

M4V

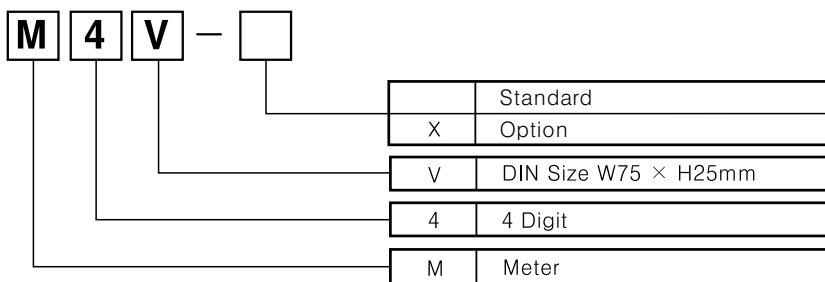
■ Features

- Various input function
(0-2V, 0-10V, 1-5V, 0-1mA, 4-20mA)
- Prescale function (High/Low scale setting)
- Max. display : -999 to 9999
- Error display function or self diagnosis function
- High quality by Microprocessor built-in
- Display accuracy : F · S $\pm 0.2\%$, rdg ± 1 digit



⚠ Please read "Caution for your safety" in operation manual before using.

■ Ordering information



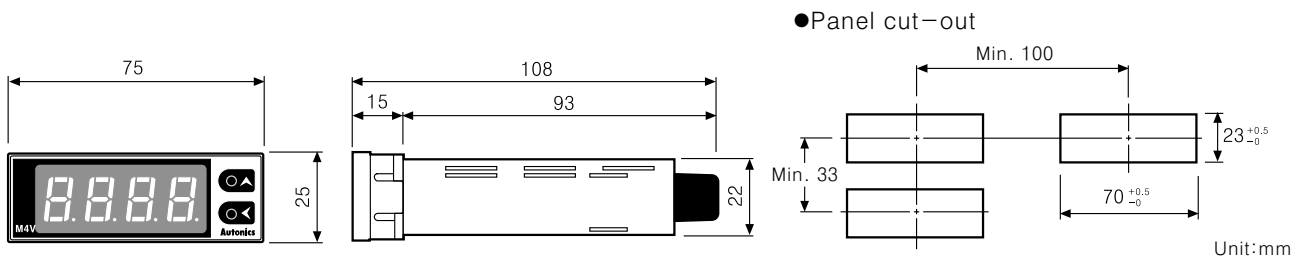
※Other specification is available by option.

■ Specifications

| Model | M4V | |
|-----------------------|--|---|
| Measurement function | DV Volt, DC Ampere, 4-20mADC, 1-5VDC | |
| Power supply | 12-24VDC | |
| Operating voltage | 90 ~ 110% of rated voltage | |
| Power consumption | Approx. less than 2W | |
| Display method | 7 Segment red LED display (Segment height 14mm) | |
| Display accuracy | 0 ~ +50°C : F · S $\pm 0.2\%$ (rdg ± 1 digit), -10 ~ 0°C : F · S $\pm 0.3\%$ (rdg ± 1 digit) | |
| Sampling time | 0.5 sec. | |
| Setting method | Scale set by front S/W key | |
| Max. allowable input | 150% of measurement input | |
| Set-diagnosis | Error indication | |
| Insulation resistance | Min. 100M Ω (at DC500V) | |
| Dielectric strength | 2000VAC 50/60Hz for 1 minute | |
| Noise strength | ± 300 V the square wave noise (pulse width:1 μ s) by the noise simulator | |
| Vibration | Mecanical | 0.75mm amplitude at frequency of 10 ~ 50Hz in each of X, Y, Z directions for 1hour |
| | Malfunction | 0.5mm amplitude at frequency of 10 ~ 50Hz in each of X, Y, Z directions for 10minutes |
| Shock | Mecanical | 300m/s ² (30G) in X, Y, Z direction for 3 times□ |
| | Malfunction | 100m/s ² (10G) in X, Y, Z directions for 3 times□ |
| Ambient temperature | -10 ~ +50°C (at non-freezing status) | |
| Storage temperature | -20 ~ +60°C (at non-freezing status) | |
| Ambient humidity | 35 to 85%RH | |
| Weight | Approx. 83g | |

GRAPHIC PANEL METER

■ Dimensions



■ Input and connection

| Input | Display | Connection |
|------------|---------|------------|
| 0 – 2VDC | 0-2U | |
| 1 – 5VDC | 1-5U | |
| 0 – 10VDC | 0-10 | |
| 0 – 1mADC | 1mA | |
| 4 – 20mADC | 4-20 | |

■ Factory default setting

| | | | |
|-------------|-------|-------------|-----|
| <i>In-t</i> | 0-2U | <i>dot</i> | 0.0 |
| <i>L-SC</i> | 0.0 | <i>In-b</i> | 00 |
| <i>H-SC</i> | 100.0 | <i>LoC</i> | oFF |

■ ERROR display

Display indicates "ERROR" when wrong measuring input value is applied.

◎ ERROR indication

- In case of lower value than measuring input value.
Ex) In case of applying 2mADC when measuring input range is selected as 4 to 20mADC. – Flickers " **LLLL** "
- In case of higher value than measuring input value.
Ex) In case of applying 22mA when measuring input range is selected as 4 to 20mA. – Flickers " **HHHH** "
- In case of damaging the memory chip by high frequency noise, strong surge noise. – Flickers " **Er-E** "

◎ Clearance of ERROR indication

- "HHHH" and "LLLL" ERROR is to exceed measuring input range, therefore if measuring input value is applied within input range, ERROR message will be cleared automatically.
- "oVer" is indicated by mis-connection or in case of occurring something wrong in measuring input. Please cut off the power and then check measuring input.
- "Er-E" is indicated when data programmed in memory chip is damaged.
It is impossible to clear "Er-E" by end-user, therefore it must be repaired by our engineer.

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor

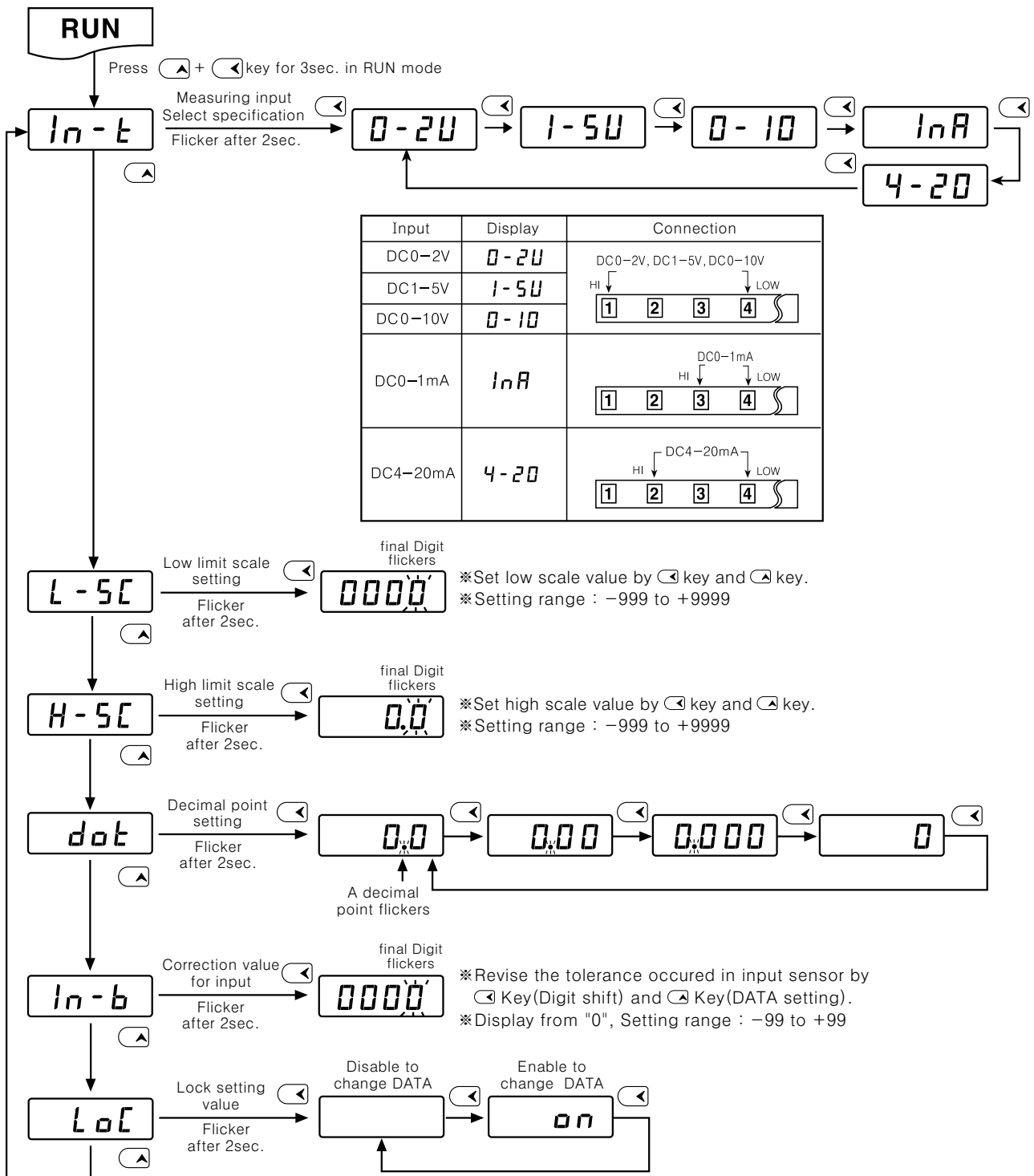
(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

(M) 5-Phase stepping motor & Driver & Controller

■ Programming



◎How to change the setting value

1. When entering into MODE, change digit flickering by \leftarrow Key then set DATA value by \uparrow Key.
2. After complete DATA value setting, please press \uparrow Key for 2sec. then it will move to next MODE saving DATA.
3. Press \leftarrow Key for 2 sec. to return RUN mode after changing(setting) DATA value in each MODE.

※Press \uparrow KEY for 2sec., then it will retrun to RUN without change setting value.

※When cheking the setting value only in each mode. Press \leftarrow Key for 2 sec., then press for 2 sec. again.

(If press continuously, it will not advance to next mode and return to RUN mode)

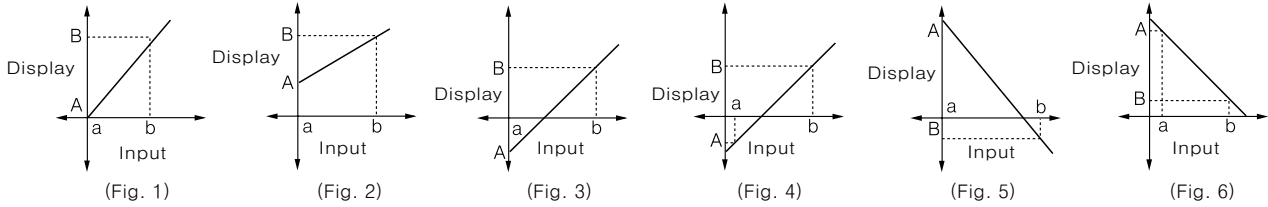
※If no key touched for 60sec., it will return to RUN mode.

GRAPHIC PANEL METER

■ PRESCALE function

This function is to display setting (−999 to 9999) of particular High/Low-limit value in order to display High/Low-limit value of measuring input.

If measuring inputs are a or b and display values are A or B, it will display a=A, b=B as below graph.

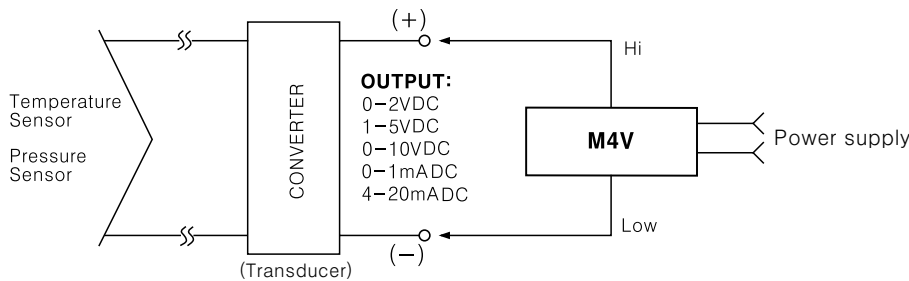


Ex) Able to set the display value for input as certain value (Not "0") by using prescale function.

| Measuring input□ | Prescale setting value | Display | Graph |
|------------------|---------------------------------|------------|----------|
| DC0-10V | L-scale : 0 H-scale : 200 | 0 ~ 200 | (Fig. 1) |
| | L-scale : 50 H-scale : 200 | 50 ~ 200 | (Fig. 2) |
| | L-scale : −100, H-scale : 200 | −100 ~ 200 | (Fig. 3) |
| | L-scale : 200, H-scale : −50 | 200 ~ −50 | (Fig. 5) |

※L-SC(Low limit) : −999 ~ +9999, H-SC(High limit) : −999 ~ +9999
But, There must be offset "1" between L-SC and H-SC.

■ Application of connections



■ How to use properly

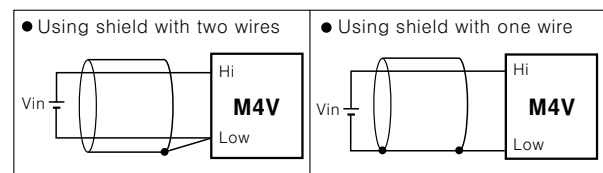
- Please read this Catalog before buying Panel Meter.
- Ambient condition
 - Please use this product under −10~50°C of ambient operating temperature and less than 35~85RH of humidity. Moreover, use this item near normal temperature 20°C, the most important condition, which manages the accuracy.
 - Must avoid the condition of dew status by rapidly changing temperature.
 - Must avoid heavy vibration or shock.
 - Please avoid the place where there are dreg, dust, and chemical agent or gas, which is destructive to electrical parts.
 - Do not use this item where the voltage or noise is over the proper specification.
It may cause malfunction.

3. Keeping method

When you keep it, please avoid a direct ray of light and keep it under −20~60°C of ambient operating temperature and less than 35~85RH of humidity. Wrapping and keeping it as sold is a good condition.

4. Input Line

Shield wire must be used when the measuring input line is getting longer or there are lots of noises.



(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5-Phase
stepping
motor &
Driver &
Controller