

OUTLINE

The **TM3000** mini converter unit is a dedicated converter to be used in combination with TF-900, TF-1000, TF-5000, TF-6000, and (H-)EP-TF-5300 series mass flowmeters. The DIN-72mm compact housing is equipped with functions such as instantaneous flow rate indication, re-output, totalized value indication, scaled pulse output, high/low alarm outputs, as well as RS-485 communication function, and converter drive power supply as standard. It can be used widely for monitoring the total gas amount of each flow and detecting abnormal flow rate.

STANDARD SPECIFICATION

• FLOW RATE INDICATION

Indication : 4-digit LCD (13 mm height)
Accuracy : $\pm 0.1\%$ F.S. and ± 1 digit, in addition to detector accuracy

Analog input (by selection)

- a) 4 to 20 mA DC, 250 Ω input impedance
- b) 0 to 5 V DC, 200 k Ω input impedance

Analog re-output (by selection)

- a) 4 to 20 mA DC, up to 500 Ω load
- b) 0 to 5 V DC, 100 k Ω load and over

Output accuracy : $\pm 0.1\%$ F.S., in addition to detector accuracy

• TOTALIZATION FUNCTION

Indication : 7-digit LCD (6 mm height)
Scaled pulse : Output Open collector
 Rating 30 V DC, 20 mA (maximum)
 Pulse width 50 mS (fixed)
 Pulse rate Synchronous with the value counter

Indication accuracy : $\pm 0.1\%$ F.S., in addition to detector accuracy

Scaling factor : 36,000 c/h (maximum)

Totalized value reset

: Remote (via terminal/communication) or panel key touch

• LOW CUT : 2% as standard (arbitrary setting)

Scope of application

: Flow rate indication, flow rate output, totalized value indication, scaled pulse output

• ALARM FUNCTION

Alarm indication : LED turns red during operation.

Alarm output : SPST NO (Make contact) or NC (Break contact) (The contact will be opened even when power is not supplied.)

Setting accuracy : $\pm 1.0\%$ F.S.

Contact rating : 125 V AC, 0.4 A/30 V DC, 2 A

Setting point : 2 points

Operation mode : Upper and lower alarm limits can be set.

Hysteresis width : $1 \pm 0.5\%$ F.S. (fixed)

• RS-485 COMMUNICATION SPECIFICATION

Protocol : Modbus RTU

Transmission speed

: Selectable from 2400, 4800, 9600, or 19200 bps

Data format : Selectable from 8N1, 8E1, or 8O1

ID address : Selectable from 0 to 255

Function : Outputs for instantaneous flow rate, totalized values etc., setting change

• OTHER FUNCTIONS

Multi-data : Up to 6 channels can be set.

Loop check function



• DATA BACKUP

Operation parameters and totalized values can be stored in flash memory for 10 years.

• EXTERNAL POWER SUPPLY

: Select either from ± 12 V DC, +200 mA, -200 mA, or ± 15 V DC, +200 mA, -200 mA.

• OTHER SPECIFICATIONS

Power supply : 85 to 250 V AC, 50/60 Hz

Power consumption

: 15 VA

Electrical connection

: Blade terminal

Ambient temperature

: 0 to 50°C (no condensation)

Withstand voltage

: 1500 V AC between power supply and earth terminal, 1 min.

Insulation resistance

: 20 M Ω or over between power supply and earth terminal (500 V DC)

Construction : Indoor use (IP20 equivalent)

Housing material : ABS resin with glass fiber

Weight : Approx. 480 g

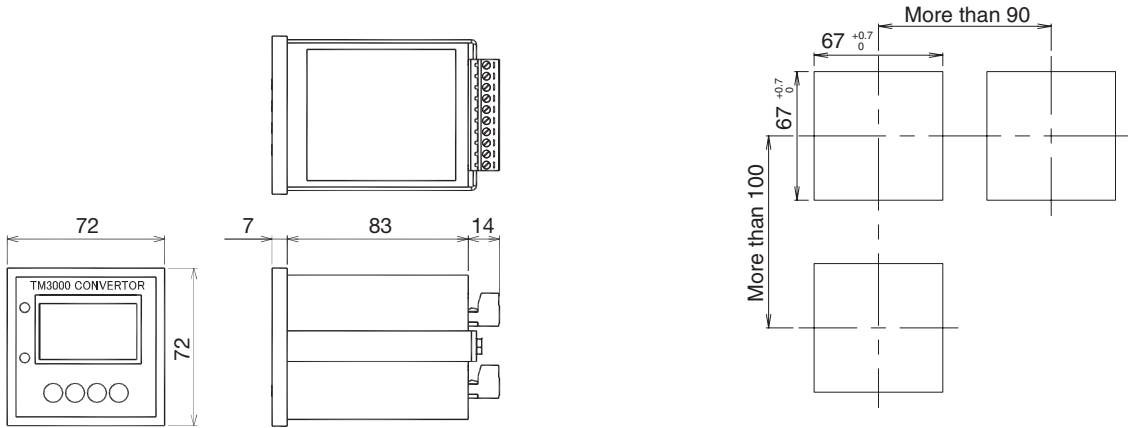
MODEL CODE

MODEL CODE		Description
TM	3	
Analog input	1	4 to 20 mA DC
	2	0 to 5 V DC
Analog output	1	4 to 20 mA DC
	2	0 to 5 V DC
External power supply	1	± 12 V DC (Standard)
	2	± 15 V DC

APPLICABLE FLOWMETERS AND EXCLUSIVE CABLE

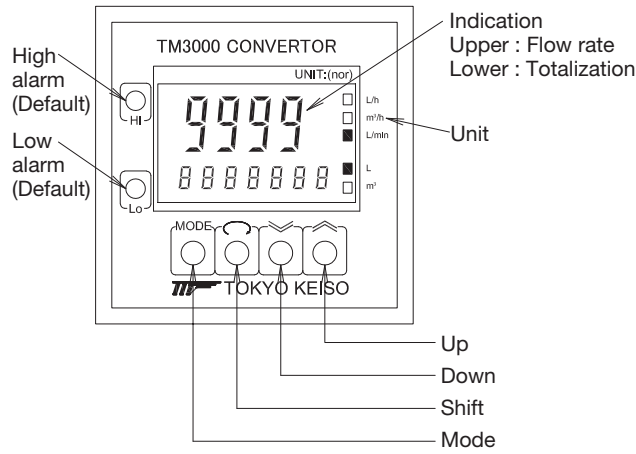
Applicable flowmeters	Cable code	Cable length
TF-900/1000/1100/1300	SC-MM3	2m: Standard 100m (Max.)
TF-1200/1400	SC-MA3	
TF-5300/6300	SC-FM3	
(H-) EP-TF-5300	SC-EP3	
TF-1161	SC-MR3	
HM-1000/5000 (Option)	SC-HM2	

DIMENSIONS

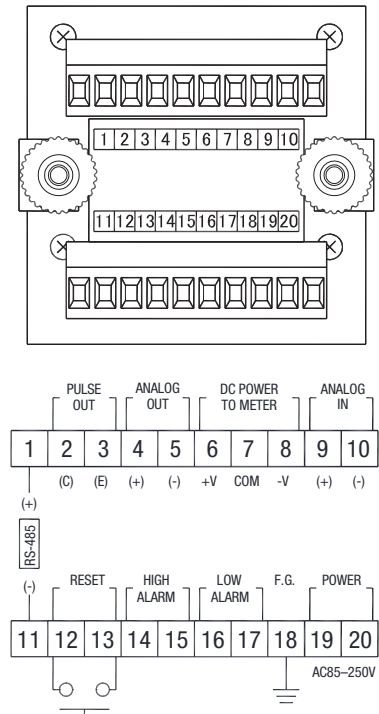


Note) Recommending mount panel in 1 to 5mm thickness.

FRONT PANEL



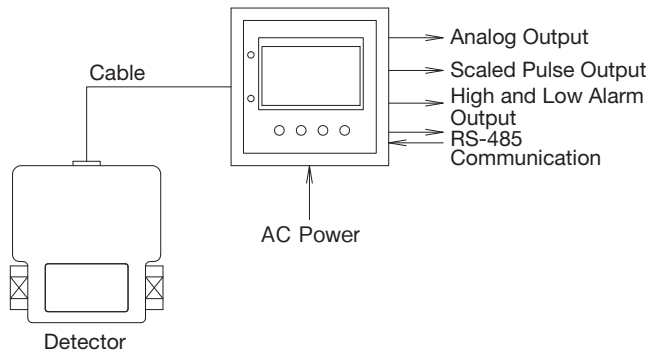
TERMINAL



WIRING

No.	Description	No.	Description
1	(+) RS-485	11	(-) RS-485
2	(C) Pulse Output	12	Reset
3	(E) Pulse Output	13	Reset
4	(+) Analog Output	14	High alarm output
5	(-) Analog Output	15	High alarm output
6	(+V) DC power to meter	16	Low alarm output
7	(COM) DC power to meter	17	Low alarm output
8	(-V) DC power to meter	18	F.G.
9	(+) Analog Input	19	AC power supply
10	(-) Analog Input	20	AC power supply

APPLICATIONS



* Specification is subject to change without notice.

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