

DIGITAL PANEL METER M5W 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.

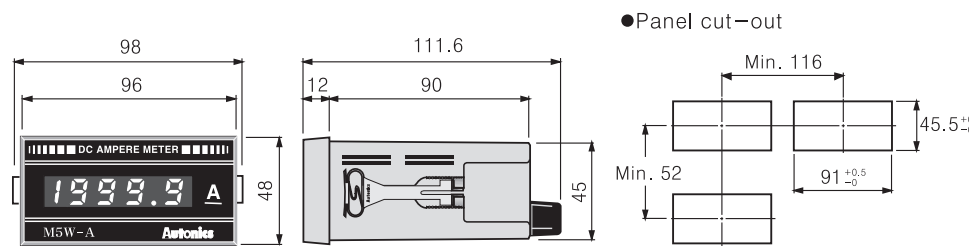
Warning

- 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.
- It must be mounted on panel.**
It may give an electric shock.
- Do not repair or check up when power on.**
It may give an electric shock.
- Please check the number of terminal when connect power line or measuring input.**
It may cause a fire.

Caution

- This unit shall not be used outdoors.**
It might shorten the life cycle of the product or give an electric shock.
- When wire connection for power input and measuring input, the tightening strength for screw bolt on terminal block should be over than 0.74N·m ~ 0.90N·m.**
It may result in malfunction or fire due to contact failure.
- Please observe specification rating.**
It might shorten the life cycle of the product and cause a fire.
- 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 the product.
- 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.
- Do not inflow dust or wire dregs into inside of this unit.**
It may cause a fire or mechanical trouble.
- Please connect properly after checking the polarity of measuring terminals.**
It may cause a fire or explosion.

Dimension



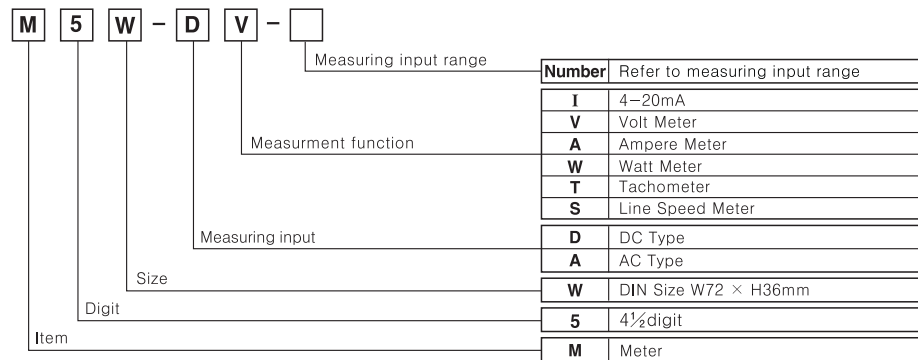
*The above specifications are subject to change and some models may be discontinued without notice.

Specification

Model	M5W-AV-□	M5W-DV-□	M5W-AA-□	M5W-DA-□	M5W-W-□	M5W-T-□	M5W-S-□	M5W-DI-□
Max. allowable input	Max. 400VAC	Max. 300VDC	Max. AC 5A	Max. DC 2A	Max. 10VDC	Tacho-generator(0-10V)		DC4-20mA
Max. display range	150% for each input specification (At 400VAC: 120%) Max. 1999							
Measurement function	AC Voltage(RMS)	DC Voltage	AC Ampere(RMS)	DC Ampere	AC Watt	rpm	speed	Scale
Power supply	100-240VAC 50/60Hz (Option : 24-70VDC)							
Allowable operation voltage	90 to 110% of rated voltage							
Power consumption	Approx. 4VA			Approx. 5VA			Approx. 4VA	
Display method	7Segment LED Display							
Sampling cycle	300ms							
A/D conversion method	Dual slope integral method							
Response time	2sec. (0 to Max.)							
Sampling times	2.5 times/sec.							
Insulation resistance	Min. 100MΩ (at 500VDC megger)							
Dielectric strength	2000VAC 50/60Hz for 1 minute							
Noise strength	±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 of X, Y, Z directions for 1 hour Malfunction: 0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes							
Shock	Mechanical: 300m/s ² (Approx. 30G) 3 times at X, Y, Z direction Malfunction: 100m/s ² (Approx. 10G) 3 times at X, Y, Z direction							
Environment	Ambient temperature: 0 to 50°C, Storage temperature: -25 to 65°C Ambient humidity: 35 to 85%RH, Storage humidity: 35 to 85%RH							
Display accuracy	DC: F.S. ±0.2% rdg ±1Digit, AC: F.S. ±0.5% rdg ±1Digit							
Weight	Approx. 172g							

*Environment resistance is rated at no freezing or condensation.

Ordering information



Measuring input range

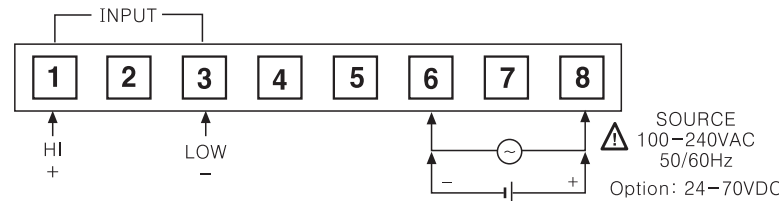
Range Model	Blank	1	2	3	4	5	6	7	8	X
AV		199.99mV	1.9999V	19.999V	199.99V	400.0V	-	-	-	Option
AA		19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A	-	-	Option
DV	-	199.99mV	1.9999V	19.999V	199.99V	300.0V	-	-	-	Option
DA	-	199.99μA	1.9999mA	19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A	Option
W	-	-	1.9999kW	19.999kW	199.99kW	1999.9kW	-	-	-	Option
T	-	19999rpm	19999rpm	1: 0 to 10VDC measurement input 2: 0 to 10VAC measurement input X: measurement input except 1, 2						
S	-	19999m/min	19999m/min							
DI	19999	Option (Display: 0 to 19999)								Option

*1: When the output of power converter is 10VDC, measuring input value is maximum. In case that output is DC4-20mA, scaling meter should be used.

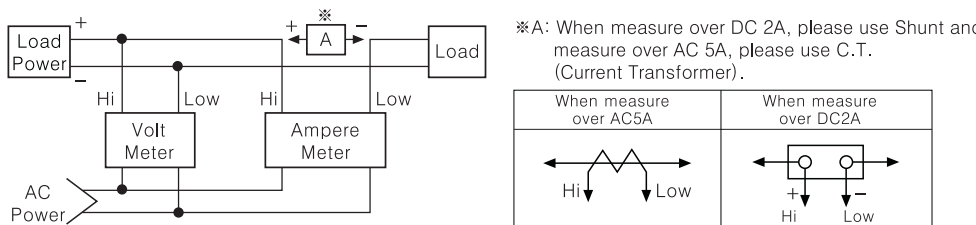
*2: 1-5VDC measuring input is optional.

*Power converter should be used with Watt meter and Tachometer/Line speed meter should be used with Tacho-generator.

Connection

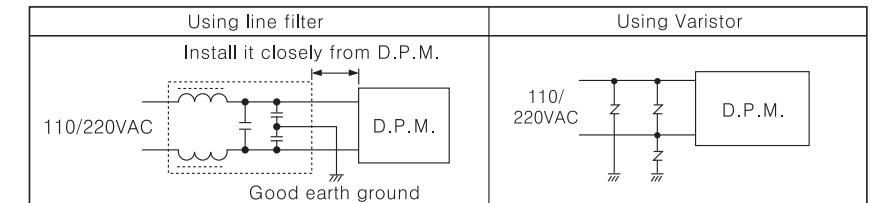
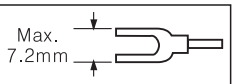


General block diagram

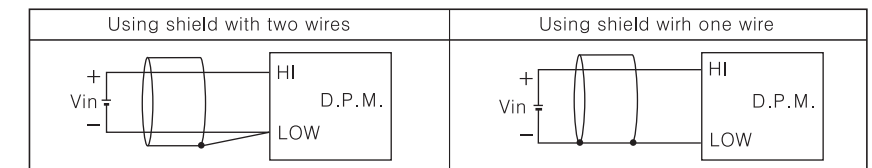


Caution for using

- Please use the terminal (Pitch: 7.2mm max.) when connecting the AC power supply.
- Please use separated line from high voltage line or power line in order to avoid inductive noise.
- Please use power switch or circuit breaker in order to turn OFF the power.
- The switch or circuit breaker should be installed near by users for safety.
- Be sure to avoid using this unit near by machinery makes strong high frequency noise. (Welding machine, high capacity SCR unit etc.)
- When input applied, if "19999" or "19999" are displayed, it has some trouble with measuring input, please check the line after power off.
- Noise inflow from power line can be serious problem for products driving of D.P.M. (Digital panel meter) by AC power. Even though there is condenser for protecting noise between lines in power transformer, but this display unit as small size product, it is very difficult to install protection components. Therefore, please install line filter, varistor or noise absorber in external lines when voltage failure occurred by power relay or magnet S/W operation, spark with high voltage.



- Input line: Shield wire must be used when the measuring input line is getting longer or there are lots of noises.



- Installation environment
 - It shall be used indoor
 - Altitude Max. 2000m
 - Pollution Degree 2
 - Installation Category II

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

Main 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, CO₂, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate) meters
- Display units
- Sensor controllers

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