

**Autonics**

**DIGITAL PANEL METER  
M5W 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**

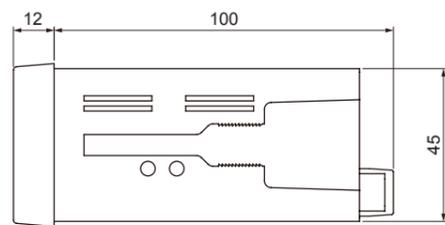
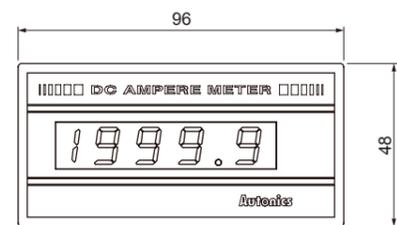
- Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.** (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.) Failure 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**

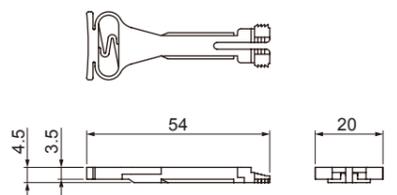
- When connecting the power/measurement input, use AWG 24(0.20mm<sup>2</sup>) to AWG 15(1.65mm<sup>2</sup>) cable and tighten the terminal screw with a tightening torque of 0.98 to 1.18N·m.** Failure to follow this instruction may result in fire or malfunction due to contact failure.
- Use the unit within 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.

**■ Dimension**

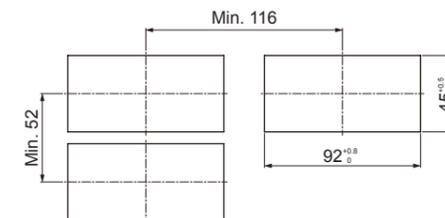
(unit: mm)



**• Bracket**



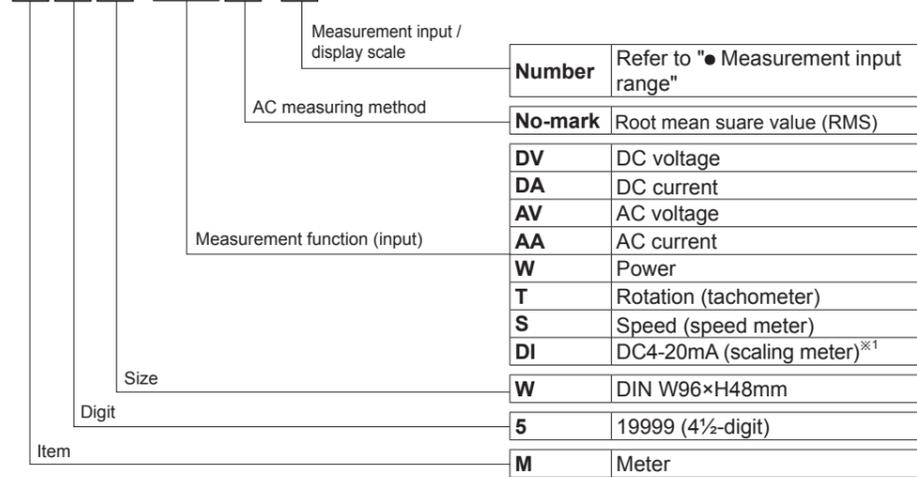
**• Panel cut-out**



※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 5 W - AV - 4**



※1: 1-5VDC measurement input is option.

**• Measurement input range**

Input Function	No-mark	1	2	3	4	5	6	7	8	XX	
DV	—	199.99mV	1.9999V	19.999V	199.99V	300.0V	—	—	—	Option	
DA	—	199.99uA	1.9999mA	19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A	Option	
AV	—	199.99mV	1.9999V	19.999V	199.99V	—	400.0V	—	—	Option	
AA	—	19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A	—	—	Option	
W <sup>※1</sup>	—	199.99W	1.9999kW	19.999kW	199.99kW	1999.9kW	—	—	—	Option	
T <sup>※2</sup>	—	19999rpm	19999rpm	1: 0-10VDC 2: 0-10VAC							—
S <sup>※2</sup>	—	19999 m/min	19999 m/min	DX: DC input option AX: AC input option							—
DI	19999	—	—	—	—	—	—	—	—	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 "19999" or "19999" is flashes with a certain measurement input, disconnect power supply and then check the cables.

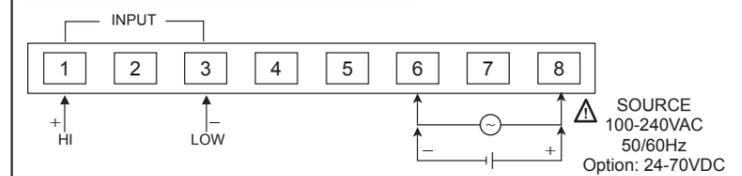
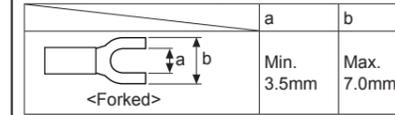
**■ Specifications**

Model	M5W-DV-□ M5W-AV-□	M5W-DA-□ M5W-AA-□	M5W-W-□	M5W-T-□ M5W-S-□	M5W-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	19999				
Power supply	100-240VAC~ 50/60Hz (option: 24-70VDC=)				
Allowable voltage range	90 to 110% of rated voltage				
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				
Vibration	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. 172g				

※Environment resistance is rated at no freezing or condensation.

**■ Connections**

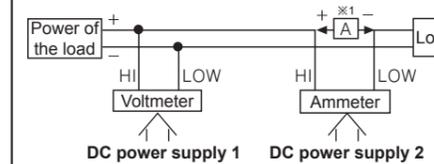
※Use terminals of size specified below.



**■ Connections of Applications**

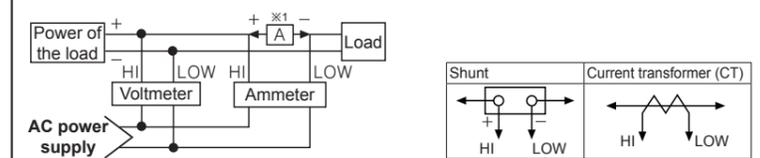
**○ Simultaneous connection of voltmeter and ammeter**

**• For DC power supply**



※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.

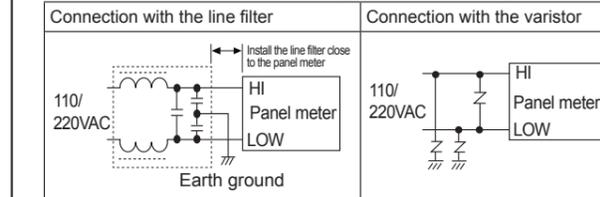
**• For AC power supply**



※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.
- 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.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000m
  - Pollution degree 2
  - Installation 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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