R, ±0.5%R, ±0.2% R(Customized)
Measurement Range Rate	1:10, 1:15, 1:20
Connection method	Flange, Thread, Clamp, Hygienic, Insert
Instrument material	304 stainless steel, 316L stainless steel
Medium Temperature(°C)	-20 ~ +120 °C
Ambient Conditions	Temperature: — 10~+55°C , Relative Humidity:5%~90% Atmosphere Pressure:86~106Kpa
Output Signal	Pulse, 4~20mA
Power Supply	Sensor: +12V DC, +24V DC (option) Transducer: +24V DC Scene display type meter: 3.2V Lithium
Signal Transmission Line	STVPV 3×0.3 (three wires), 2×0.3(two wires)
Transmission Distance	≤ 1000m
Signal Line Interface	Internal thread M20×1.5
Explode-proof Class	ExdIIBT6
Protection Class	IP65

MEASUREMENT RANGE AND WORKING

Nominal Diameter (mm)	Regular Flow rate (m3/h)	Expanding flow rate (m3/h)	Regular tolerance pressure(Mpa)	Special tolerance pressure(Mpa) (Flange connection)
DN4	0.04—0.25	0.04—0.4	6.3	12, 16, 25
DN6	0.1—0.6	0.06—0.6	6.3	12, 16, 25
DN10	0.2—1.2	0.15—1.5	6.3	12, 16, 25
DN15	0.6—6	0.4—8	6.3, 2.5(Flange)	4.0, 6.3, 12, 16, 25
DN20	0.8—8	0.45—9	6.3, 2.5(Flange)	4.0, 6.3, 12, 16, 25
DN25	1—10	0.5—10	6.3, 2.5(Flange)	4.0, 6.3, 12, 16, 25
DN32	1.5—15	0.8—15	6.3, 2.5(Flange)	4.0, 6.3, 12, 16, 25
DN40	2—20	1—20	6.3, 2.5(Flange)	4.0, 6.3, 12, 16, 25
DN50	4—40	2—40	2.5	4.0, 6.3, 12, 16, 25
DN65	7—70	4—70	2.5	4.0, 6.3, 12, 16, 25
DN80	10—100	5—100	2.5	4.0, 6.3, 12, 16, 25
DN100	20—200	10—200	2.5	4.0, 6.3, 12, 16, 25
DN125	25—250	13—250	1.6	2.5, 4.0, 6.3, 12, 16
DN150	30—300	15—300	1.6	2.5, 4.0, 6.3, 12, 16
DN200	80—800	40—800	1.6	2.5, 4.0, 6.3, 12, 16

ORDER FORMAT

FMTL - F15P16ME3LSCDDEX

Connection	Model	Code	Special requirement
Flange	F	Null	Non Explosion-proof
Clamp	C	EX	Explosion-proof
Thread	T		
Hygienic	H		

Nominal diameter	Code	Code	Display
DN4mm	4	D	With display
...	...	N	No display
DN200mm	200		

Nominal pressure	Code	Code	Power supply
2.5MPa	P25	D	24VDC
1.6MPa	P16	B	3.6V Lithium battery

Accuracy	Code	Code	Output signal
0.5%FS	M	C	4~20mA
1.0%FS	E	P	Pulse
		CH	4~20mA+HART
		C4	4~20mA+RS485

Turbine type	Code	Code	Impeller Material
Extended flow range	E	T	Stainless iron
Normal flow range	N	S	Duplex steel

Code	Housing material
S4	SS304
3L	SS306L

Example:

FMTL-F15P16ME3LSCDDEX, FMTL series liquid turbine flow meter, DN15mm flange installation, pressure 1.6MPa, accuracy 0.5%FS, extended flow range, SS306L housing material, duplex steel impeller material, 4~20mA output, power supply 24VDC with display meter, explosion proof type.