

Autonics

DIGITAL SCALING METER

M4V SERIES

INSTRUCTION MANUAL



Thank you for choosing our Autonics product.
Please read the following safety considerations before use.

■ Safety Considerations

- ※Please observe all safety considerations for safe and proper product operation to avoid hazards.
- ※Safety considerations are categorized as follows.
- ⚠Warning** Failure to follow these instructions may result in serious injury or death.
- ⚠Caution** Failure to follow these instructions may result in personal injury or product damage.
- ※The symbols used on the product and instruction manual represent the following
⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠ Warning

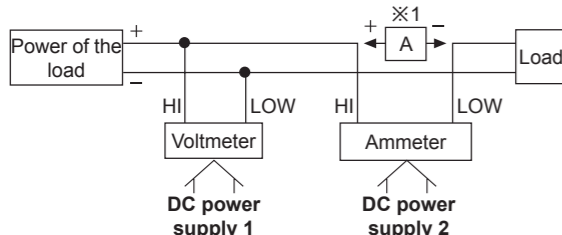
- 1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)
Failure to follow this instruction may result in fire, personal injury, or economic loss.
- 2. Install on a device panel to use.**
Failure to follow this instruction may result in fire.
- 3. Do not connect, repair, or inspect the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
- 4. Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 5. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in fire.

⚠ Caution

- 1. When connecting the power/measurement input, use AWG 24(0.20mm²) to AWG 15(1.65mm²) cable and tighten the terminal screw with a tightening torque of 0.98 to 1.18N·m.**
Failure to follow this instruction may result in fire or malfunction due to contact failure.
- 2. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 3. Use dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire.
- 4. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.**
Failure to follow this instruction may result in fire or explosion.
- 5. Keep metal chip, dust, and wire residue from flowing into the unit.**
Failure to follow this instruction may result in fire or product damage.

■ Connections of Applications

⊙ Simultaneous connection of voltmeter and ammeter



- ※ 1: Compared to measurement input range, higher measuring voltage needs a multiplier and lower measuring voltage needs a shunt.
- ※ When using voltmeter and ammeter simultaneously, connect the separated power supply each.
- ※ (-) terminal of the power and (-) terminal of measurement input are shorted.
- ※ **The above specifications are subject to change and some models may be discontinued without notice.**
- ※ **Be sure to follow cautions written in the instruction manual and the technical descriptions (catalog, homepage).**

■ Ordering Information

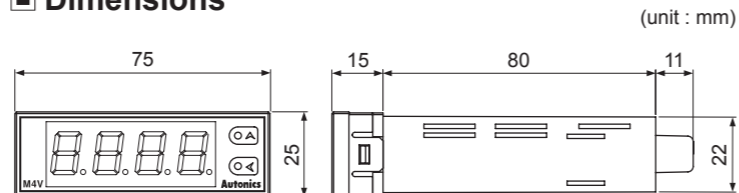
M	4	V	
Item	Size	Digit	
	V	4	M
	DIN W75×H25mm	9999 (4-digit)	Meter

■ Specifications

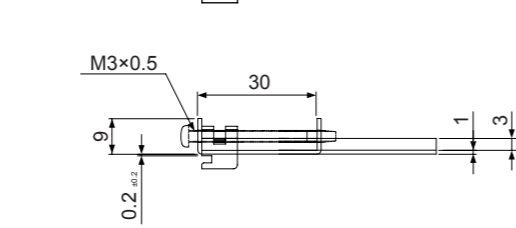
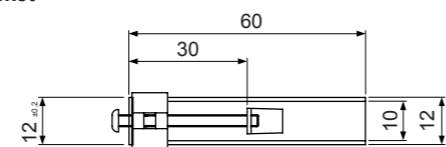
Model	M4V			
Measurement function	DC voltage		DC current	
Measuring input	0-2VDC≒	1-5VDC≒	0-10VDC≒	DC0-1mA DC4-20mA
Max. allowable input	110% of measurement input			
Power supply	12-24VDC≒			
Operating voltage	90 to 110% of rated voltage			
Power consumption	Max. 2W			
Display method	7-segment LED display (red) (character height: 14mm)			
Display accuracy	0 to 50°C: F.S. ±0.2% rdg ±1-digit -10 to 0°C: F.S. ±0.3% rdg ±1-digit			
Display cycle	500ms			
Setting type	Setting type with the front keys			
Set-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/s ² (approx. 30G) in each X, Y, Z direction for 3 times		
	Malfunction	100m/s ² (approx. 10G) in each X, Y, Z direction for 3 times		
Environ-ment	Ambient temp.	-10 to 50°C, storage: 20 to 60°C		
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH		
Unit weight ^{※1}	Approx. 83g			

※Environment resistance is rated at no freezing or condensation.

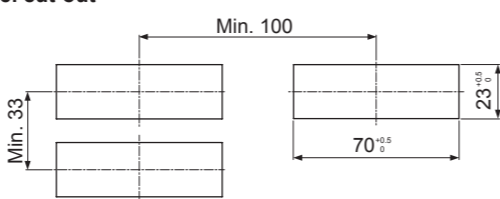
■ Dimensions



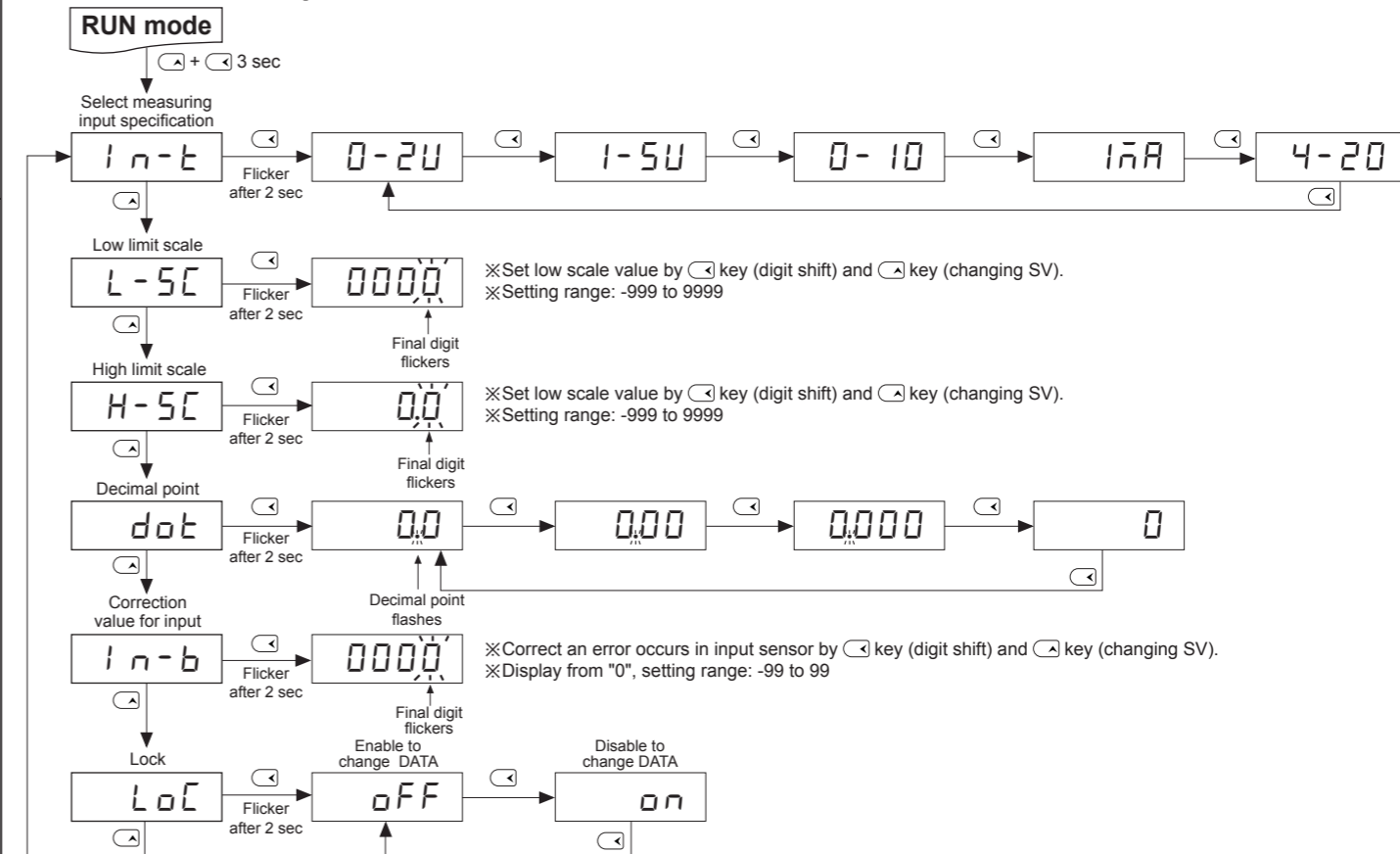
• Bracket



• Panel cut-out



■ Parameter Description

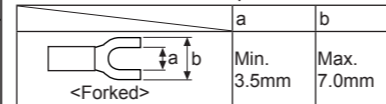


• How to change the setting value

1. When advance to MODE, change digit flashing by \leftarrow key then set DATA value by \rightarrow key.
 2. After complete DATA value setting, please press \rightarrow key for 2 sec then it will move to next MODE saving DATA.
 3. Press \rightarrow key for 2 sec to return RUN mode after changing (setting) DATA value in each MODE.
- ※ Press \rightarrow key for 2 sec, then it will return to RUN without change setting value.
 ※ When checking the setting value only in each mode. Press \rightarrow 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.

■ Input and Connection

※Use terminals of size specified below.



Input	Display	Connection
Voltage	0-2VDC	0-2U
	1-5VDC	1-5U
	0-10VDC	0-10
Current	DC0-1mA	1mA
	DC4-20mA	4-20

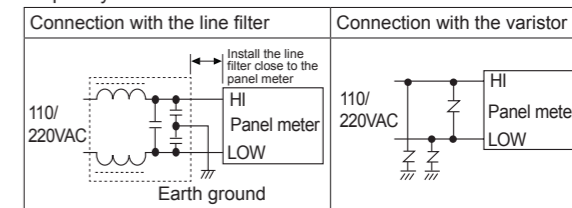
■ Error Display

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

Indication	Description	Clearance of Error
LLLL	In case of lower value than measuring input value (in case of applying DC2mA when measuring input range is selected as DC4 to 20mA)	Promptly change the input to a value that falls within the specified range.
HHHH	In case of higher value than measuring input value (in case of applying DC22mA when measuring input range is selected as DC4 to 20mA)	Promptly change the input to a value that falls within the specified range.
αUEr	In case of wrong wiring or measuring input error	Please cut off the power and then check measuring input.
Er-E	In case of damaging the memory chip by high frequency noise, strong surge noise	Consult your Autonics sales representative.

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
4. Keep away from high voltage lines or power lines to prevent inductive noise. In case installing power line and input signal line closely, use line filter or varistor at power line and shielded wire at input signal line. Do not use near the equipment which generates strong magnetic force or high frequency noise.



5. This unit may be used in the following environments.
 - ①Indoors (in the environment condition rated in 'Specifications')
 - ②Altitude max. 2,000m
 - ③Pollution degree 2
 - ④Installation category II

■ Major Products

- Photoelectric Sensors
- Fiber Optic Sensors
- Door Sensors
- Door Side Sensors
- Area Sensors
- Proximity Sensors
- Pressure Sensors
- Rotary Encoders
- Connector/Sockets
- Switching Mode Power Supplies
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper Motors/Drivers/Motion Controllers
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co., Nd: YAG)
- Laser Welding/Cutting System
- Temperature Controllers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate) Meters
- Display Units
- Sensor Controllers

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