

Loop-Power Panel Meters (Indicator)

M4NS, M4YS Series
INSTRUCTION MANUAL

TCD210074AB

Autonics

Thank you for choosing our Autonics product.

Read and understand the instruction manual and manual thoroughly before using the product.

For your safety, read and follow the below safety considerations before using.

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.

Keep this instruction manual in a place where you can find easily.

The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Follow Autonics website for the latest information.

Safety Considerations

- Observe all ‘Safety Considerations’ for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 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 personal injury, economic loss or fire.
- Do not use the unit in the place where flammable / explosive / corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact or salinity may be present.**
- Install on a device panel to use.** Failure to follow this instruction may result in fire.
- Do not connect, repair, or inspect the unit while connected to a power source.** Failure to follow this instruction may result in fire.
- Check ‘Connections’ before wiring.** Failure to follow this instruction may result in fire.
- Do not disassemble or modify the unit.** Failure to follow this instruction may result in fire.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- When connecting the power / measurement input and relay output, use AWG 24 (0.20 mm²) to AWG 15 (1.65 mm²) cable or over and tighten the terminal screw with a tightening torque of 0.98 to 1.18 N m.** Failure to follow this instruction may result in fire or malfunction due to contact failure.
- Use the unit within the rated specifications.** Failure to follow this instruction may result in fire or product damage.
- Use a dry cloth to clean the unit, and do not use water or organic solvent.** Failure to follow this instruction may result in fire.
- Keep the product away from metal chip, dust, and wire residue which flow into the unit.** Failure to follow this instruction may result in fire or product damage.

Cautions during Use

- Follow instructions in ‘Cautions during Use’.
 - Otherwise, It may cause unexpected accidents.
 - Power supply should be insulated and limited voltage / current or Class 2, SELV power supply device.
 - Install a power switch or circuit breaker in the easily accessible place for supplying or disconnecting the power.
 - 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
110 / 220 VAC~ Install the line filter close to the panel meter Panel meter Earth ground	110 / 220 VAC~ Panel meter HI LOW

- This unit may be used in the following environments.
 - Indoors (in the environment condition rated in ‘Specifications’)
 - Altitude max. 2,000 m
 - Pollution degree 2
 - Installation category II

Ordering Information

This is only for reference, the actual product does not support all combinations.

For selecting the specified model, follow the Autonics webstie.

M 4 ① ② - ③ ④

- ① Size**

N: DIN W 48 × H 24 mm

Y: DIN W 72 × H 36 mm
- ③ Power**

N: Loop powered
- ② Measurement method**

S: Scaling
- ④ Input type**

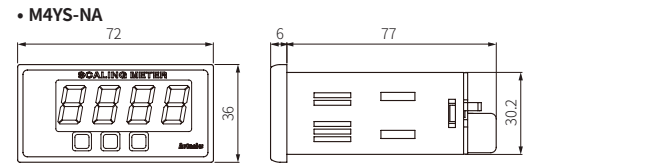
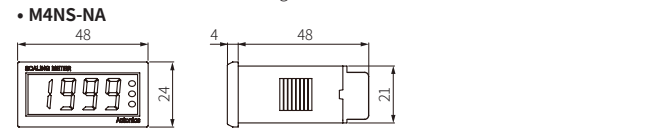
A: Current (DC 4 - 20 mA)

Product Components

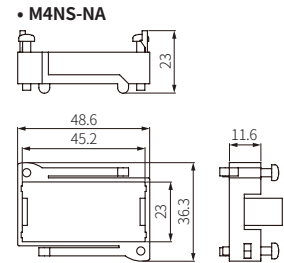
Model	M4NS-NA	M4YS-NA
Product components	Product, instruction manual	
Bracket	× 1	× 2

Dimensions

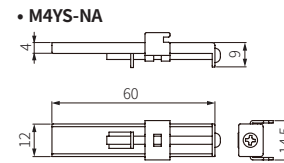
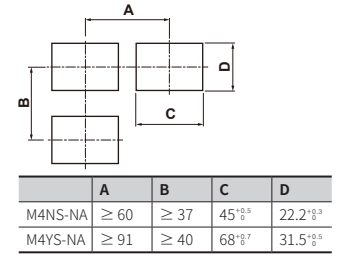
- Unit: mm, For the detailed drawings, follow the Autonics website.



■ Bracket

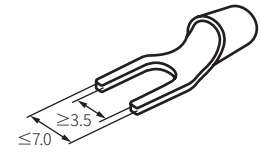


■ Panel cut-out

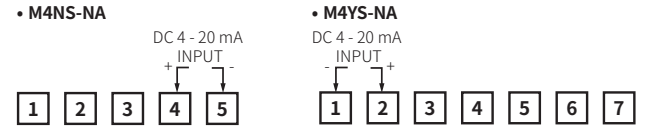


Cautions during Wiring

- Unit: mm, Use terminals of size specified below.



Connections



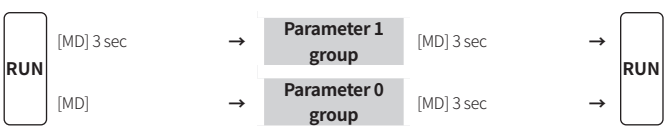
Specifications

Model	M4NS-NA	M4YS-NA
Input type	DC 4 - 20 mA	
Impedance between input lines ⁰¹⁾	≤ 600 Ω	
Display method	7-segment (red) LED (character height: 10 mm)	7-segment (red) LED (character height: 14 mm)
Display accuracy	Dependent on the ambient temperature	
25 ± 5 °C	0.3 % F.S. rdg ± 1-digit	
-10 to 50 °C	0.4 % F.S. rdg ± 1-digit	
Display scale	-1999 to 9999 (4-digit)	
Display cycle	0.5, 1, 2, 3, 4, 5 sec	
Resolution	1 / 12,000	
Unit weight	≈ 44 g	≈ 110 g
Certification	EAC	

01) Based on input power 24 VDC=

Power supply	Loop powered type
Insulation resistance	≥ 100 MΩ (500 VDC= megger)
Dielectric strength	Between the charging part and the case : 2,000 VAC ~ 50 / 60 Hz for 1 min
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 1 hours
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 min
Shock	300 m/s ² (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s ² (≈ 10 G) in each X, Y, Z direction for 3 times
Ambient temperature	-10 to 50 °C, storage: -25 to 60 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)

Mode Setting



Parameter Setting

- If any key is not entered for 60 sec in each parameter, it returns to RUN mode.
- [MD] key: Saves current setting value and moves to the next parameter.
- [◀] key: Checks fixed value / Changes setting digits.
- [▲] key: Changes setting values.

■ Parameter 1 group				
Parameter	Display	Defaults	Setting range	
1-1	Low-limit scale	L - 5 C	0 4 0 0	-1.999 to 9.999, -19.99 to 99.99, -199.9 to 999.9, -1999 to 9999 • Low-limit display value for 4 mA input
1-2	High-limit scale	H - 5 C	2 0 0 0	-1.999 to 9.999, -19.99 to 99.99, -199.9 to 999.9, -1999 to 9999 • High-limit display value for 20 mA input
1-3	Decimal point position	d o t	0 0 0 0	0000, 000.0, 00.00, 0.000
1-4	Low-limit display value correction	l o w L	0 0 0 0	-100 to 100 digit
1-5	High-limit display value correction	h i g H	1 0 0 0	0.900 to 1.100 %
1-6	Peak monitoring delay time	P E k t	0 1 5	0 to 30 sec
1-7	Display cycle	d i s t	0 5 5	0.5, 1.0, 2.0, 3.0, 4.0, 5.0 sec
1-8	Error display range	E r r t	3	0: HHHH / LLLL are displayed when input current is over 0 % out DC 4 - 20 mA by high / low-limit 1: HHHH / LLLL are displayed when input current is over 1 % out DC 4 - 20 mA by high / low-limit 2: HHHH / LLLL are displayed when input current is over 2 % out DC 4 - 20 mA by high / low-limit 3: HHHH / LLLL are displayed when input current is over 3 % out DC 4 - 20 mA by high / low-limit 4: L-SC / H-SC are displayed when input current is out of DC 4-20 mA
1-9	Lock	L o c	a F F	ON, OFF • Disable to change or set parameter but enable to check the setting value in parameter group.

■ Parameter 0 group

Parameter	Display	Defaults	Reset	Display condition
0-1	Display max. peak value	P E k H	2 0 0 0	Press the [◀] key to reset. 1-6 Peak monitoring delay time: except 0
0-2	Display min. peak value	P E k L	4 0 0	

Error

Display	Description	
HHHH	Turns on when the current display value exceeds the range of max. display value (9999 / 1999)	The error display range is different depending on the setting value of the 1-8 Error display range. ⁰¹⁾
LLLL	Turns on when the current display value exceeds the range of min. display value (-1999 / 9999)	

01) DC 4-20 mA (16 mA scale) input, based on 1-8 Error display range = 3
If the input current is 3 % higher than 20 mA, 16 mA × 3 % = 0.48 mA → 20 mA + 0.48 mA = 20.48 mA, so HHHH is displayed when the input current is over 20.48 mA.
If the input current is 3 % lower than 4 mA, 16 mA × 3 % = 0.48 mA → 4 mA - 0.48 mA = 3.52 mA, so LLLL is displayed when the input current is below 3.52 mA.