



FM15

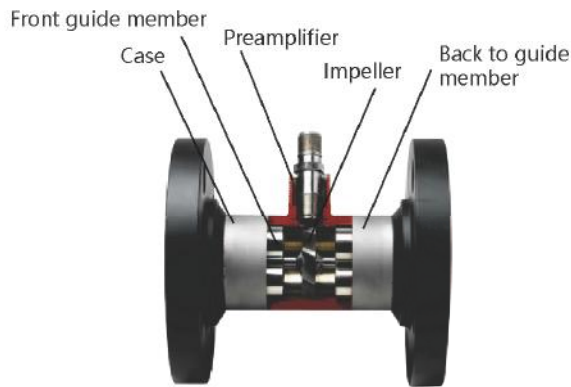
Turbine flow meter

Our turbine flowmeter is learned from Chinese and abroad advanced technology optimized design synthesis gas mechanics, fluid mechanics, electromagnetics theory and developed its own set of temperature, pressure, flow sensor and intelligent flow meter one machine operator a new generation of high-precision, high reliability gas precision measuring instruments, with excellent low and high pressure metering performance, a variety of signal output and low sensitivity to disturbance of the fluid, is widely used in natural gas, coal gas, liquefied petroleum gas, light alkyl metering gas and other gases.

Product series



Liquid turbine working principle

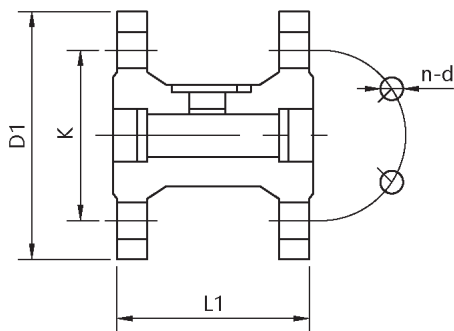


Shown for the turbine flowmeter sensor structure is simple, seen from the figure, when the measured liquid flows through the sensor, under fluid action, force impeller rotates, its rotational speed is proportional to the average velocity of the pipe, the periodic rotation of the impeller changing the magnetic reluctance value of the electrical converter. Consequent flux detection coil changes periodically, generate periodic EMF, namely electric pulse signal, after amplification, sent to display instrument to display.

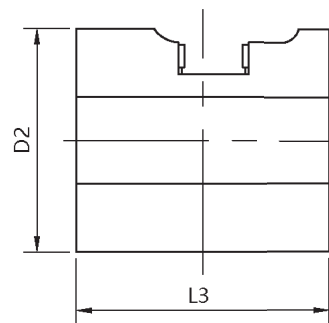
Liquid Turbine Features

1. High accuracy, normally, up to $\pm 1\%R, \pm 0.2\%R$.
2. Good repeatability, short-term repeatability of up 0.05% to 0.2%, because of good reproducibility, such as frequent calibration or on-line calibration to obtain high accuracy in trade settlement is the preferred flow meter.
3. Output pulse frequency signal, loss of the total measurement and computer connection, five zero drift, anti-interference ability.
4. Original pulse frequency range (10Hz ~ 1.5KHz), strong signal resolution.
5. Wide turndown ratio, maximum turndown ratio of up to 1:20
6. Compact and lightweight, easy installation and maintenance, flow capacity.
7. Suitable for high pressure measurement, the sensor body does not have to watch the opening, easily made high pressure type instrument.
8. Insertion can be made for large diameter measurement, pressure loss, low price, do not drying out, easy installation and maintenance.

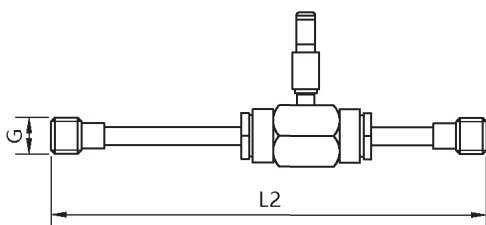
Liquid Turbine shape structure diagram



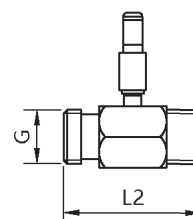
DN15~DN20 flange mounted turbine flow sensor figure



DN4~DN200 Clamp-on mounted turbine flow sensor figure



DN4~DN10 thread mounted turbine flow sensor figure (Straight pipes part included)



DN15~DN50 thread mounted turbine flow sensor figure (Straight pipes part excluded)

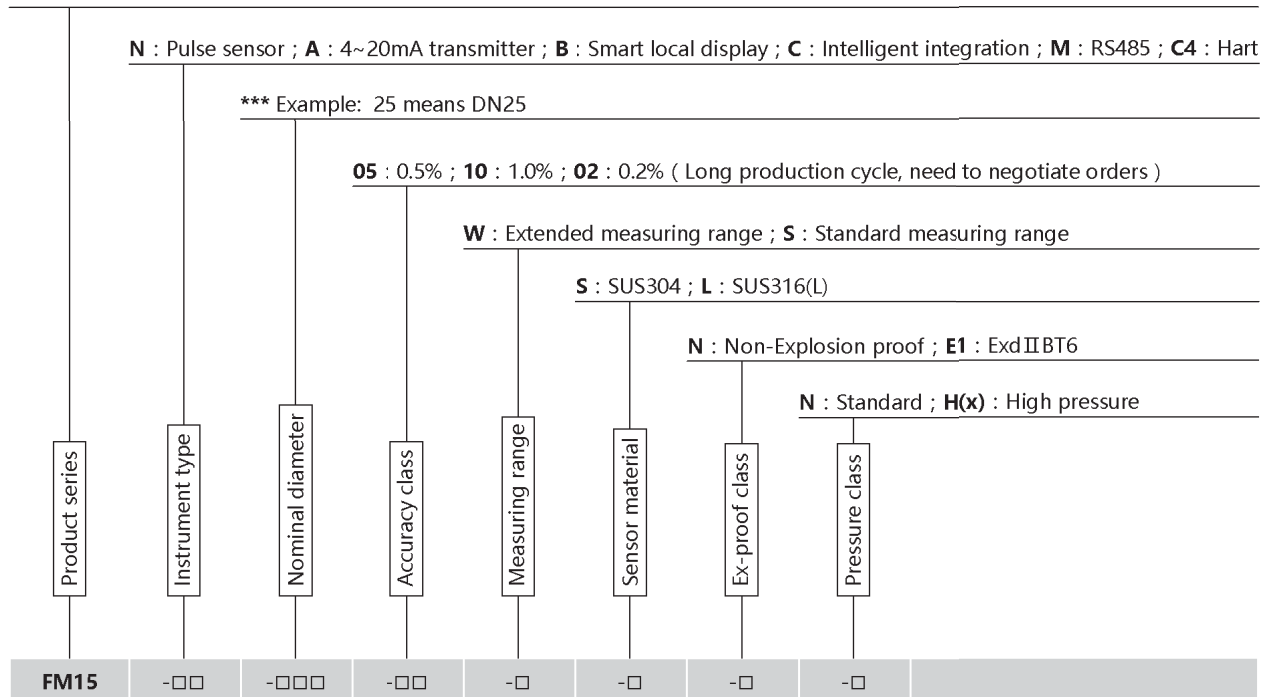
Nominal diameter (mm)	Flange connection					Thread connection		Clamp- connection	
	L1(mm)	D1(mm)	K(mm)	d(mm)	n(holes)	L2(mm)	G(male)	L3(mm)	D2(mm)
4						225	G1/2"	50	38
6						225	G1/2"	50	38
10						345	G1/2"	50	38
15	75	95	65	14	4	75	G1"	55	47
20	80	105	75	14	4	80	G1"	60	54
25	100	115	85	14	4	100	G1-1/4"	60	57
32	140	140	100	14	4	140	G2"	70	66
40	140	150	110	18	4	140	G2"	70	72
50	150	165	125	18	4	150	G2-1/2"	70	92
65	170	185	145	18	4			80	100
80	200	200	160	18	8			90	112
100	220	220	180	18	8			100	137
125	250	250	210	18	8			120	165
150	300	285	240	22	8			150	190
200	360	340	295	22	12			150	243

Technical parameters

Implementation of standards	Turbine flow sensor(JB/T9246-1999)		
Test specification	Turbine flow meter(JJG1037-2008)		
Measured medium	No impurities, low viscosity, highly corrosive liquid		
Instrument diameter & connection	4、6、10、15、20、25、32、40 using thread connecting (15、20、25、32、40) 50、65、80、100、125、150、200 With integrated clamping flange connection or flange connection (150、200) 250、300、350、400、500、600、700、800、900、1000、1100、 using plug-in connection		
Flange spec.	GB/T9113-2000, ANSI, JIS and other standards are customized		
Thread spec.	BSP (male), Female customized, Spherical thread, NPT,etc.		
Accuracy class	Pipeline : 1.5%、1%、0.5%、0.2% (Specially produced) Plug-in : 5%、2.5%		
Turndown ratio	1:10 ~ 1:20		
Test conditions	Calibration Device	Liquid flow meter method test device Static Quality Act of liquid flow calibration device	
	Environmental conditions	Ambient temperature	20°C
		Relative humidity	65%
Using condition	Medium temperature	T1(General type, standard)	-20°C ~ +80°C
		T2(Middle temperature, customized)	-20°C ~ +120°C
		T3(High temperature customized)	-20°C ~ +150°C
	Ambient temperature	-20°C ~ +60°C	Relative humidity
Atmosphere pressure	86KPa ~ 106KPa		

Liquid type turbine flow meter selection table

Turbine flow meter

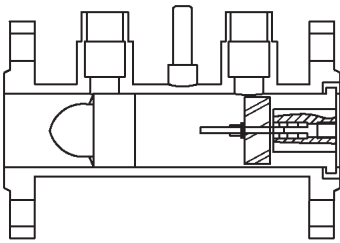


Measuring range and working pressure

Table 1

Nominal diameter (mm)	Type	Standard measuring range (m ³ /h)		Extending measuring range (m ³ /h)		Normal pressure rating (MPa)	Special high pressure (MPa)	Installation method
DN25	FM15-25 □	S	2.5~25	W	4~40	1.6	2.5, 4.0	Flange(thread)
DN40	FM15-40 □	S	5~50	W	6~60	1.6	2.5, 4.0	Flange(thread)
DN50	FM15-50 □	S1	6~65	W1	5~70	1.6	2.5, 4.0	Flange
		S2	10~100	W2	8~100			
DN65	FM15-65 □	S	15~200	W	10~200	1.6	2.5, 4.0	Flange
DN80	FM15-80 □	S1	13~250	W	10~160	1.6	2.5, 4.0	Flange
		S2	20~400					
DN100	FM15-100 □	S1	20~400	W	13~250	1.6	2.5	Flange
		S2	32~650					
DN125	FM15-125 □	S	25~700	W	20~800	1.6	2.5	Flange
DN150	FM15-150 □	S1	32~650	W	80~1600	1.6	2.5	Flange
		S2	50~1000					
DN200	FM15-200 □	S1	80~1600	W	50~1000	1.6	—	Flange
		S2	130~2500					
DN250	FM15-250 □	S1	130~2500	W	80~1600	1.6	—	Flange
		S2	200~4000					
DN300	FM15-300 □	S	200~4000	W1	130~2500	1.6	—	Flange
				W2	320~6500			

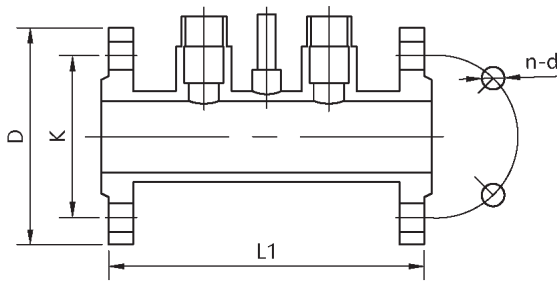
Gas turbine flow meter working principle



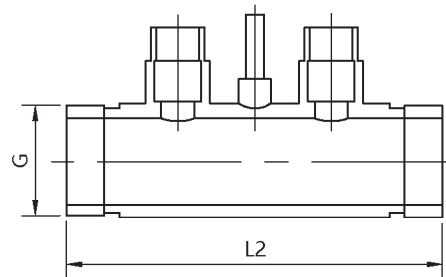
when gas flow into the flow meter, First, after the leading independent structure and accelerate the movement, under the action of the fluid, due to the turbine blades with the fluid flow at an angle, then the rotational torque generated by the turbine, the turbine starts rotating overcome resistance torque and friction torque, When all the torque balance, speed and stability, the turbine rotational speed and flow into a linear relationship between the magneto-resistive sensor is periodically changed by a magnet rotating disk letter, which induces a flow at both ends of the sensor is proportional to the frequency and volume of fluid pulse signal. When all the torque balance, speed and stability, the turbine rotational speed and flow into a linear relationship between the magneto-resistive sensor is periodically changed by a magnet rotating disk letter,

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Gas type turbine flow meter structure figure



DN25 ~ DN300 Flange connection type turbine flow sensor size



DN25 ~ DN50 Threaded connection type turbine flow sensor size

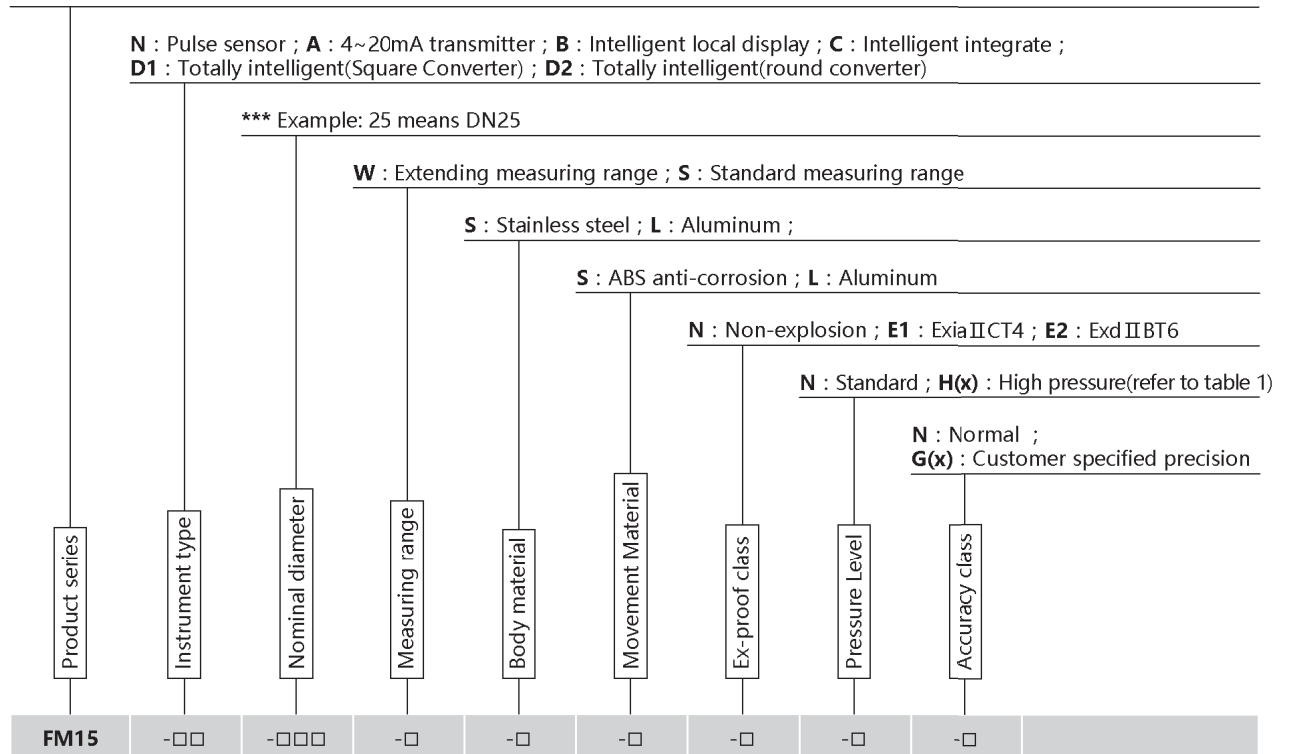
Nominal diameter (mm)	Flange connection						Thread connection		
	L1(mm)	D(mm)	K(mm)	d(mm)	n(holes)	Bolt Spec.	L2(mm) temp & pressure	L2(mm) normal	G(mm)
25	170	115	85	14	4	M12	170	170	G2"
40	200	150	110	18	4	M16	200	140	G2"
50	200	165	125	18	4	M16	-	220	G2-1/2"
65	240	185	145	18	4	M16			
80	240	200	160	18	8	M16			
100	300	220	180	18	8	M16			
125	240	250	210	18	8	M16			
150	450	285	240	22	8	M20			
200	500	340	395	22	12	M20			
250	500	405	335	26	12	M24			
300	300	460	410	26	12	M24			
350	350	520	470	26	16	M24			
400	400	580	520	30	16	M27			

Technical parameters

Implementation of standards	Measurement of gas flow in closed conduits - the turbine flow sensor (GB/T8940-2003)			
Test specification	Turbine flow meter (JJG1037-2008)			
Testing medium	No impurities, low viscosity, highly corrosive liquid			
Instrument diameter & connection	20、25、32、40、50、65、80、100、125、150、200、250、300、350、400 using flange connection , 20、25、32、40、50 using thread connection.			
Flange spec.	GB/T9113-2000, ANSI, JIS and other standards are customized			
Thread spec.	BSP (male), Female customized, Spherical thread, NPT,etc.			
Accuracy class	±1.5%R , ±1%R (need to customize)			
Turndown ratio	1:10-1:30			
Test conditions	Medium temperature	-30°C ~ +80°C	Atmosphere pressure	86KPa ~ 106KPa
	Ambient temperature	-20°C ~ +60°C	Relative humidity	5% ~ 90%

Gas type turbine flow meter selection table

Gas turbine flow meter



Note: other types of flow meters, please contact us or check the enterprise web site.