



TECHNICAL GUIDANCE

Available for general applications, and cost effective

HM1000 Series

MASS FLOWMETER / CONTROLLER

OUTLINE

HM1000 series is Thermal Mass Flowmeter and Controller, by which various kinds of gas can be measured.

The flow rate of gas from 5mL/min(nor) to 20L/min(nor) can be measured and controlled without being influenced by the change in temperature and pressure.

There are two types available: Mass Flowmeter to measure flow rate and Mass Flow Controller with control valve built in, and also cost effective type and general type in high performance have newly been lined up in order to comply with any requirements.

FEATURES

- ❑ Wide selection range
Available for wide range from 0 to 5mL/min(nor) to 0 to 20 L/min(nor).
- ❑ High accuracy
±1.5%F.S. (Standard type)
- ❑ Complete supporting instruments
Power source unit, digital indicator and potentiometer (Available with controller only)
Easy installation and wiring
- ❑ Handily usable and cost effective



APPLICATIONS

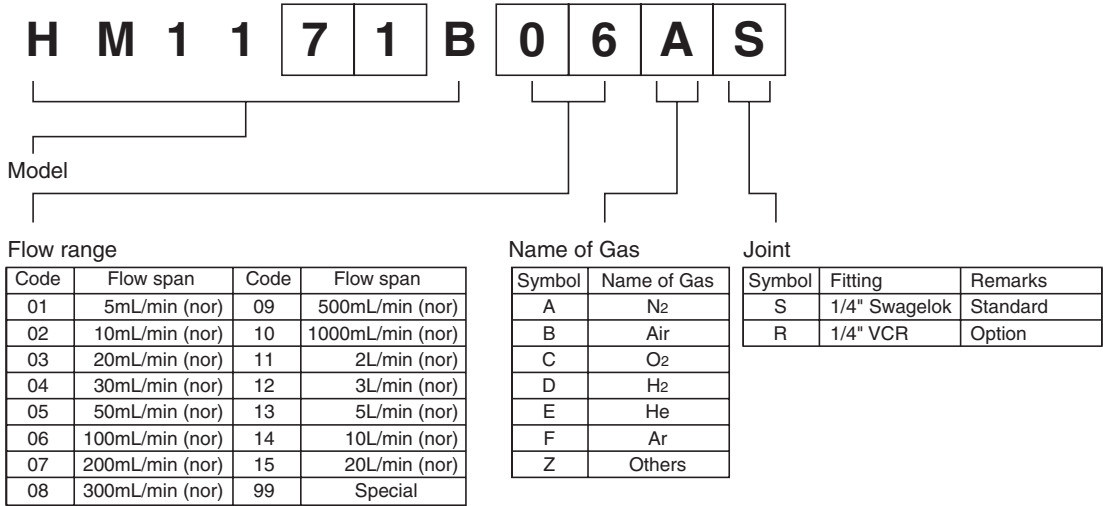
- ❑ Utility gas supply lines in industries
- ❑ Various instruments for analysis
- ❑ Gas constant flow control
- ❑ Gas mixture and division system

SPECIFICATIONS

Classification	Mass Flowmeter		Mass Flow Controller	
	Cost effective	Standard	Cost effective	Standard
Type				
Model code	HM1121B	HM1111B	HM1171B (NC) HM1181B (NO)	HM1141B (NC) HM1151B (NO)
Possible scale range	5/10/20/30/50/100/200/300/500/1000mL/min (nor) 2/3/5/10/20L/min (nor)			
Control Range			2~100% of span	
Accuracy	±2%F.S	±1.5%F.S	±2%F.S	±1.5%F.S
Linearity	±1%F.S	±0.7%F.S	±1%F.S	±0.7%F.S
Reproducibility	±0.2%F.S	±0.2%F.S	±0.2%F.S	±0.2%F.S
Response	Within 3 seconds (98% of SPAN)		Within 3 seconds up to ±2% of set value	
Max operating pressure	970kPa			
Test pressure	1470kPa			
Pressure loss	4.9kPa			
Operating differential pressure			34.3~274.4kPa, 68.6~274.4kPa (≥10L/min(nor))	
Leak Standard	1 × 10 ⁻⁹ Pa · m ³ /s (He) or below			
Set signal			0.1~5VDC	
Output signal	0~5VDC			
Operating temperature	5~45°C (Gas temperature is same as operating temperature.)			
Contact gas material	SUS316, Viton		SUS316, Viton, Teflon	
Fitting	Standard : 1/4" Swagelok			
Position of installation	Free (±0.5% of SPAN)			
Mass	680g		800g	
Power consumption	Within 1W		Within 3W	

*NC and NO stand for "Normal close type" and "Normal open type" respectively.

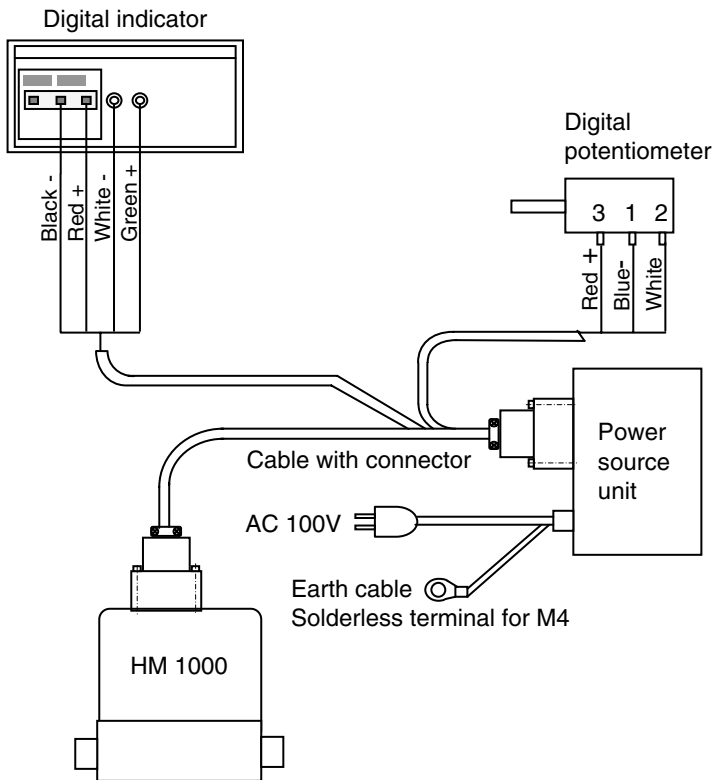
MODEL CODE



NOTES

- 1) The flow range is for N₂ gas, and depending upon the kind of gases, the range may sometimes vary.
- 2) The calibration criterion is 0 °C and 1013hPa.
- 3) Available gases: Limited to N₂, Air, O₂, H₂, He, and Ar for cost effective instruments.
- 4) "SLOW START" function can optionally be added, but only for normal close type.

EXAMPLE OF COMPOSITION

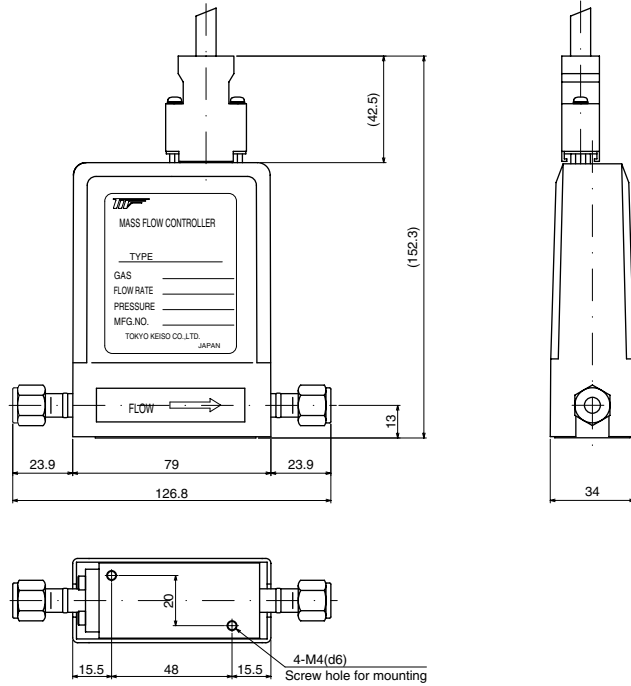


General composition is shown in the left figure.

Mass flowmeter	HM1000
Digital indicator	DM1501B
Digital potentiometer	DP1001B
Power source unit	PU1501B
Cable with connector (Std. 2m)	
Mass flowmeter	CA1252B
Mass flow controller	CA1152B

* Potentiometer is not available with Mass flowmeter.

DIMENSION

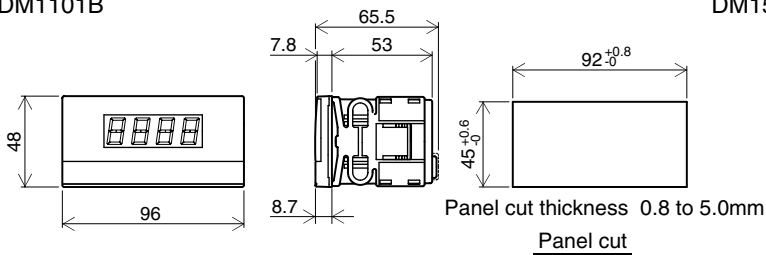


INDICATOR AND DIGITAL POTENTIOMETER FOR MASS FLOWMETER AND MASS FLOW CONTROLLER

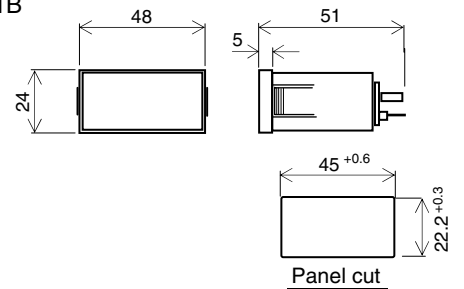
Indicator

[Dimension]

DM1101B



DM1501B

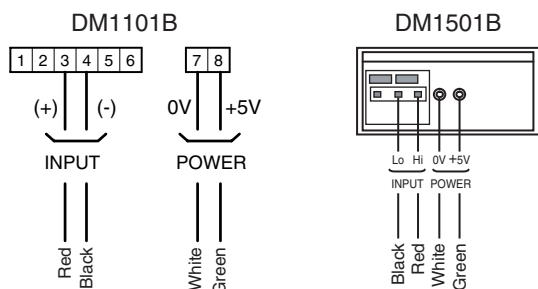


[Specification]

Type	DM1101B□□	DM1501B□□
Indication	LED7 segments (Red indication)	
Over indication	1999 blinks	000 or -000 blinks
Power source	DC5V ±10%	DC5V ±5%
Power consumption	220mA / DC5V	0.3W
Mass	85g	40g

Code	Indication	Code	Indication	Code	Indication
01	0-5.00 mL/min (nor)	07	0-200 mL/min (nor)	13	0-5.00 L/min (nor)
02	0-10.00 mL/min (nor)	08	0-300 mL/min (nor)	14	0-10.00 L/min (nor)
03	0-20.0 mL/min (nor)	09	0-500 mL/min (nor)	15	0-20.0 L/min (nor)
04	0-30.0 mL/min (nor)	10	0-1000 mL/min (nor)	99	Special
05	0-50.0 mL/min (nor)	11	0-2.00 L/min (nor)		
06	0-100.0 mL/min (nor)	12	0-3.00 L/min (nor)		

[Connection]

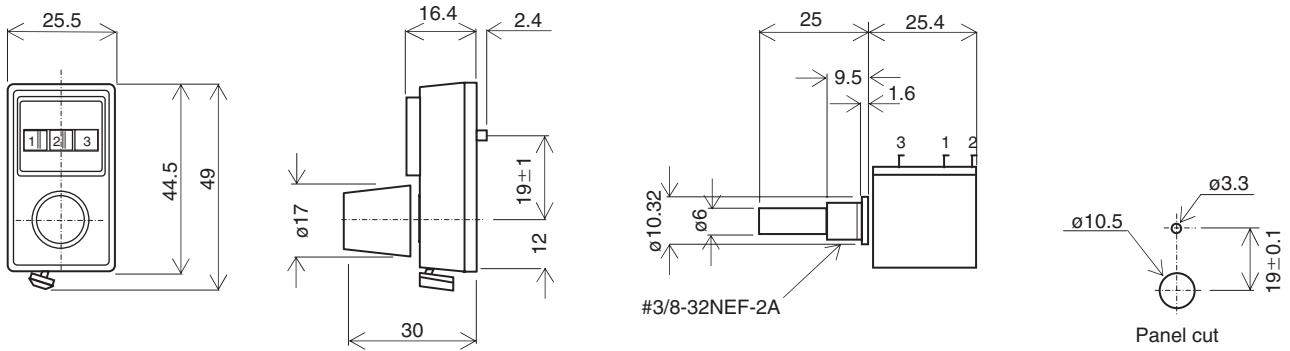


INDICATOR AND DIGITAL POTENTIOMETER FOR MASS FLOWMETER AND MASS FLOW CONTROLLER

Digital potentiometer

[Dimension]

DP1001B

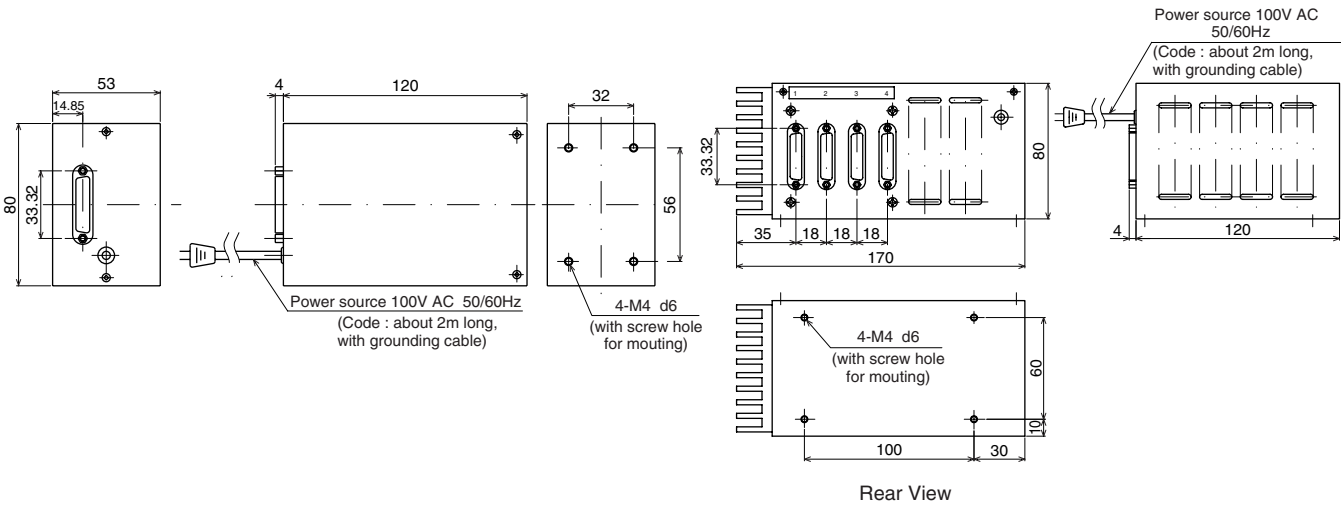


Power supply unit

[Dimension]

Power source for one unit PU1001B, PU1501B

Power source for four units PU1004B



* Specification is subject to change without notice.

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