

# Autonics

## DIGITAL PANEL METER M4Y 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

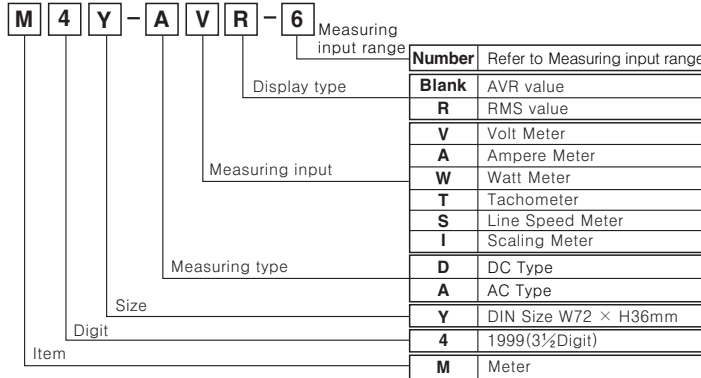
- In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc.), it requires installing fail-safe device, or contact us for information on type required.**  
It may result in serious damage, fire or human injury.
- It must be mounted on panel.**  
It may give an electric shock.
- Do not repair, check up or connect when power on and measuring input applied.**  
It may give an electric shock.

### 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 then 0.74N·m~0.90N·m.**  
It might shorten the life cycle of the product and cause a fire.
- 5VDC supply power type is not insulated between measuring input terminal and power supply terminal.**  
It may cause mechanical trouble of measuring target or result in product damage.
- Please separate the power supply when use it as Volt meter and Ampere meter at the same time.**  
It may cause mechanical trouble of measuring target or result in product damage.
- Please wire properly after check polarity of power.**  
It may cause a fire or explosion and result in product damage.
- 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 this 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.

\*The above specification are changeable without notice anytime.

### Ordering information



### Measuring input range

Input Function	Blank	1	2	3	4	5	6	7	8	X	
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	
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	
W*1	-	199.9W	1.999kW	19.99kW	199.9kW	-	-	-	-	Option	
T(R)	-	1999rpm	1999rpm	1: 0 to 10VDC measurement input 2: 0 to 10VAC measurement input X: measurement input except 1, 2							
S(R)	-	1999 m/min	1999 m/min								
DI*2	-	1999									Option

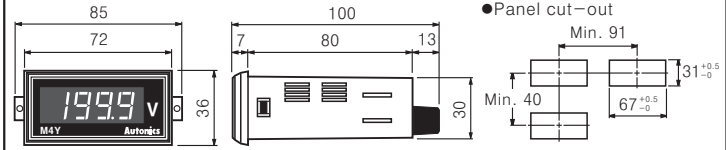
- \*1: When the output of power converter is 10VDC, measuring input value is maximum. In case that output is DC4~20mA, scaling meter should be used.
- \*2: 1~5VDC measuring input is optional.
- \*Power converter should be used with Watt meter and Tachometer/Line speed meter should be used with Tacho-generator.

### Specification

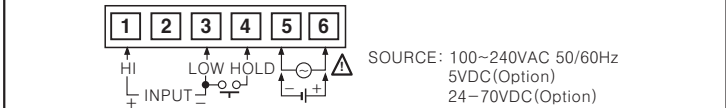
Model	M4Y-DV-□ M4Y-AV-□-□	M4Y-DA-□ M4Y-AA-□-□	M4Y-W-□	M4Y-T□-□ M4Y-S□-□	M4Y-DI
Measurement function	DC, AC voltage	DC, AC current	AC watt	rpm, speed	Scaling
Max. allowable input	Max. 400VAC Max. 300VDC	Max. AC 5A Max. DC 2A	Max. 10VDC	Tacho-generator output(0~10V)	DC4~20mA
Max. display range	150% per each range (400VAC:120%) Max. 1999				
Power supply	100~240VAC ±10% 50/60Hz(Option:5VDC ±10%, 24~70VDC ±10%)				
Power consumption	DC: 2W, AC: 4VA				
Display method	7Segment LED Display(Character height: 14mm)				
Display accuracy	DC: F.S. ±0.2% rdg ±1digit, AC: F.S. ±0.5% rdg ±1digit				
Sampling cycle	300ms				
A/D conversion method	Dual slope intergal method				
Response time	2sec.(0 to 1999)				
Sampling time	2.5 times/sec.				
Insulation resistance	100MΩ Min. (at 500VDC megger)				
Dielectric strength	2000VAC 50/60Hz for 1 minute				
Noise strength	±2kV 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 1hour			
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions 10minutes			
Shock	Mechanical	300m/s <sup>2</sup> (30G) 3times at X, Y, Z direction			
	Malfunction	100m/s <sup>2</sup> (10G) 3times at X, Y, Z direction			
Environment	Ambient temperature	-10~50°C, Storage temperature: -25 ~ 65°C			
	Ambient humidity	35 ~ 85%RH, Storage humidity: 35 ~ 85%RH			
Weight	Approx. 144g□				

\*Environment resistance is rated at no freezing or condensation.

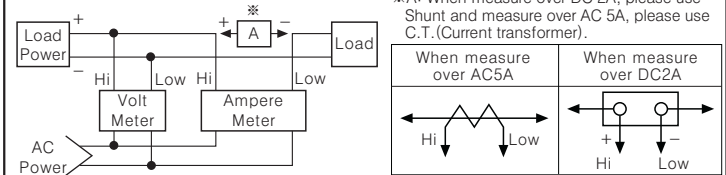
### Dimensions



### Connections

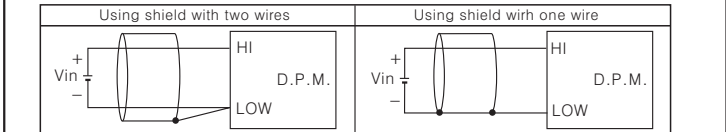


### General block diagram



### 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 "1999" or "1999" or "1999" 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.



- Please use insulated transformer for 5VDC type product.
- Installation environment
  - ①It shall be used indoor
  - ②Altitude Max. 2000m
  - ③Pollution Degree 2
  - ④Installation Category II.

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

### Major products

- Proximity sensors
- Area sensors
- Door/Door side sensors
- Counters
- Rotary encoders
- Display units
- Power controllers
- Sensor controllers
- Panel meters
- Graphic/Logic panels
- Temperature controllers
- Tachometer/Pulse(Rate) meters
- Temperature/Humidity transducers
- Switching power supplies
- Stepping motors/drivers/motion controllers
- Field network devices
- Laser marking system(CO<sub>2</sub>, Nd:YAG)
- Laser welding/soldering system
- Photoelectric sensors
- Fiber optic sensors
- Pressure sensors
- Timers

**Autonics Corporation**  
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**Satisfiable Partner For Factory Automation**

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