

Autonics

DIGITAL SCALING METER M4V SERIES

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

*Please keep these instructions and review them before using this unit.

*Please observe the cautions that follow:

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

*The following is an explanation of the symbols used in the operation manual.

Caution: Injury or danger may occur under special conditions.

Warning

1. In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required.

It may result in serious damage, fire or human injury.

Caution

1. It must be mounted on panel.

It may give an electric shock.

2. Do not repair, check up or connect when power on and measuring input applied.

It may give an electric shock.

3. Do not disassemble and modify this unit, when it requires. If needs, please contact us.

It may give an electric shock and cause a fire.

4. This unit shall not be used outdoors.

It might shorten the life cycle of the product or give an electric shock.

5. Please observe specification rating.

It might shorten the life cycle of the product and cause a fire.

6. Be sure that there is not insulated between measuring input terminal and power terminal.

It may cause mechanical trouble of measuring target or result in product damage.

7. Please separate the power supply when use it as Volt meter and Ampere meter at the same time.

It may cause mechanical trouble of measuring target or result in product damage.

8. Please wire properly after check polarity of power.

It may cause a fire or explosion and result in product damage.

9. In cleaning the unit, do not use water or an oil-based detergent. It might cause an electric shock or fire that will result in damage to this product.

10. Do not use this unit at place where there are flammable or explosive gas, humidity, direct ray the sun, radiant heat, vibration, impact etc.

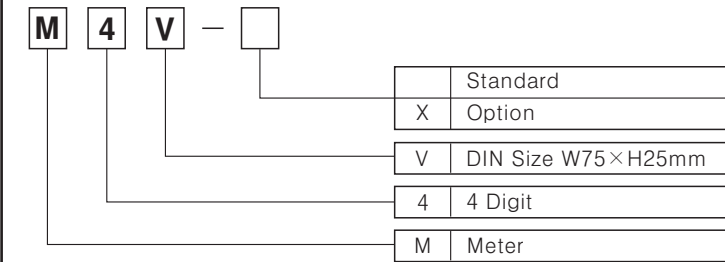
It may cause explosion.

11. Do not inflow dust or wire dregs into inside of this unit.

It may cause a fire or mechanical trouble.

*The above specification are changeable without notice anytime.

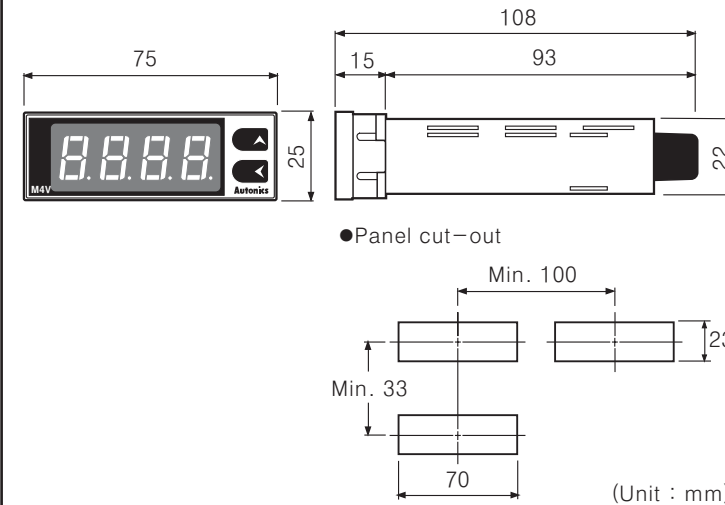
Ordering information



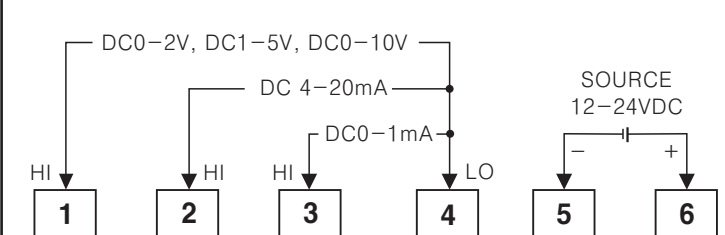
Specification

| | | |
|-----------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Model | M4V | |
| Power supply | 12-24VDC | |
| Operating voltage | 90 to 110% of rated voltage | |
| Power consumption | 2W | |
| Display method | 7 Segment red LED display(Segement height 14mm) | |
| Display accuracy | 0 to 50°C : F · S ±0.2%(rdg ±1digit) -10 to 0°C : F · S ±0.3%(rdg ±1digit) | |
| Sampling time | 0.5sec. | |
| Setting method | Scale set by front S/W key | |
| Input method | Sec (input chart) and (connection) | |
| Set-diagnosis | Error indication | |
| Insulation resistance | 100MΩ Min. (at 500VDC) | |
| Dielectric strength | 2000VAC 50/60Hz for 1 minute | |
| Noise strength | ±300V the square wave noise(pulse width:1μs) by the noise simulator | |
| Vibration | Mecanical | 0.75mm amplitude at frequency of 10 to 50Hz in each of X, Y, Z directions for 3hour |
| | Malfunction | 0.5mm amplitude at frequency of 10 to 50Hz in each of X, Y, Z directions for 10minute |
| 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 to 50°C(at non-freezing status) | |
| Storage temperature | -20 to 60°C(at non-freezing status) | |
| Ambient humidity | 35 to 85%RH | |
| Weight | Approx. 83g | |

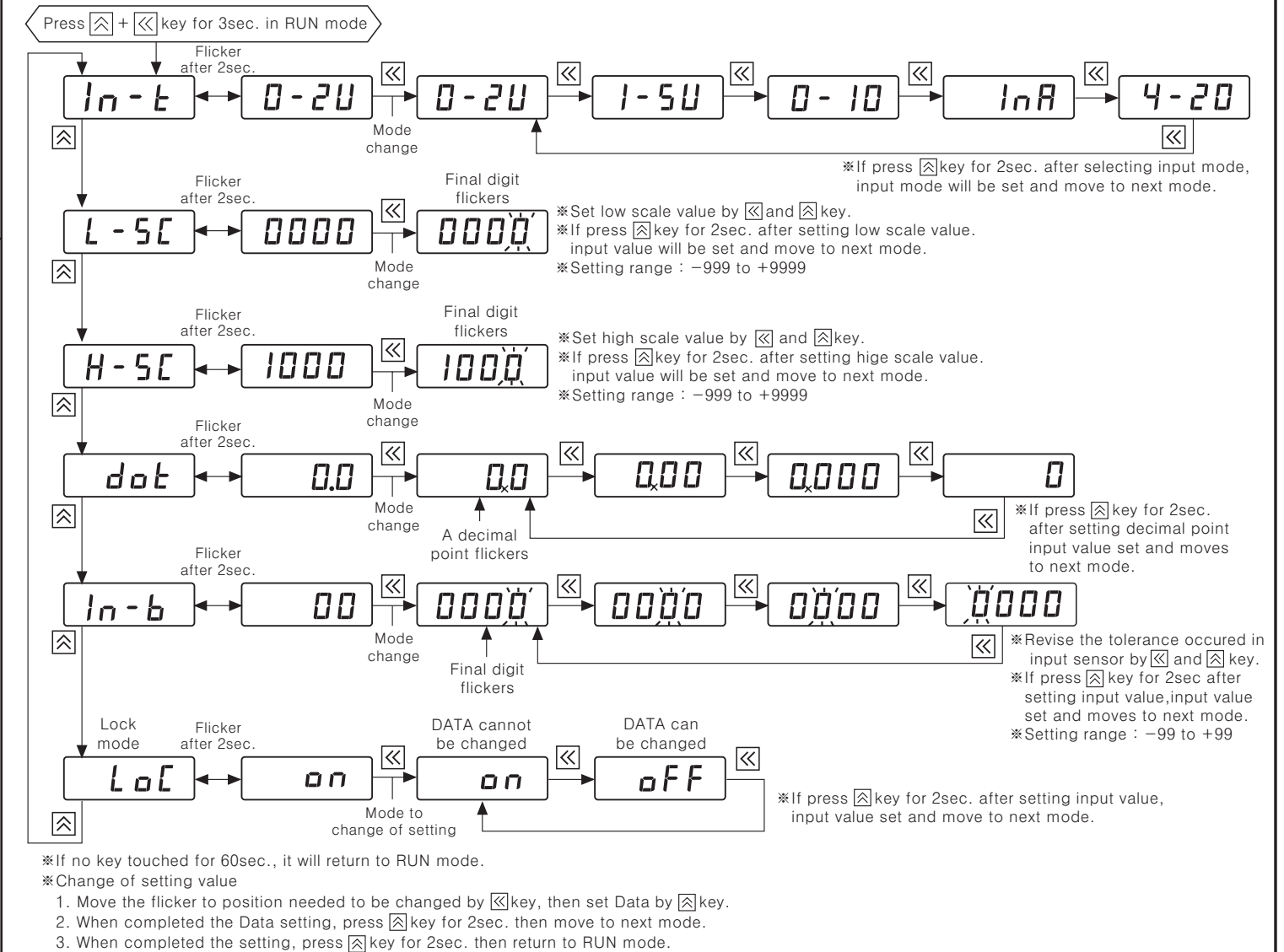
Dimension



Connection



Programming



ERROR display

Display indicates "ERROR" when wrong measuring input value is applied. There are 3 kinds of ERROR as follow;

- In case of lower value than measuring input value. Ex)In case of applying 2mA when measuring input range is selected as 4 to 20mA ERROR indication 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 ERROR indication flickers "HHHH"
- In case of damaging the memory chip by hige frequency noise, strong surge noise, ERROR indication flickers "Er-E".

*Clearance of ERROR

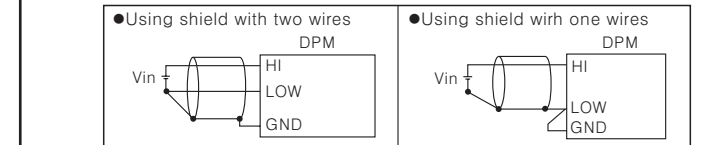
- "HHHH" and "LLLL" ERROR is to exceed measuring input range, therefore if measuring input value is applied within input range, ERROR message will be cleared automatically.
- "oVer" is indicated by mis-connection or in case of occurring something wrong in measuring input. Please cut off the power and 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.

Input chart

| Input | Input voltage | Display |
|---------|---------------|---------|
| Voltage | DC0-2V | 0-20 |
| | DC1-5V | 1-50 |
| | DC0-10V | 0-10 |
| Current | DC0-1mA | 1nA |
| | DC4-20mA | 4-20 |

Caution for using

1. Please use separated line from high voltage line or power line in order to avoid inductive noise.
2. Please install power switch or circuit breaker in order to cut the power supply.
3. The switch or circuit breaker should be installed near by users for safety.
4. Be sure to avoid using this unit near by machinery makes strong high frequency noise.(Welding machine, high capacity SCR unit etc.)
5. When input applied, if "1999" or "-1999" are displayed, it has some trouble with measuring input, please check the line after power off.
6. Input line : Shield wire must be used when the measuring input line is getting longer or there are lots of noises.
7. Please use insulated transformer for power supply.



*It may cause malfunction if above instructions are not followed.

Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHOMETER
- LINE SPEED METER
- DISPLAY UNIT
- PROXIMITY SWITCH
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER

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