

# Autonics DIGITAL PANEL METER M4Y SERIES INSTRUCTION MANUAL



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

## ■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.  
※⚠ symbol represents caution due to special circumstances in which hazards may occur.

**⚠ 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.

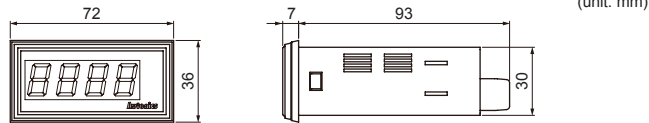
### ⚠ Warning

- 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.
- Install on a device panel to use.**  
Failure to follow this instruction may result in electric shock or fire.
- Do not connect, repair, or inspect the unit while connected to a power source.**  
Failure to follow this instruction may result in electric shock or fire.
- Check 'Connections' before wiring.**  
Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.**  
Failure to follow this instruction may result in electric shock or fire.

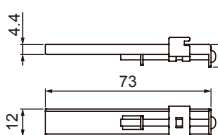
### ⚠ Caution

- When connecting the power/measurement input, use AWG 24(0.20mm<sup>2</sup>) to AWG 15(1.65mm<sup>2</sup>) 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.
- Use the unit within the rated specifications.**  
Failure to follow this instruction may result in fire or product damage.
- Use dry cloth to clean the unit, and do not use water or organic solvent.**  
Failure to follow this instruction may result in electric shock or fire.
- 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.
- Keep metal chip, dust, and wire residue from flowing into the unit.**  
Failure to follow this instruction may result in fire or product damage.

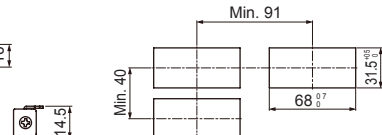
## ■ Dimensions



### ● Bracket



### ● Panel cut-out



※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	Y	-	AV	R	-	4	Measurement input / display scale
								AC measuring method
								Measurement function (input)
								Size
								Digit
								Item

<b>Number</b>	Refer to "● Measurement input range"
<b>No-mark</b>	Average value (AVG)
<b>R</b>	Root mean square value (RMS)
<b>DV</b>	DC voltage
<b>DA</b>	DC current
<b>AV</b>	AC voltage
<b>AA</b>	AC current
<b>W</b>	AC Power
<b>T</b>	Rotation (tachometer)
<b>S</b>	Speed (speed meter)
<b>DI</b>	DC4-20mA (scaling meter) ※1
<b>Y</b>	DIN W72×H36mm
<b>4</b>	1999 (3½-digit)
<b>M</b>	Meter

※1: 1-5VDC measurement input is option.  
● Measurement input range

Input	No-mark	1	2	3	4	5	6	7	8	XX	
Function											
DV	—	199.9mV	1.999V	19.99V	199.9V	300V	—	—	—	Option	
DA	—	199.9μA	1.999mA	19.99mA	199.9mA	1.999A	19.99A	199.9A	1999A	Option	
AV(R)	—	199.9mV	1.999V	19.99V	199.9V	—	400V	—	—	Option	
AA(R)	—	19.99mA	199.9mA	1.999A	19.99A	199.9A	1999A	—	—	Option	
W※1	—	199.9W	1.999kW	19.99kW	199.9kW	—	—	—	—	Option	
T(R)※2	—	1999rpm	1999rpm	1: 0-10VDC 2: 0-10VAC DX: DC input option AX: AC input option							
S(R)※2	—	1999 m/min	1999 m/min								
DI	1999	—	—	—	—	—	—	—	—	Option	

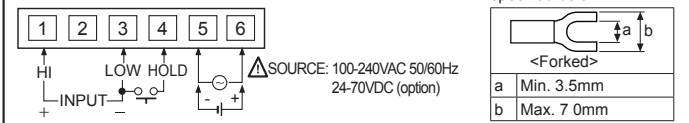
※1: Use the transducer. This specification is based on the transducer with 0-10VDC output. When the output of transducer is DC4-20mA or 1-5VDC, please use the scaling meter.  
※2: Use the tach generator. This specification is based on the tach generator with 0-10VDC or 0-10VAC output.  
※When "1999" or "4999" is flashes with a certain measurement input, disconnect power supply and then check the cables.

## ■ Specifications

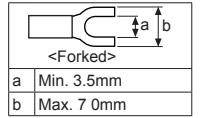
Model	M4Y-DV□ M4Y-AV(R)□	M4Y-DA□ M4Y-AA(R)□	M4Y-W□	M4Y-T(R)□ M4Y-S(R)□	M4Y-DI□
Measurement function	DC, AC voltage	DC, AC current	Power	Rotation, speed	Scaling
Max. allowable input	Max. 400VAC~ Max. 300VDC≐	Max. AC 5A Max. DC 2A	Max. 10VDC≐	Max. 10VDC≐, max. 10VAC~	DC4-20mA
Max. display range	150% for each input specification (at 400VAC~: 120%)				
Max. display range	1999				
Power supply	100-240VAC~ 50/60Hz (option: 24-70VDC≐)				
Power consumption	DC input: 2W, AC input: 4VA				
Display method	7-segment LED display (red) (character height: 14mm)				
Display accuracy	DC input: F.S.±0.2%rdg ±1-digit, AC input: F.S.±0.5%rdg ±1-digit				
Sampling cycle	300ms				
A/D conversion method	Dual slope intergal method				
Response time	2 sec (0 to 1999)				
Sampling time	2.5 times/sec				
Insulation resistance	Over 100MΩ (at 500VDC megger)				
Dielectric strength	2000VAC 50/60Hz for 1 minute				
Noise immunity	±1kV the square wave noise (pulse width: 1μs) by the noise simulator				
Vibra-tion	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 1hour			
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 10 min			
Shock	Mechanical	300m/s <sup>2</sup> (approx. 30G) in each X, Y, Z direction for 3times			
	Malfunction	100m/s <sup>2</sup> (approx. 10G) in each X, Y, Z direction for 3times			
Environ-ment	Ambient temp.	-10 to 50°C, storage: -25 to 65°C			
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH			
Unit weight	Approx. 144g				

※Environment resistance is rated at no freezing or condensation.

## ■ Connections



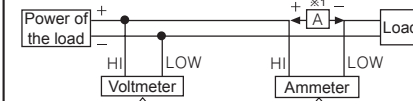
※Use terminals of size specified below.



## ■ Connections of Applications

### ○ Simultaneous connection of voltmeter and ammeter

#### ● For DC power supply

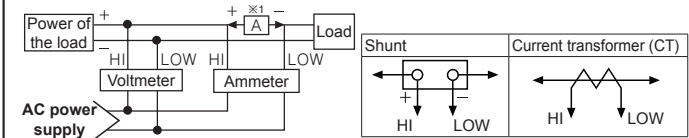


DC power supply 1 DC power supply 2

※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.

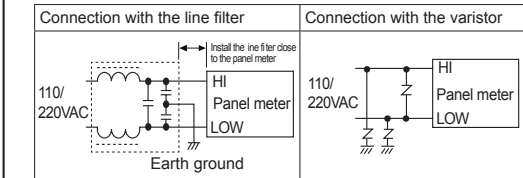
#### ● For AC power supply



※1: When measuring higher current than measurement input, use a shunt for DC current and a current transformer (CT) for AC current.

## ■ Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- 5VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
- 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.



- 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
- Stepper Motors/Drivers/Motion Controllers
- Control Switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Graphic/Logic Panels
- Field Network Devices
- Laser Marking System (Fiber, Co., Nd YAG)
- Laser Welding/Cutting System
- Temperature Controlers
- Temperature/Humidity Transducers
- SSRs/Power Controllers
- Counters
- Timers
- Panel Meters
- Tachometer/Pulse (Rate) Meters
- Display Units
- Sensor Controllers