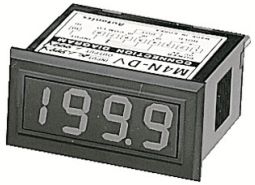
Autonics

DIGITAL PANEL METER
M4N SERIES
INSTRUCTION MANUAL



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

■ Ordering Information

M 4 N – DV – 0 1

		DC volt input F.S.	DC ampere input F.S.
Measurement input	1	199 9mV	199 9μA
	2	1 999V	1 999mA
	3	19 99V	19 99mA
	4	199 9V	199 9mA
	X	Option	Option
Power supply	0	5VDC	
	1	12-24VDC	
Measurement function (input)	DV	DC voltage	
	DA	DC current	
	DI	DC4-20mA (scaling meter)※1	
Size	N	D N W48×H24mm	
Digit	4	1999 (3½-digit)	
Item	M	Meter	

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

■ 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

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

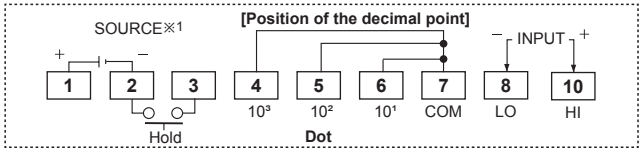
1. **Use the unit within the rated specifications.**
   Failure to follow this instruction may result in fire or product damage.
2. **Use dry cloth to clean the unit, and do not use water or organic solvent.**
   Failure to follow this instruction may result in fire.
3. **Do not use the unit in the place 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.

■ Specifications

Model		M4N-DV-□□	M4N-DA-□□	M4N-DI-□X
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		7-segment LED Display (red) (character height: 10mm)		
Max. display range		1999		
Display accuracy		F.S ±0.2%rdg ±1-digit		
Sampling cycle		300ms		
A/D conversion method		Dual intergal method		
Response time		Approx. 2 sec (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		
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each X, Y, Z direction for 1 hour		
	Malfunction	0.5mm amplitude at frqeuncy 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 temp.	-10 to 50℃, storage: -20 to 60℃		
	Ambient humi.	35 to 85%RH, storage: 35 to 85%RH		
Unit weight		Approx. 44g		

※Environment resistance is rated at no freezing or condensation.

■ Connections

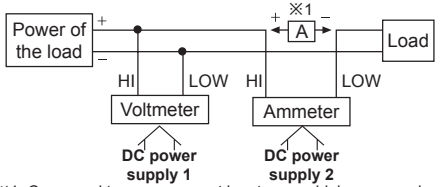


※1: 5VDC, 12-24VDC
※When changing the position of the decimal point, disconnect switching pattern point on PCB and change the decimal point in external terminal socket.
※When "ㅣ" or " ㅣ" is flashes with a certain measurement input, disconnect power supply and then check the cables.

※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).

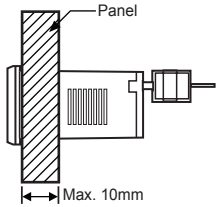
■ Connections of Applications

◎ 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.

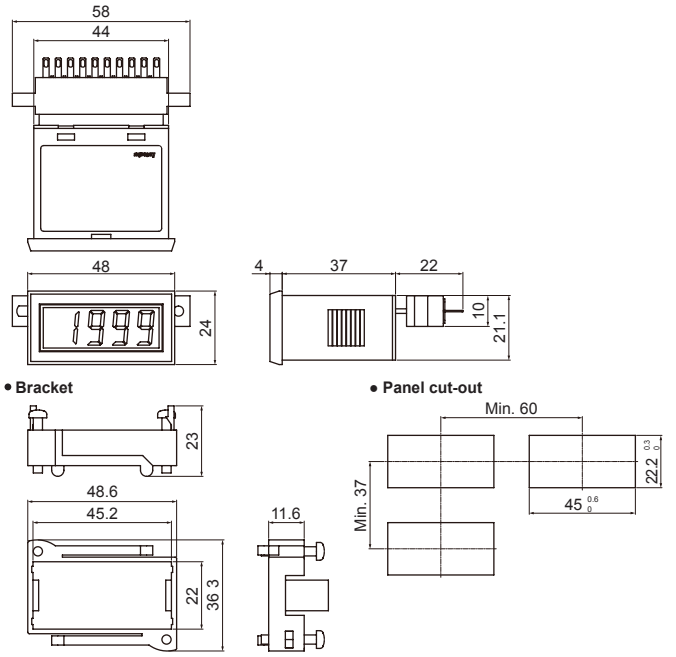
■ Mounting



※Panel boad tickness should be less than 10mm.

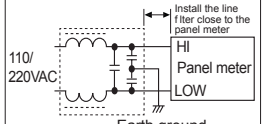
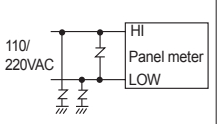
■ Dimensions

(unit: mm)



■ 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 ■ Temperature Controllers
■ Fiber Optic Sensors ■ Temperature/Humidity Transducers
■ Door Sensors ■ SSRs/Power Controllers
■ Door Side Sensors ■ Counters
■ Area Sensors ■ Timers
■ Proximity Sensors ■ Panel Meters
■ Pressure Sensors ■ Tachometer/Pulse (Rate) Meters
■ Rotary Encoders ■ Display Units
■ Connector/Sockets ■ Sensor Controllers
■ 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