

THERMAL MASS FLOW METER TM500



Features

- Real mass flowmeter, no temperature and pressure compensation for gas flow measurement, convenient and accurate measurement. The mass flow or standard volume flow of the gas can be obtained.
- Wide range ratio, can measure the gas flow rate as high as 100Nm³/s as low as 0.1Nm³/s.
- Digital design. Overall digital circuit measurement, accurate measurement and easy maintenance.
- Compatible for oxygen, nitrogen, hydrogen, compressed air and other clean single medium.

Technical Data

Measuring principle : Thermal mass flow meter

Gas types : Compressed air, Oxygen, Nitrogen, Hydrogen, etc. (Except the acetylene)

Display indicator : LCD

Velocity measuring range : 0.1...100 Nm³/s

Flow range : See the table (page 2)

Flow unit : Nm³/hr, Nm³/min, NL/min, t/h, t/min, kg/h, kg/min

Cumulative flow unit : Nm³, NL, t, kg

Accuracy : ±1.5% of full scale (within flow rate table)

Response time : 1 second

Pipe Diameter : DN15...DN400

Process Connection : Thread, Flange, Clamp

Pressure resistance : 16 bar (standard)

Pressure resistance (option) : 25, 40 bar (for Flange)

Medium Temperature : -20...+250°C (Option : -20...+350°C)

Ambient Temperature : -20...+45°C

Ambient Pressure : 86...106 kPa

Relative Humidity : 5...90 %RH

Signal Output : Pulse, 4-20mA, RS-485, HART (Please see ordering code)

Power Supply : 220Vac or 24Vdc

Power consumption : ≤18W

Material : 304 Stainless Steel (Option : 316 Stainless Steel)

Protection class : IP65

Approval : Ex d II T6 Gb (Option)

Application



Automotive industry



Automotive industry



Chemical Monitoring

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Flow rate and Pressure rating

Nominal Diameter		Precision air flow range (Nm ³ /hr)		Measurable air flow range (Nm ³ /hr)		Standard Pressure (all type)	**Customized Pressure (Flange)
mm	inch	Min	Max	Min	Max	MPa	MPa
15	1/2	4	40	0.06	63.62	1.6	2.5, 4.0,
20	3/4	6	60	0.11	113.10	1.6	2.5, 4.0,
25	1	10	100	0.18	176.71	1.6	2.5, 4.0,
32	1-1/4	17	170	0.29	289.53	1.6	2.5, 4.0,
40	1-1/2	27	270	0.45	452.39	1.6	2.5, 4.0,
50	2	36	360	0.71	706.86	1.6	2.5, 4.0,
65	2-1/2	72	720	1.19	1194.59	1.6	2.5, 4.0,
80	3	108	1080	1.81	1809.56	1.6	2.5, 4.0,
100	4	168	1680	2.83	2827.43	1.6	2.5, 4.0,
125	5	264	2640	4.42	4417.86	1.6	2.5, 4.0,
150	6	378	3780	6.36	6361.73	1.6	2.5, 4.0,
200	8	600	6000	11.31	11309.73	1.6	2.5, 4.0,
250	10	1000	10000	17.67	17671.46	1.0	1.6, 2.5, 4.0,
300	12	1500	15000	25.45	25446.90	1.0	1.6, 2.5, 4.0,
350	14	2100	21000	34.64	34636.06	1.0	1.6, 2.5, 4.0,
400	16	2700	27000	45.24	45238.93	1.0	1.6, 2.5, 4.0,

The flow rate in standard condition: The flow rate air is in the condition of 20°C and 101.325kPa

* The clamp and thread connection can resist the maximum pressure 1.6 MPa (16 bar).

**For customized pressure of flange type. Please ask the sales department for special options.

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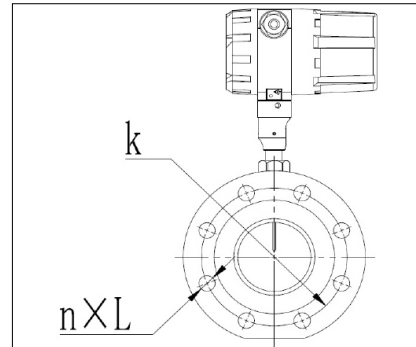
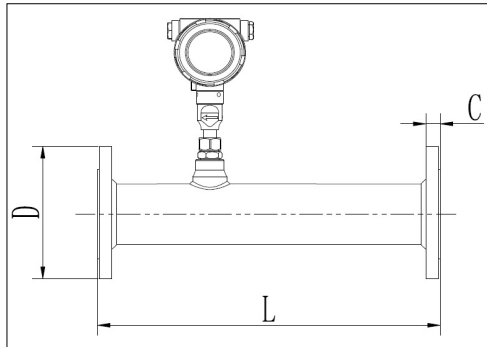
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Installation Dimensions

- Flange connection dimensions



*DIN flange PN16

Diameter (mm)	Flange outer diameter (mm)	Pipeline length (mm)	Flange Thickness (mm)	Screw hole (mm)	Center hole (mm)
DN	D	L	C	n x L	k
15	95	280	65	4 x 14	65
20	105	280	75	4 x 14	75
25	115	280	85	4 x 14	85
32	140	350	100	4 x 18	100
40	150	350	110	4 x 18	110
50	165	350	125	4 x 18	125
65	185	400	145	4 x 18	145
80	200	400	160	8 x 18	160
100	220	500	180	8 x 18	180



**Note : product has many type of flange.
please see on ordering table.*

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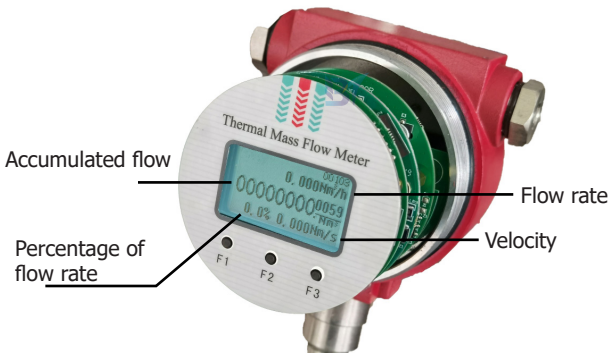
Informations

● **Display indicator :**

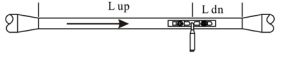

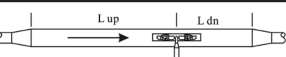
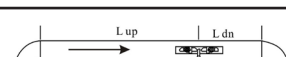


Thermal mass flow meter has intergal display. There are flow rate, Accumulated flow, Percentage of flow rate and velocity

● **Material of flow meter :**

The standard material of flow meter is "**Stainless steel 304**". Further more, customer can change the material to be "**Stainless Steel 316**" in optional.



Installation guide

Type of pipe characteristic and the sensor location	Upstream	Downstream
	Distance before the center of the sesnor (L up)	Distance After the center of the sesnor (L dn)
	15 x diameter	5 x diameter
	15 x diameter	5 x diameter
	15 x diameter	5 x diameter
	20 x diameter	5 x diameter
	35 x diameter	5 x diameter
	50 x diameter	5 x diameter

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Ordering Code

Example Order : TM500-A-B-C-D-E-F-G	
A : Pipe Diameter	
xx : DN15...DN400	
B : Display and Output Feature	
DA : Display + 4-20mA + pulse + RS485	
DR : Remote Display (10 m cable) + 4-20mA + pulse + RS485	
DRxx : Remote type with special cable range (max. 30 meters) + display + pulse + 4-20mA + RS485 <i>Example : DR25 is Remote type with 25 meters of cables</i>	
DH : Display + 4-20mA + pulse + RS485 + HART	
C : Process Connection **	
F : Flange installation (standard : DIN flange PN16)	
T : Thread installation (only DN15...DN50)	
C : Clamp installation (only DN15...DN50)	
D : Power supply	
P1 : 24 Vdc	
P2 : 220 Vac	
E : Body Material (option)	
- : Stainless Steel 304	
S16 : Stainless Steel 316	
F : Fluid temperature (option)	
- : -20...+250°C	
H : -20...+350°C	
G : Explosion Proof (option)	
- : Non-Explosion proof	
EX : Ex d II T6 Gb	

**Special Process Connection

FD25 : Flange DIN PN25 | **FD40** : Flange DIN PN40

FA150 : Flange ANSI 150 | **FA300** : Flange ANSI 300 | **FA600** : Flange ANSI 600

FJ10 : Flange JIS 10K | **FJ20** : Flange JIS 20K | **FJ30** : Flange JIS 30K

Example Ordering : TM500-25-DA-F-P1-S16

Description : Thermal mass flow meter pipe diameter DN25, have monitor and output signal is 4-20 mA + pulse + RS485, Flange DIN PN16 connection, Body Material is Stainless Steel 316, resistance liquid temperature -20...+250°C

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Accessories (options)

FDI-7600 : Flow totalizer display



Features

- Display indicator for flow meter, able to record the totalizer and flow rate together
- Built-in memory for recording data
- There is a software for management data, graphing, export data to CSV file

DL7 : data logger



- Up to 42 input/output signals
- Up to 100 displayed channels
- 2 GB internal data memory, advanced data logging
- 7" touchscreen colour LCD
- Ethernet port, Modbus TCP Client/Server
- RS-485 port, Modbus RTU Master/Slave

IoT-WiFi : IoT module for wifi version



Feature

- Wi-Fi are available
- The IoT module can receive a signal from Instrument for monitoring in real-time , support adjustment
- The IoT module can receive 4 analog and 1 digital signal from industry instrument.
- Application can be widely used in industrial automatic control, base station/computer room monitoring, environmental monitoring, water conservancy project, power industries, agriculture, etc.

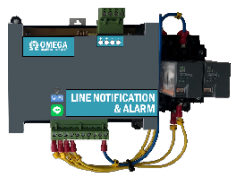
IoT-GPRS/4G: IoT module for 4G version



Feature

- 4G are available
- The IoT module can receive a signal from Instrument for monitoring in real-time , support adjustment
- The IoT module can receive 4 analog and 1 digital signal from industry instrument.
- Application can be widely used in industrial automatic control, base station/computer room monitoring, environmental monitoring, water conservancy project, power industries, agriculture, etc.

LINE : Line alert



Feature

- Automatically report status when it starts working.
- The messages are available to be created in Thai and English languages freely
- The notification can be alarmed max. 9 times continuously
- The user can be maximum 500 users in LINE group for receiving a notification
- Compact, modern and comfortable for monitoring
- The equipment can be connected with every controller or PLC which signal out a relay

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