



## Measuring Range

for water, 2.5--100000L/h (20 ) ; for air, 0.07--1800m<sup>3</sup>/h(0.1013MPa, 20 ).

## Applicable Fluid Viscosity

DN15 : < 5mPa.s ( FZ15.1 , FZ15.2 , FZ15.3 ) ;

< 30mpa.s ( FZ15.4 , FZ15.5 , FZ15.6 , FZ15.7 , FZ15.8 ) ;

DN25: < 250mPa.s ;

DN50-100: < 300mPa.s ;

## Model Selection Table

Model	Code		Code meaning
MTF			Intelligent metal tube float flowrate transmitter
	1		PN : 1.6MPa
	2		PN : 2.5MPa
	3		PN : 4.0MPa
	4		PN : 6.3MPa
	015		DN15
	025		DN25
	050		DN50
	080		DN80
	100		DN100
	A		Wetted material : 1Cr18Ni9Ti
	B		Wetted material : 0Cr17Ni12Mo2
	C		Wetted material : Teflon ( PTFE)
			Other materials: on request
	/		
	i		Intrinsically safe type
	d		Isolating explosion type
	B		With isolation jacket
	W		Without isolation jacket
	D		Fluid temperature : -35 ~ 100° C
	G		Fluid temperature : 200° C
	Z		With damp type
	W		Without damp type
	S		Horizontal mounting type
	C		Vertical mounting type
MTF-			

Model selection example: MTF-1025A-dWDWC. Intelligent metal tube float flowrate transmitter, flange is PN1.6 , DN25 , wetted material is 1Cr18Ni9Ti , isolating explosion type, without insulating jacket, Operating temperature is -50 ~ 100 , vertical mounting type.

## Main Specifications and Parameters Table

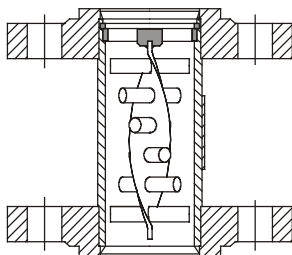
Nominal diameter	Float code	Flowrate value(Water L/h; air m <sup>3</sup> /h)			Pressure loss kPa		
		Water calibration		Air calibration	Water calibration		Air calibration
		Float material		Float material	Float material		Float material
		1Cr18Ni9Ti	PTFE	1Cr18Ni9Ti	1Cr18Ni9Ti	PTFE	1Cr18Ni9Ti
DN15	FZ15.1	25		0.7	6.5	-	7.1
	FZ15.2	40	25	1.1	6.5	5.5	7.2
	FZ15.3	60	40	1.8 6.6	6.6	5.5	7.3
	FZ15.4	100	60	2.8	6.6	5.6	7.5
	FZ15.5	160	100	4.0	6.8	5.6	8.0
	FZ15.6	250	160	7.0	7.2	5.8	10.0
	FZ15.7	400	250	10.0	8.6	6.1	10.8
	FZ15.8	600	400	16.0	11.1	7.3	14.0
DN25	FZ25.1	1000	600	30	7.0	5.5	7.7
	FZ25.2	1600	1000	45	8.0	5.6	8.8
	FZ25.3	2500	1600	70	10.8	6.4	12.0
	FZ25.4	4000	2500	110	18.8	6.8	19.0
	FZ25.5	6000	-	180	20.0	-	25.0
DN50	FZ50.1	6000	4000	180	8.1	6.8	8.6
	FZ50.2	10000	6000	300	11.0	8.8	10.4
	FZ50.3	16000	10000	600	17.0	13.7	15.5
DN80	FZ80.1	25000	16000	1000	8.1	6.3	8.0
	FZ80.2	40000	25000	1200	9.5	7.2	14.0
DN100	FZ100.1	60000	40000	1800	10.0	7.9	25.0
	FZ100.2	100000			15.0		

Note: calibration operating conditions: T=20 , P=0.1013MPa.

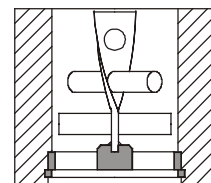
## The Application of The Strainer

When the liquid contains solid particles, the strainer should be installed in the front of the upper stream straight pipe section of the meter to get rid of the particles. When the liquid contains magnetic particles, the magnet strainer manufactured in our company should be purchased with the meter to protect the meter's accuracy and prolong its service life.

The material of the magnet strainer (see figure3): 1Cr18Ni9Ti, 00Cr17Ni14Mo2, PTFE or other material on request.



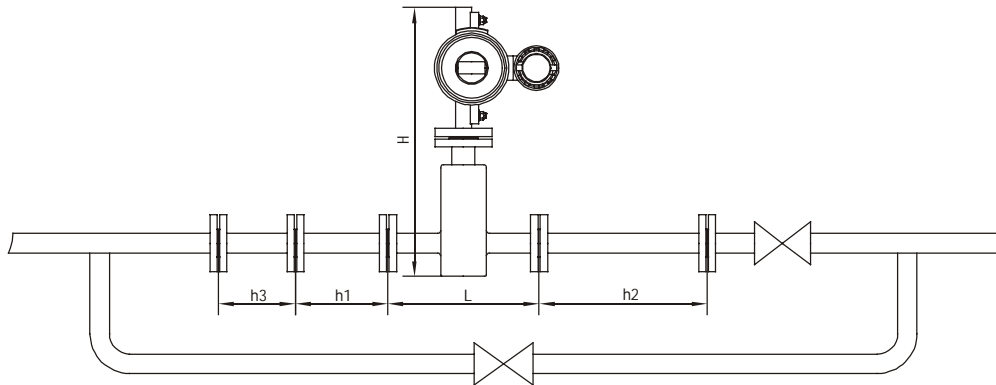
Type A: Flange connected/ Total length 100mm



Type B: Non-flange connected/ Total length 50 mm

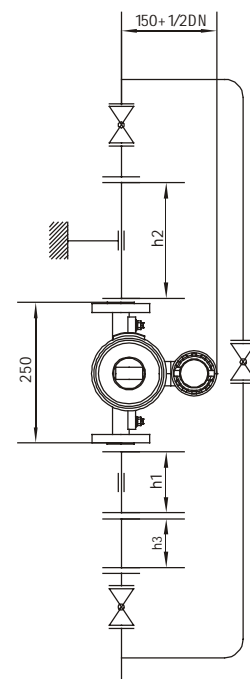
## Mounting dimensions (recommended)

Mounting dimensions for horizontally mounting			
Diameter	dimensions	H	L
DN15		330	250
DN25		475	250
DN50		510	300
DN80		535	300
DN100		570	300



Horizontally mounting

Fore straight pipe section	H1=5DN
Rear straight pipe section	H2=250mm
Magnet strainer	H3=100mm



Vertically mounting

**Attached table 1: Density of float materials**

Material	Density $s(g/cm^3)$
1Cr18Ni9Ti, 00Cr17Ni14Mo2	7.8
Teflon (PTFE)	3.4

**Attached table2: The safety barrier recommended**

Dandong Top Electronics Instrument Co., Ltd	TP5041-Ex TP5045-Ex
Shanghai Institute of Process Automation Instrumentation	GS8041-Ex GS8037-Ex
British MTL Company	MTL3046B MTL5042
Germany P+F Company	KFD2-STC3-Ex1
TURCK Company	MK33-11Ex-Hli/24VDC

**MTF intelligent metal tube float flowrate transmitter technical data table**

Fluid	
Operating pressure ( for liquid, may not to fill in )	
Operating temperature ( for liquid, may not to fill in )	
Fluid density	
Manufacturing range	
Flange standard	

**Notices for Purchasing**

For those special requirements that are beyond the specifications in the above table, please note them out.

Calculations before purchasing

1. For measuring gases

- a. Volumetric flow under the normal state  $Q_{vn}$  ( $Nm^3/h$ , 0 , 0.1013MPa), the coefficient  $F_n$  is needed to be calculated:

$$F_n = \sqrt{\frac{\rho_1 \cdot P_2 \cdot T_1}{\rho_2 \cdot P_1 \cdot T_2}}$$

1: The density of the medium( $kg/m^3$ ) under the normal state (0 )

$P_1$ : The absolute pressure of the medium (MPa)

$T_1$ : the temperature of the medium (K)

2= $1.293kg/m^3$ ;  $P_2=0.1013MPa$ ;  $T_2=293.15K$ ;

With  $F_n$ , the flowrate during the calibration with air can be calculated.

$Q_v(\text{air})=F_n \cdot Q_{vn}$

- b. The volumetric flowrate under the actual state  $Q_{va}$ , the coefficient  $F_v$  is needed to be calculated:

$$F_v=0.932 \sqrt{\frac{\rho_1 \cdot P_1 \cdot T_1}{\rho_2 \cdot P_2 \cdot T_1}}$$

So, the flowrate during the calibration with air can be calculated.

$Q_v(\text{air})=F_n \cdot Q_{va}$

- c. The gas mass flow  $Q_m$ , the coefficient  $F_m$  is needed to be calculated:

$$F_m = \frac{1}{1.293} \sqrt{\frac{\rho_2 \cdot P_2 \cdot T_1}{\rho_1 \cdot P_1 \cdot T_2}}$$

So, the flowrate during the calibration with air can be calculated.

$$Q_v(\text{air}) = F_m \cdot Q_m$$

With the calculated result, the measuring range and the diameter can be determined according to the main specification and parameter table.

2. For measuring liquid

a. the liquid volumetric flowrate  $Q_{va}$ , with the beneath formula, the coefficient  $F_m$  can be calculated:

$$F_v = \sqrt{\frac{\langle \rho_s - 1 \rangle \cdot \rho_a}{\rho_s - \rho_a}}$$

With the coefficient  $F_v$ , the flowrate  $Q_v$  during calibration with water can be calculated:

$$Q_v(\text{water}) = F_v \cdot Q_{va}$$

b. the liquid mass flowrate  $Q_m$ , with the beneath formula, the coefficient  $F_m$  can be calculated:

$$F_m = \sqrt{\frac{\rho_s - 1}{\langle \rho_s - \rho_a \rangle \cdot \rho_a}}$$

The corresponding water flowrate  $Q_v$  can be calculated

$$Q_v(\text{water}) = F_m \cdot Q_m$$

s is the density of the float ( $\text{g/cm}^3$ )

With the calculated result above, the measuring range and the diameter can be determined according to the main specification table and parameter table.

Note:

1. When the needed meter is different from the standard type or needs special design with special parameters, please contact us.
2. If the products have been upgraded or the model selection method has been changed for some reasons, please refer to the newest information on the products at our website.