

# Autonics

## 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

**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.

**2. It must be mounted on panel.**

It may give an electric shock.

**3. Do not repair or check up when power on.**

It may give an electric shock.

**4. Please check the number of terminal when connect power line or measuring input.**

It may cause a fire.

### Caution

**1. This unit shall not be used outdoors.**

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

**2. 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.

**3. Please observe specification rating.**

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

**4. 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.

**5. 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.

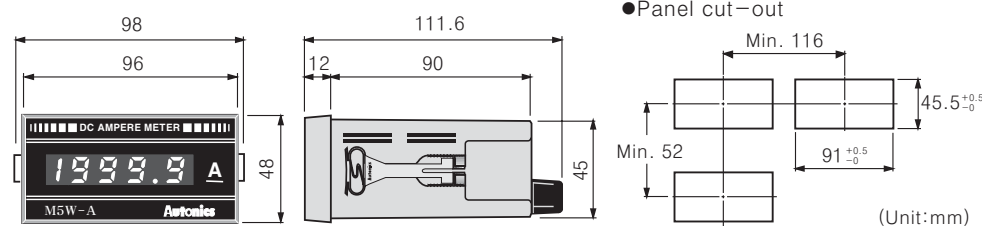
**6. Do not inflow dust or wire dregs into inside of this unit.**

It may cause a fire or mechanical trouble.

**7. Please connect properly after checking the polarity of measuring terminals.**

It may cause a fire or explosion.

### Dimension



\*The above specification are changeable without notice anytime.

### Specification

Model	M5W-AV-□	M5W-DV-□	M5W-AA-□	M5W-DA-□	M5W-W-□	M5W-T-□	M5W-S-□	M5W-DI-□
Max. allowable input	Max. AC400V	Max. DC300V	Max. AC5A	Max. DC2A	Max. DC10V	Tacho-generator(0~10V)		DC4~20mA
Max. display range	150% for each input specification (At AC400V:120%)							
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	Approx. 5VA
Display method	7Segment LED Display							
Sampling cycle	300ms							
A/D conversion method	Dual slope intergal method							
Response time	2sec.(0 to Max.)							
Input					DC0~10V(Converter output)	DC0~10V, AC0~10V		DC4~20mA
Sampling times	2.5 times/sec.							
Insulation resistance	Min. 100MΩ (at 500VDC)							
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 <sup>2</sup> (Approx. 30G) 3 times at X, Y, Z direction						
	Malfunction	100m/s <sup>2</sup> (Approx. 10G) 3 times at X, Y, Z direction						
Ambient temperature	0 to 50°C(at non-freezing status)							
Storage temperature	-25 to 65°C(at non-freezing status)□							
Ambient humidity	35 to 85%RH							
Display accuracy	DC:F · S ±0.2% rdg ±1Digit, AC:F · S ±0.5% rdg ±1Digit							
Weight	Approx. 317g							

### Ordering information

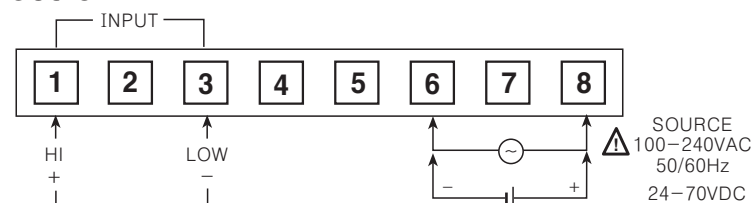
M	5	W	□	□	□	Main function
M	5	W	□	□	□	Meter
						4 1/2 digit
						DIN Size W96 × H48mm
			D			DC Type
			A			AC Type
			I			4~20mA
			V			Volt Meter
			A			Ampere Meter
			W			Watt Meter
			T			Tachometer
			S			Line Speed Meter
						Specification

### Measuring range

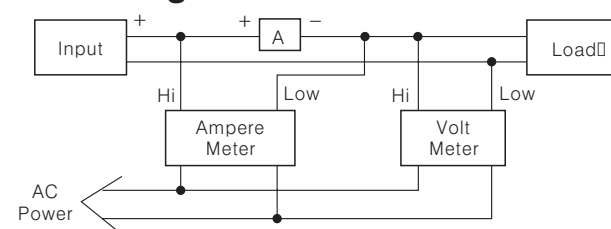
Range Model	1	2	3	4	5	6	7	8
AV	199.99mV	1.9999V	19.999V	199.99V	400.0V			
AA	19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A		
DV	199.99mV	1.9999V	19.999V	199.99V	300.0V			
DA	199.99μA	1.9999mA	19.999mA	199.99mA	1.9999A	19.999A	199.99A	1999.9A
W		1.9999kW	19.999kW	199.99kW	1999.9kW			
T	DC0~10V	AC0~10V						
S	DC0~10V	AC0~10V						
DI	Option(Display:0 to 19999)							

- When measure over DC 2A, please use Shunt and measure over AC 5A, please use C · T (Current Transformer).
- Power converter should be used with Watt meter and Tacho/Speed meter should be used with Tacho-generator.

### Connection

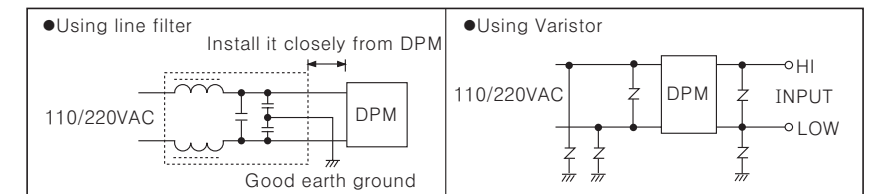
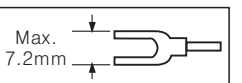


### General block diagram

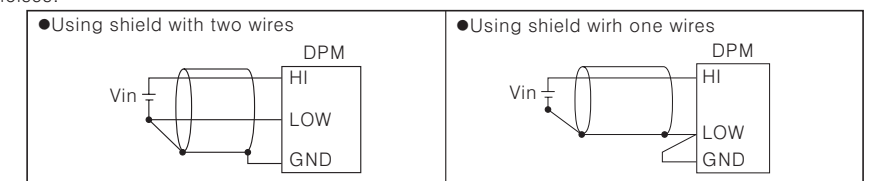


### Caution for using

- Installation environment
  - It shall be used indoor
  - Altitude Max. 2000m
  - Pollution Degree 2
  - Installation Category II.
- Please use the terminal(M3.5, Max. 7.2mm) when connect the AC power source.
- Please use separated line from high voltage line or power line in order to avoid inductive noise.
- Please install power switch or circuit breaker in order to cut the power supply.
- 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 DPM 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.



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

### Main products

- COUNTER
- TIMER
- TEMPERATURE CONTROLLER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- PROXIMITY SENSOR
- PHOTOELECTRIC SENSOR
- FIBER OPTIC SENSOR
- PRESSURE SENSOR
- ROTARY ENCODER
- SENSOR CONTROLLER
- POWER CONTROLLER
- STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO<sub>2</sub>, Nd:YAG)

## Autonics Corporation

<http://www.autonics.com>

Satisfiable Partner For Factory Automation

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