M4V

DIN W75×H25mm Digital Graphic Panel Meter For Mosaic Panel
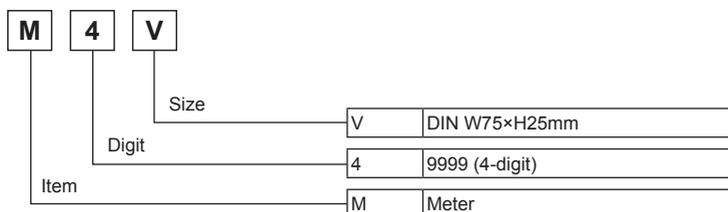
■ Features

● Various input function
  : 0-2VDC, 0-10VDC, 1-5VDC,
   DC0-1mA, DC4-20mA
● High/low-limit display scale function
● Max. display range: -999 to 9999
● Error display function
● High quality by microprocessor built-in
● Display accuracy: F.S. ±0.2% rdg ±1-digit

⚠ **Please read "Safety Considerations" in operation manual before using.**

■ Ordering Information

M	4	V

Size

V	DIN W75×H25mm

Digit

4	9999 (4-digit)

Item

M	Meter

■ Specifications

Model		M4V				
Measurement function		DC voltage			DC current	
Measurement input		0-2VDC⎓	1-5VDC⎓	0-10VDC⎓	DC0-1mA	DC4-20mA
Max. allowable input		110% of measurment input				
Power supply		12-24VDC⎓				
Allowable voltage range		90 to 110% of rated voltage				
Power consumption		Max. 2W				
Display method		7-segment LED display (red) (character height: 14mm)				
Display accuracy		0 to 50℃: F.S. ±0.2% rdg ±1-digit -10 to 0℃: F.S. ±0.3% rdg ±1-digit				
Display cycle		500ms				
Setting type		Setting type with the front keys				
Self-diagnosis function		Error display function				
Insulation resistance		Over 100MΩ (at 500VDC megger)				
Dielectric strength		2,000VAC 50/60Hz for 1 min				
Noise immunity		±300V the square wave noise (pulse width: 1μs) by the noise simulator				
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 50Hz (for 1 min) in each X, Y, Z direction for 1 hour				
	Malfunction	0.5mm amplitude at frequency of 10 to 50Hz (for 1 min) in each X, Y, Z direction for 10 min				
Shock	Mechanical	300m/s² (approx. 30G) in each X, Y, Z direction for 3 times				
	Malfunction	100m/s² (approx. 10G) in each X, Y, Z direction for 3 times				
Environ-ment	Ambient temperature	-10 to 50℃, storage: 20 to 60℃				
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH				
Unit weight		Approx. 83g				

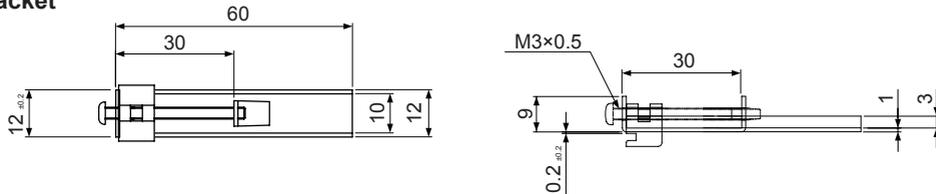※Environment resistance is rated at no freezing or condensation.

◾ Dimensions

(unit: mm)

● **Panel cut-out**
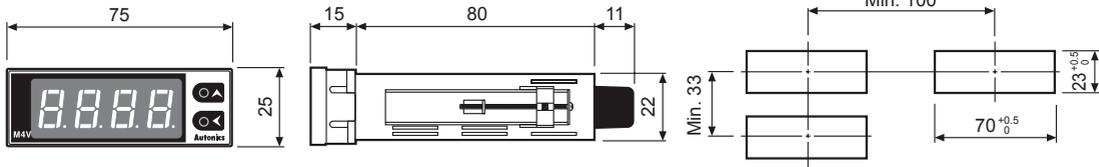
● **Bracket**

◾ Input and Connection

Input		Display	Connection
Voltage	0-2VDC	0-2U	0-2VDC, 1-5VDC, 0-10VDC SOURCE
	1-5VDC	1-5U	HI ↓ ↓LOW ↓ − + ↓
	0-10VDC	0-10	1 2 3 4 5 6
Current	DC0-1mA	1nA	DC0-1mA SOURCE HI ↓ ↓LOW ↓ − + ↓ 1 2 3 4 5 6
	DC4-20mA	4-20	DC4-20mA SOURCE HI ↓ ↓LOW ↓ − + ↓ 1 2 3 4 5 6

◾ Factory Defaults

Parameter	Factory default	Parameter	Factory default
In-t	0-2U	dot	0.0
L-SC	0000	In-b	0000
H-SC	0.0	LoC	OFF

◾ Error Display

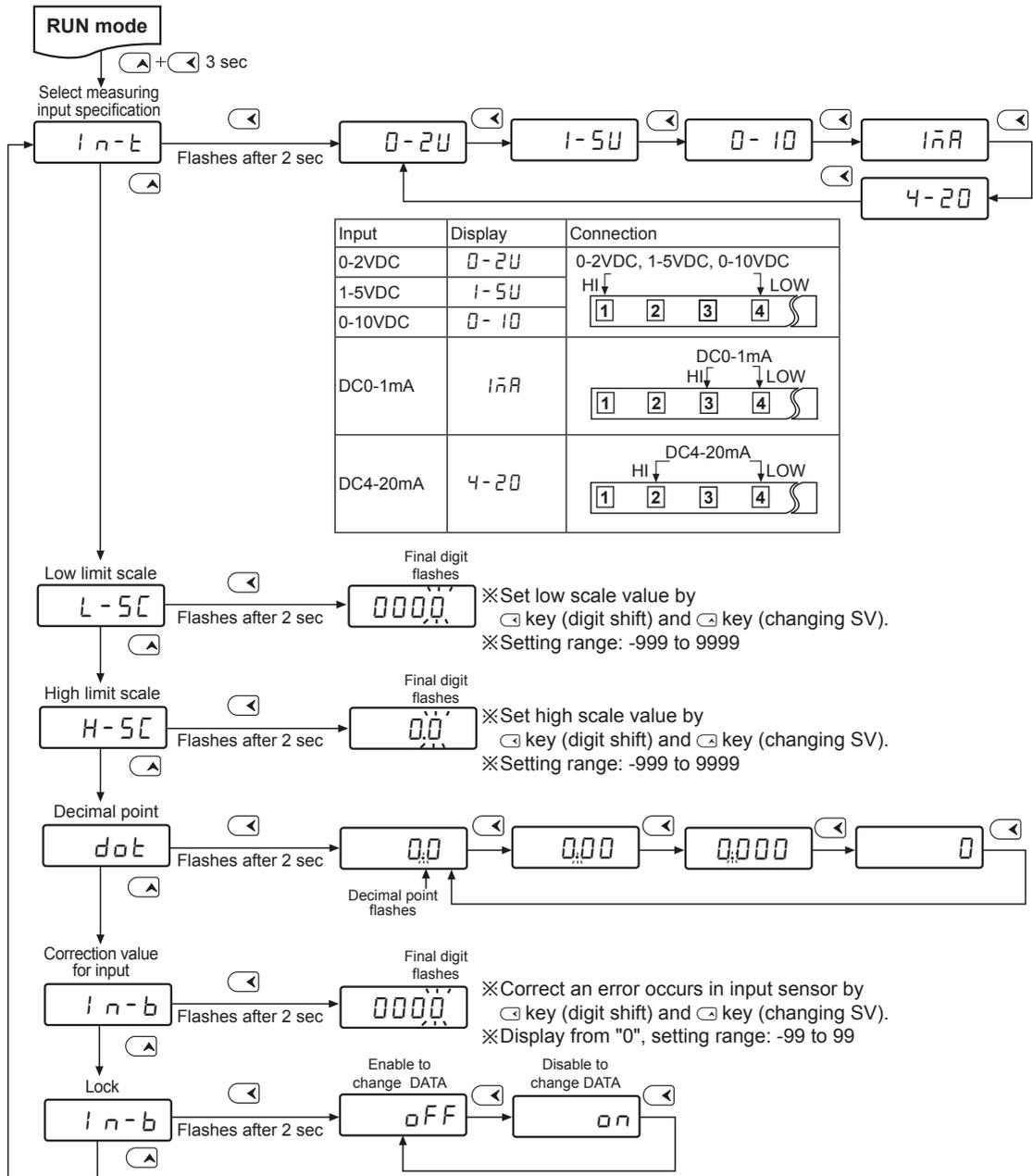Display indicates "Error" when wrong measuring input value is applied.

◎ **Display an Error**
- In case of lower value than measuring input value.
  E.g.) In case of applying DC2mA when measuring input range is selected as DC4-20mA: LLLL flashes.
- In case of higher value than measuring input value.
  E.g.) In case of applying DC22mA when measuring input range is selected as DC4-20mA: HHHH flashes.
- In case of damaging the memory chip by high frequency noise, strong surge noise: Er-E flashes.

◎ **Cancellation of Error**
- HHHH and LLLL Error is to exceed measuring input range, therefore if measuring input value is applied with in input range, Error message will be cleared automatically.
- ouEr 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 indicates data damage programmed in memory chip, and damaged data can not be recovered.
  Ask a dealer shop for A/S.
  It is impossible to clear Er-E by end-user, therefore it must be repaired by our engineer.

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▣ Parameter Description

Input	Display	Connection
0-2VDC	0-2U	0-2VDC, 1-5VDC, 0-10VDC
1-5VDC	1-5U	HI↓ ↓LOW
0-10VDC	0-10	1 2 3 4
DC0-1mA	1ñA	DC0-1mA HI↓ ↓LOW 1 2 3 4
DC4-20mA	4-20	DC4-20mA HI↓ ↓LOW 1 2 3 4

Low limit scale L-SC → Flashes after 2 sec → 0000 (Final digit flashes)
※Set low scale value by ◁ key (digit shift) and � key (changing SV).
※Setting range: -999 to 9999

High limit scale H-SC → Flashes after 2 sec → 0.0 (Final digit flashes)
※Set high scale value by ◁ key (digit shift) and ⌐ key (changing SV).
※Setting range: -999 to 9999

Decimal point dot → Flashes after 2 sec → 0.0 → 0.00 → 0.000 → 0 (Decimal point flashes)

Correction value for input 1n-b → Flashes after 2 sec → 0000 (Final digit flashes)
※Correct an error occurs in input sensor by ◁ key (digit shift) and ⌐ key (changing SV).
※Display from "0", setting range: -99 to 99

Lock 1n-b → Flashes after 2 sec → oFF (Enable to change DATA) → on (Disable to change DATA)

◎ How to change the setting value
1. When advance to MODE, change digit flashing by ◁ key then set DATA value by ⌐ key.
2. After complete DATA value setting, please press ⌐ key for 2 sec then it will move to next MODE saving DATA.
3. Press ⌐ key for 2 sec to return RUN mode after changing (setting) DATA value in each MODE.

※Press ⌐ key for 2 sec, then it will return to RUN without change setting value.
※When checking the setting value only in each mode. Press ⌐ 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 any key is untouched for 60 sec, it will return to RUN mode.

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▣ High/Low-Limit Display Scale Function

This function is to display setting 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.
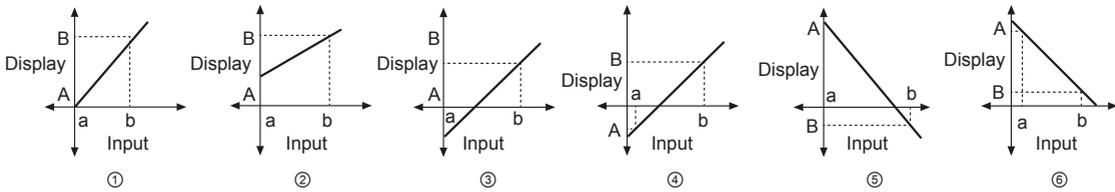

E.g.) Enables to set the display value for input as certain value (not "0") by using High/low-limit display scale function.

Measuring input	Setting value		Display	Graph
0-10VDC	L-Scale: 0	H-Scale: 200	0 to 200	①
	L-Scale: 50	H-Scale: 200	50 to 200	②
	L-Scale: -100	H-Scale: 200	-100 to 200	③
	L-Scale: 200	H-Scale: -50	200 to -50	⑤

※High/low-limit value setting range → L-5C (low limit): -999 to 9999, H-5C (high limit): -999 to 9999
But, there must be offset "1" between L-5C and H-5C.

▣ Application Of Connections
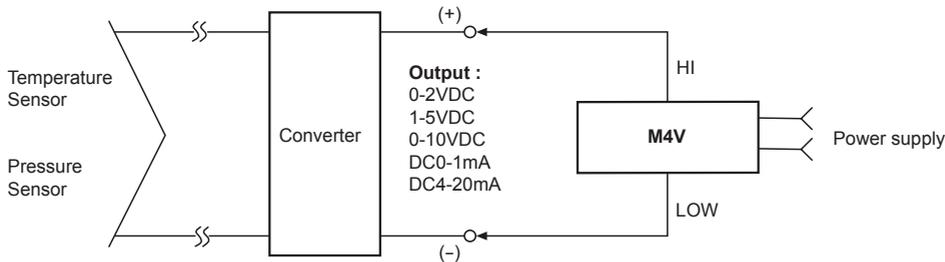
▣ Proper Usage

● Please read this catalog before purchase Panel meter.
● Power supply should be insulated and limited voltage/ current or Class 2, SELV power supply device.
● Ambient condition
 • Please use this product under -10 to 50℃ of ambient operating temperature and less than 35 to 85%RH of humidity. Moreover, use this item near normal temperature 20℃, the most important condition, which manages the accuracy.
 • Please avoid the condition of dew status by rapidly changing temperature.
 • Please avoid too much vibration or shock.
 • Please avoid the place where there are drag, 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.

● Storage
 When you keep it, please avoid a direct ray of light and keep it under -20 to 60℃ of ambient operating temperature and less than 35 to 85%RH of humidity. Wrap and keep it as initial state.
● Input Line
 Shield wire must be used when the measuring input line is getting longer or there are too much noise.
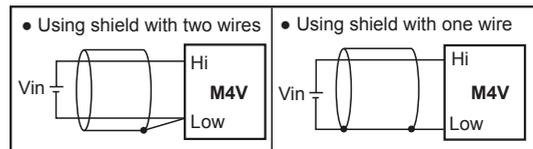
(A) Photoelectric Sensors

(B) Fiber Optic Sensors

(C) Door/Area Sensors

(D) Proximity Sensors

(E) Pressure Sensors

(F) Rotary Encoders

(G) Connectors/ Connector Cables/ Sensor Distribution Boxes/Sockets

(H) Temperature Controllers

(I) SSRs / Power Controllers

(J) Counters

(K) Timers

(L) Panel Meters

(M) Tacho / Speed / Pulse Meters

(N) Display Units

(O) Sensor Controllers

(P) Switching Mode Power Supplies

(Q) Stepper Motors & Drivers & Controllers

(R) Graphic/ Logic Panels

(S) Field Network Devices

(T) Software