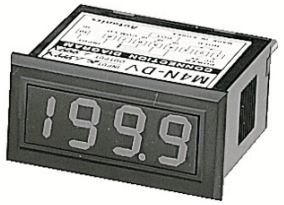
Autonics

DIGITAL PANEL METER
M4N SERIES

INSTRUCTION MANUAL



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

■ Safety Considerations

※Please observe all safety considerations for safe and proper product operation to avoid hazards.

※Safety considerations are categorized as follows.
⚠ **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.

※The symbols used on the product and instruction manual represent the following
⚠ symbol represents caution due to special circumstances in which hazards may occur.

⚠Warning

1. **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.
2. **Install on a device panel to use.**
   Failure to follow this instruction may result in fire.
3. **Do not connect, repair, or inspect the unit while connected to a power source.**
   Failure to follow this instruction may result in fire.
4. **Check 'Connections' before wiring.**
   Failure to follow this instruction may result in fire.
5. **Do not disassemble or modify the unit.**
   Failure to follow this instruction may result in fire.

⚠Caution

1. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
2. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in fire.
3. **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.
4. **Keep metal chip, dust, and wire residue from flowing into the unit.**
   Failure to follow this instruction may result in fire or product damage.

※**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 N – D V – 0 1

	Item		
M	Item	M	Meter
4	Digit	4	1999(3½ Digit)
N	Size	N	DIN W48×H24mm
D	Measuring input	D	DC Type
V	Measurement functions	V	Voltage
		A	Current
		I	Scaling(DC4-20mA)※2
0	Power supply	0	5VDC
		1	12-24VDC
1	Measuring input range		DC volt input F.S. / DC ampere input F.S.
		1	199.9mV / 199.9μA
		2	1.999V / 1.999mA
		3	19.99V / 19.99mA
		4	199.9V / 199.9mA
		Blank	Option / Option

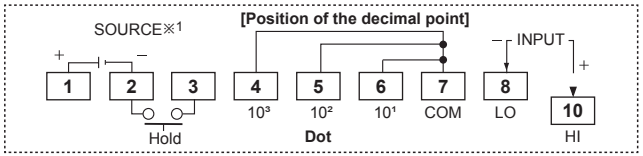
※1: M4N series is to measure DC only. AC voltage and AC current is not available to be measured.
※2: 1-5VDC measuring input is optional.

■ Specifications

Model		M4N-DV-□□	M4N-DA-□□	M4N-DI-□□
Measurement function		DC voltage	DC current	DC4-20mA
Power supply		5VDC⎓, 12-24VDC⎓		
Allowable voltage range		90 to 110% of rated voltage		
Power consumption		2W		
Display method		7Segment LED Display(Character height: 10mm)		
Max.display range		Max. 1999		
Display accuracy		F.S.±0.2% rdg ±1digit		
Sampling cycle		300ms		
A/D conversion method		Dual intergal method		
Response time		Approx. 2sec(0 to 1999)		
Max.allowable input		150% of measurement input range		
Sampling time		2.5 times/sec		
Insulation resistance		Over 100MΩ(at 500VDC megger)		
Dielectric strength		2000VAC 50/60Hz for 1 minute		
Noise immunity		±100V 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 1 hour		
	Malfunction	0.5mm amplitude at frqueny of 10 to 55Hz in each X, Y, Z direction for 10 minutes		
Shock	Mechanical	300m/s²(approx. 30G) in each X, Y, Z direction for 3 times		
	Malfunction	100m/s²(approx. 10G) in each X, Y, Z direction for 3 times		
Environ-mnet	Ambient temperature	-10 to 50℃, storage: -20 to 60℃		
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH		
Unit weight		Approx. 44g		

※Environment resistance is rated at no freezing or condensation.

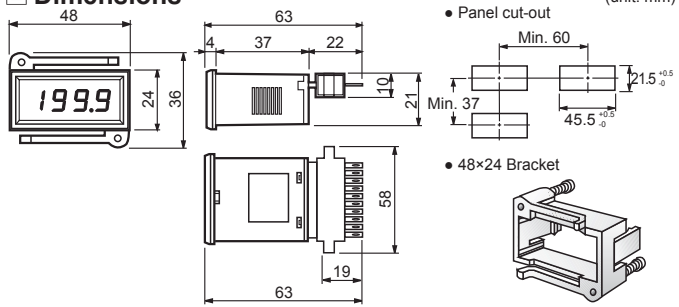
■ Connections



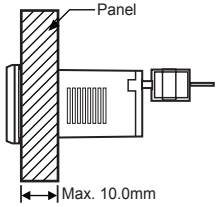
※1: 5VDC, 12-24VDC
※When changing the position of the decimal point, disconnect switching pattern point on PCB and change the decimal point in external terminal socket.
※When " ı" or "- ı" is flashes with a certain measurement input, disconnect power supply and then check the cables.

■ Dimensions

(unit: mm)



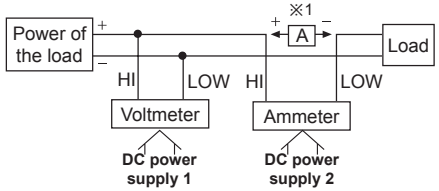
■ Mounting



※Panel boad tickness should be less than 10.0mm.

■ Connections of Applications

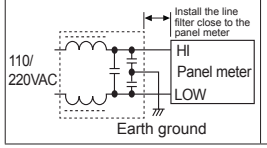
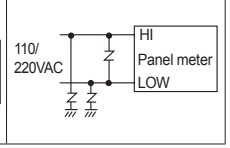
◎ **Simultaneous connection of voltmeter and ammeter**



※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.

■ Cautions during Use

1. Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
2. 5VAC, 12-24VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
3. Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
4. 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.

Connection with the line filter	Connection with the varistor
	

5. 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
- 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_2, 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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