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# Metal Tube Float Flowmeter GMT100



## PRODUCT DESCRIPTION

Metal tube float flowmeter, also known as the "metal tube rotameter", is a measuring instrument commonly used in the industrial automation process management to measure the variable area flow. Being featured with characteristics of small size, wide application range, convenient usage, etc., it is designed for measuring the flows of liquids, gases and steam, especially applicable for measurement of low flow speed and small flow rate. Over the years, with its excellent property and reliability as well as preferable cost performance, the metal tube float flowmeter has been applied widely in a variety of industries, such as the petrochemical engineering, iron and steel, electric power, metallurgy, light industry, food, pharmacy, water treatment, etc.

## FUNCTIONAL FEATURES

- ◆ Designed for measurement of small caliber and low-speed medium
- ◆ With reliable performance, few maintenance and long service life
- ◆ Low requirement for the straight tube section
- ◆ Widely measure ratio: 10:1
- ◆ Dual-line display, instantaneous/ cumulative flow rates displayed at the field
- ◆ With a keyboard on the indicator for convenient operation and setting
- ◆ All in metal construction, designed for measuring corrosive medium of high temperature, high pressure and strong
- ◆ Non-contact magnetic coupling transmission
- ◆ Applicable for inflammable and explosive occasion
- ◆ Optional charging modes: DC power supply or battery power
- ◆ With the functions of data recovery, data backup and power failure protection
- ◆ Multiple parameters calibrating function

Disponibile filettato  
maschio o femmina



## TECHNICAL PARAMETER



Disponibile in  
versione orizzontale,  
aggiungere -HR alla  
fine del codice

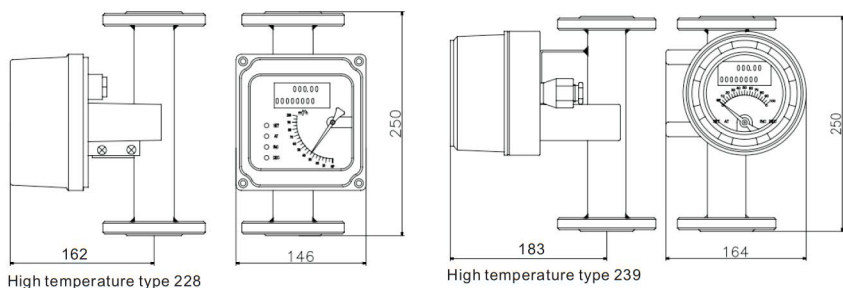
Caliber of flow meter	DN15, DN25, DN50, DN80, DN100, DN150 (For other caliber dimensions, please negotiate with the manufacturer.)
Range of flow	Liquid: 1.0~150000l/h Gas: 0.05~3000m <sup>3</sup> /h
Measure Ratio	10 : 1, 20 : 1 (special)
Precision	Grade 1.5, Grade 1.0 (special)
Pressure rating	DN15- DN25- DN50: 4.0MPa (Max: 20MPa) DN80- DN100- DN150: 1.6MPa (DN80: Max 10MPa; DN100: Max 6.4MPa; DN150: Max 4.0MPa)
Medium temperature	Standard: -30℃~+120℃, high temperature: 120℃~350℃
Power supply	24VDC (12~36VDC)
Output signal	4~20mADC (two-wire configuration); attached HART Protocol allowed
Output load	500Ω (24V power supply)
Environmental temperature	Local type: -40℃~120℃ Remote-control type: -30℃~60℃
Storage requirement	Temperature: -40℃~85℃      humidity: ≤85%
Connection mode	Flange connecting. Flange standard : GB/T9119-2000; User's appointment allowed
Cable interface	M20×1.5
Housing protection grade	Ip65
Mark of explosion-proof	Intrinsic safety type: Ex-ia IIC T6 explosion-proof type: Ex-d IIC T6
Pressure loss	See table of flow for detailed information
Viscosity of medium	DN15: η < 5mPa.s DN25: η < 250mPa.s DN50~DN150: η < 300mPa.s
Contact material	R1: 304, 1Cr18Ni9Ti; Ro: 316, 0Cr18Ni12Mo2Ti; RL: 316L, 00Cr17Ni14Mo2Ti; Ti: Titanium alloy; Rp: PTFE lining

**TECHNICAL PARAMETER**

**1. Product Category**

Metal Tube Float Flowmeters can be divided into 5 types according to the direction of liquid, and each type also be classified into the standard type, high-temperature type, jacket type and so on. All types will be respectively described below.

1.1 Vertical installation type

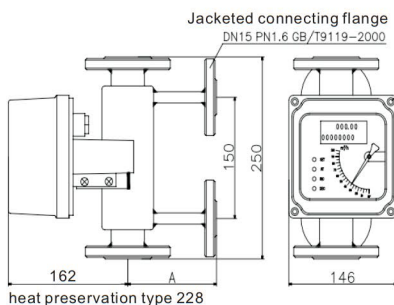


High temperature type 228

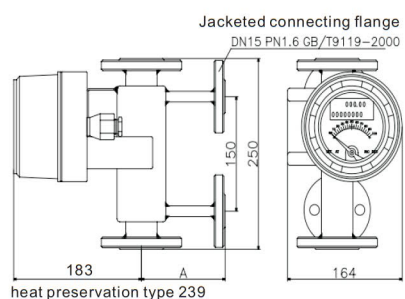
High temperature type 239

Standard Type M4 Indicator  
High-temperature type

Standard Type M5 Indicator  
High-temperature type



heat preservation type 228



heat preservation type 239

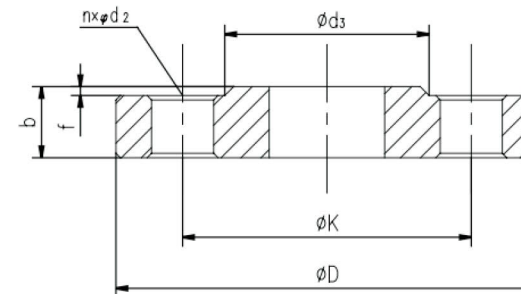
Cooling Jacket Type M4 Indicator  
Normal-temperature type

Cooling Jacket Type M5 Indicator  
Normal-temperature type

Caliber	DN15	DN25	DN50	DN80	DN100	DN150	DN200
A	100	120	135	150	160	40	200
Weight of standard type (kg)	5.0	6.5	10	16	17	35	50
Weight of jacket type (kg)	7.5	9.5	13	19	20	40	55

**2. Flange dimensions**

For the standard type of GMR Series Metal Tube Float Flowmeters which adopts GB/T9119-2000 Flange Standard, refer to Figure 16 as below. See Table 6 for specific dimensions. Other flange standards shall be subject to customers' requirements.



Outline Dimension of Flange

China National Standard Flange Plate (GB/T9119—2000)

DN/PN	D	K	d <sub>3</sub>	b	f	n	d <sub>2</sub>
15/40	95	65	46	14	2	4	14
25/40	115	85	65	16	2	4	14
50/40	165	125	99	20	2	4	18
80/16	200	160	132	20	2	8	18
100/16	220	180	156	22	2	8	18
125/16	250	210	184	22	2	8	18
150/16	285	240	211	24	2	8	22

American National Standard Flange Plate (ANSI B 16.5 150lb)

DN	D	K	d <sub>3</sub>	b	f	n	d <sub>2</sub>
1/2"	88.9	60.5	35.1	11.2	1.6	4	15.7
1"	108.0	79.2	50.8	14.2	1.6	4	15.7
2"	152.4	120.7	91.9	19.1	1.6	4	19.1
3"	190.5	152.4	127.0	23.9	1.6	4	19.1
4"	228.6	190.5	157.2	23.9	1.6	8	19.1
5"	254.0	215.9	185.7	23.9	1.6	8	22.4
6"	279.4	241.3	215.9	25.4	1.6	8	22.4

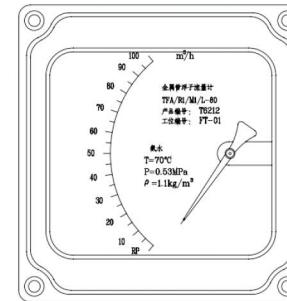
German National Standard Flange Plate (DIN2501)

DN/PN	D	K	d <sub>3</sub>	b	f	n	d <sub>2</sub>
15/4.0	95	65	46	16	2	4	14
25/4.0	115	85	68	18	2	4	14
50/4.0	165	125	102	20	3	4	18
80/1.6	200	160	138	20	3	4	18
100/1.6	220	180	162	20	3	8	18
125/1.6	250	210	188	22	3	8	18
150/1.6	285	240	218	22	3	8	22

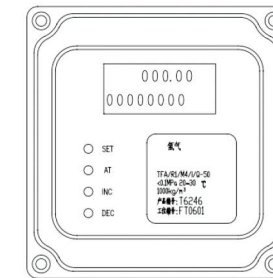
**ELECTION OF INDICATOR**

Users can select local display type, electric transmissible type, intrinsic safety type, explosion-proof type or HART Protocol attached type according to the practical requirements at the field. For detailed functional descriptions of all indicators, refer to the following table.

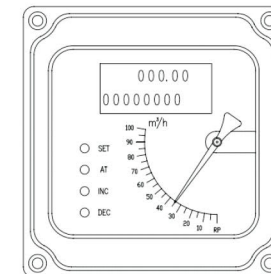
Type of Indicator	Functional Description of Indicator
M1 Type	Local pointer indicates the flow rate without power supply and electrical transmission of 4~20mA; optional flow alarm apparatus; regarding the dial scale, instantaneous flow value or percent-scale value are provided for choice.
M3 Type	Local digital displaying, battery powered, without electrical transmission of 4~20mA, non-explosion-proof. LCD panel displays both the instantaneous and cumulative flow rates. Parameters can be checked or modified by pressing keys on the keyboard. Batteries have a service life of 6 months. Change the batteries (Battery Model No.: ER26500, 3.6V, 7.5AH, -55°C~85°C) when the screen displays a "T" letter.
M4 Type	Electric transmissible and intrinsically safe design; explosion-proof mark: Exd II CT6; optional HART protocol function; DC24 power supply; the pointer indicates instantaneous flow rate and digitally displays instantaneous and accumulated flow rates; two-wire configuration with output of 4~20mA; 4 keys on the panel which are used to check and modify internal parameters.
M5 Type	Electric transmissible and explosion-proof type design; explosion-proof mark: Exd II CT6; optional HART protocol function; DC24 power supply; pointer indicates the instantaneous flow rate and digitally displays instantaneous flow rate and accumulated flow rates; two-wire configuration with output of 4~20mA; 4 keys on the panel which are used to check and modify internal parameters.



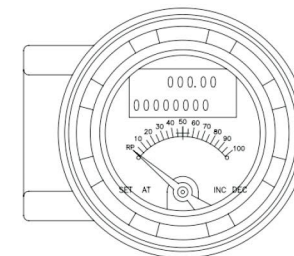
M1



M3



M4



M5



Meccanico Explosion-proof



## Flow Range

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Diameter ( mm )	Flow Range Code	Flow Range			Pressure Loss kpa		
		Water L/h		Air m <sup>3</sup> /h	Water		Air
		Normal Type	Ex-Proof Type	Normal Type , Ex-Proof Type	Normal Type	Ex-Proof Type	Normal Type , Ex-Proof Type
15	1A	2.5-25		0.07-0.7	6.5		7.1
	1B	4.0-40	2.5-25	0.11-1.1	6.6	5.5	7.2
	1C	6.3-63	4.0-40	0.18-1.8	6.6	5.5	7.3
	1D	10-100	6.3-63	0.28-2.8	6.6	5.6	7.5
	1E	16-160	10-100	0.48-4.8	6.8	5.6	8
	1F	25-250	16-160	0.7-7.0	7	5.8	10.8
	1G	40-400	25-250	1.0-10	8.6	6.1	10
	1H	63-6300	40-400	1.6-16	11.1	7.3	14
25	2A	100-1000	63-6300	3-30	7	5.9	7.7
	2B	160-1600	100-1000	4.5-45	8	6	8.8
	2C	250-2500	160-1600	7-70	10.8	6.8	12
	2D	400-4000	250-2500	11-110	15.8	9.2	19
40	4A	500-5000	400-4000	12-120	10.8	8.6	9.8
	4B	600-6000	500-5000	16-160	12.6	10.4	16.5
50	5A	630-6300	600-6000	18-180	8.1	6.8	8.6
	5B	1000-10000	630-6300	25-250	11	9.4	10.4
	5C	1600-16000	1000-10000	40-400	17	14.5	15.5
80	8A	2500-25000	1600-16000	60-600	8.1	6.9	12.9
	8B	4000-40000	2500-25000	80-800	9.5	8	18.5
100	10A	6300-63000	4000-40000		15	8.5	
150	15A	20000-100000			19.2		



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**Sanitary Variable  
Area Flow Meter**

**Thread Type Variable  
Area Flow Meter**

**Digital Variable  
Area Flow Meter**