



TECHNICAL GUIDANCE

MIDDLE TO LARGE CONNECTION AND LARGE
FLOW RATE MEASUREMENT VERSION

TF-1161 / 1261

MINI THERMAL MASS FLOWMETER

OUTLINE

In addition to TF-1000 series Mini Thermal Flowmeter (Large diameter version), a new flowmeter (Mid to large diameter version) for large flow rate measurement has been announced.

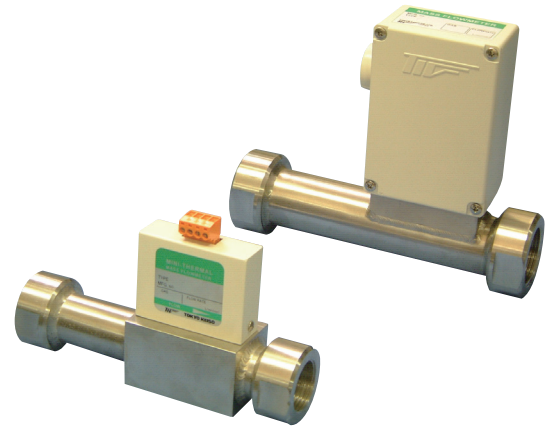
The precise measurement of mass of the various gases can be made without being affected by the change in the operating pressure and temperature.

FEATURES

- ❑ Lineup of product corresponding to mid to large diameter and large flow rate measurement
Available in 25mm (1") to 80mm (3"). This product can be used in such wide fields as general process line, air and nitrogen gas supply line etc.
- ❑ Measurement system
Thermal mass flow measurement can be made without being influenced by the change in operating pressure and temperature.
- ❑ Simple and compact structure and easy maintenance
- ❑ Flow conditioner built-in. No straight run is required, and the piping layout can be freely made.
- ❑ Whole quantity passage detection system, and pressure loss is very small.
- ❑ Excellent in durability
Excellent durable sensor supported by old know-how is used.
- ❑ High speed response
High speed response - 90% within 1.2 second

STANDARD SPECIFICATIONS

Model	TF-1161, TF-1261	
Measuring fluid	Air, Nitrogen	
Scale range	Min. 0 to 80m ³ /h (nor) (25mm) Max. 0 to 1500m ³ /h (nor) (80mm)	
Gas press.	-0.07 to 1.0MPa	
AMB & Gas temp.	0 to 50°C	
Accuracy	±2.0% F.S. (at 25°C)	
Rangeability	1:20	
Temp change effect	Within ±0.1% F.S./°C	
Press change effect	Within ±0.1% F.S./0.1MPa	
Response	1.2sec. for 90%	
Material	Tube	SUS316 or SUS304
	Sensor	SUS316, Glass, PT and CTFE
	Seal	FKM
Output	DC4 to 20mA (Load resistance Max.450 ohm)	
Power supply	DC24V±10%	
Power consumption	4W	
Construction / Housing material	TF-1161	Indoor use (Non-waterproof) / SPCC
	TF-1261	Waterproof (IP65 equivalent) / ADC12
Electric connection	TF-1161	Connector for solderless terminal (Pin type)
	TF-1261	M3 screw terminal
Process connection	Thread	Rc (1" to 2")
	Flange	JIS10K (25 to 80mm)



FULL SCALE AND PRESSURE LOSS

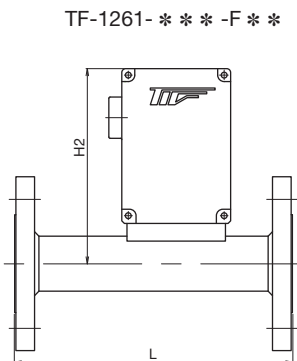
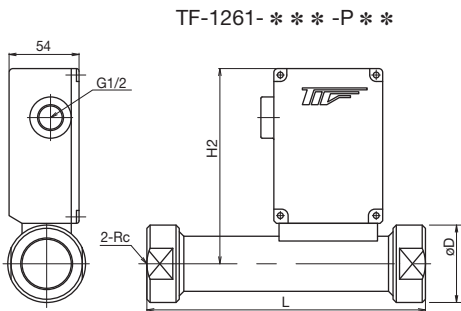
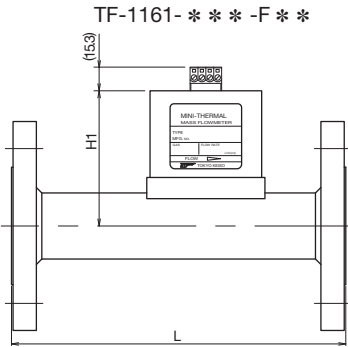
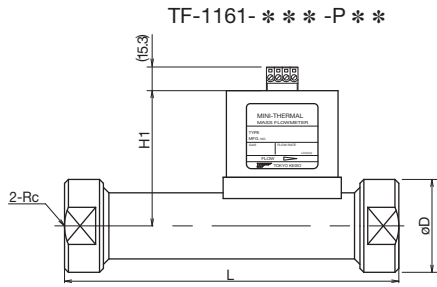
Connection	Full scale	m ³ /h(nor)	Pressure loss* kPa
25mm	Min.	80	32
	Max.	160	
32mm	Min.	150	39
	Max.	300	
40mm	Min.	200	38
	Max.	400	
50mm	Min.	300	32
	Max.	600	
65mm	Min.	500	33
	Max.	1000	
80mm	Min.	700	35
	Max.	1500	

*Pressure loss (at 1atm, 25°C) at the time of maximum flow in the maximum range; The rough value of the pressure loss is proportional to the square of flow rate and is in inverse proportion to the pressure.

MODEL CODE

TF-1	6	-	-	-	-	-	Contents
Construction	1	-	-	-	-	-	Non-waterproof
	2	-	-	-	-	-	Waterproof
Output	1	-	-	-	-	-	DC 4 to 20 mA
Full scale ow rate (*)	-	A	B	C	-	-	Flow rate rating
Material	4	-	-	-	-	-	SUS304 (Available only for flange connection)
							6
Connection rating	P	-	-	-	-	-	Rc thread
							F
Connection size (*): Full scale ow rate = (AB)×10 ^c m ³ /h (nor) (Ex.) 80 m ³ /h (nor) →800 400 m ³ /h (nor) →401 1500 m ³ /h (nor) →152	25	25 mm (1")					
	32	32 mm (1 1/4")					
	40	40 mm (1 1/2")					
	50	50 mm (2")					
	65	65 mm (2 1/2")					
	80	80 mm (3")					

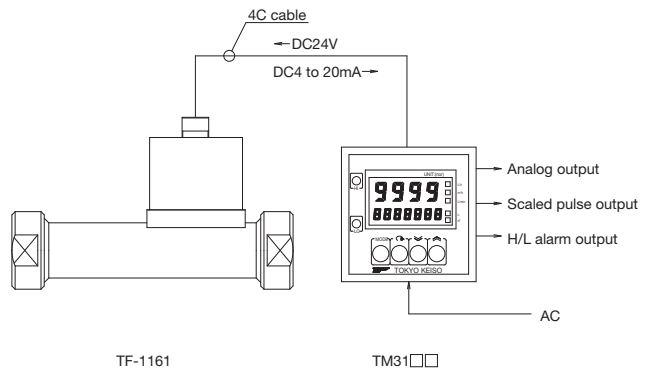
DIMENSIONS



DIMENSION TABLE

Size	L	øD	TF-1161			TF-1261		
			Height	Mass (kg)		Height	Mass (kg)	
			H1	Thread	Flange	H2	Thread	Flange
25mm	195	50	79	2.1	3.8	143	2.5	4.2
32mm	215	60	87	2.0	4.3	151	2.4	4.7
40mm	230	65	90	2.1	4.5	154	2.5	4.9
50mm	270	75	96	2.8	5.6	160	3.2	6.0
65mm	290	—	104	—	8.2	168	—	8.6
80mm	320	—	111	—	9.2	175	—	9.6

APPLICATION



CAUTION FOR INSTALLATION

- Required straight run at upstream is 10d and Downstream is 5d, and make use of the piping in the same diameter as the flowmeter. (d: Diameter)
- Rc screw connection is to be used for pipe less than Sch.80.
- As for the pipe in the different diameter from that of the flowmeter, make it ±1 size after installing the necessary straight run in the same connection as the flowmeter.
- Install valves downstream if any.
- Before installing the flowmeter onto process piping, flush and clean the whole piping.
- Use the shield cable for wiring and do not locate it near to power supply line etc. to avoid the electric noise.

ORDERING INFORMATION

Specify the following for order or inquiry; Model code, Fluid name, Max. Flow rate, Temperature and Pressure.

(Note) The external shapes for TF-1□61-□□□-P25 and TF-1□61-□□-F25 are a little different from the above-mentioned drawings.

* Specification is subject to change without notice.

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