4 Digit Multi Panel Meters

M4NN Series

CATALOG

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

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

Features

- Various input / output options (by model)
  - Input options: DC voltage, DC current, AC voltage, AC current
  - Output options: NPN open collector / PNP open collector (default: indicator / no output)
- Isolated input and power modules allow powering of multiple units using a single power supply
- Display range: -1999 to 9999
- High / low-limit display scale function
- AC frequency measurement (range: 0.1 to 9999 Hz)
- Preset output mode: OUT1, GO, OUT2 (NPN / PNP open collector output)
- Power factor display function: displays analog input (1 - 5 V, 4 - 20 mA) from power factor converters as -0.50 to 1.00 to 0.50
- Various functions: peak display value monitoring, display cycle delay, zero-point adjustment, peak display value correction
- Power supply: 5 - 24 VDC⎓ (isolated type)

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics webstie.

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❶ Input type
DV: DC voltage
DA: DC current
AV: AC voltage
AA: AC current

❷ Preset output
N: Indicator
1: NPN open collector
2: PNP open collector

Product Components

- Product (+ bracket)
- Unit sticker
- Instruction manual

Specifications

Model	M4NN-DV-1□	M4NN-DA-1□	M4NN-AV-1□	M4NN-AA-1□
Input type	DC voltage	DC current	AC voltage [01]	AC current [01]
Max. allowable input	Dependent on the input type			
+DC input	≈ -10 to 110 % F.S. for each measured input range		-	
-DC input	≈ -110 to 110 % F.S. for each measured input range		-	
AC input	-		≈ 110 % F.S. for each measured input range	
Display method	7-segment (red) LED (character height: 11 mm)			
Display accuracy	Dependent on the ambient temperature			
23 ± 5 °C	± 0.1 % F.S. rdg ± 2-digit	± 0.1 % F.S. rdg ± 2-digit [02]	± 0.3 % F.S. rdg ± 3-digit	± 0.3 % F.S. rdg ± 3-digit
-10 to 50 °C	± 0.5 % F.S. rdg ± 3-digit	± 0.5 % F.S. rdg ± 3-digit [03]	± 0.5 % F.S. rdg ± 3-digit	± 0.5 % F.S. rdg ± 3-digit [03]
Display cycle	0.1 to 5.0 sec (select per 0.1 sec)			
Display scale	-1999 to 9999 (4-digit)			
A / D conversion method	Practical oversampling using successive approximation ADC			
Sampling cycle	50 ms		16.6 ms	
Resolution	1 / 12,000			
Preset output	NPN / PNP open collector output model			
Load voltage	≤ 30 VDC⎓			
Load current	≤ 100 mA			
Residual voltage	NPN open collector output: ≤ 1 VDC⎓ / PNP open collector output: ≤ 2 VDC⎓			
Unit weight (packaged)	≈ 46.8 g (≈ 83.7 g)		≈ 46.9 g (≈ 83.8 g)	
Approval	CE EAC		CE EAC	

01) Available frequency display
02) 5 A terminal: ± 0.3 % F.S. rdg ± 3-digit
03) 5 A terminal: ± 1 % F.S. rdg ± 3-digit

Power supply	5 - 24 VDC⎓ ± 10 % (low-limit: 5 VDC⎓ fixed)
Power consumption	≤ 3 W
Insulation resistance	≥ 100 MΩ (500 VDC⎓ megger)
Dielectric strength	Between all terminals and case: 2,000 VAC~ 50 / 60 Hz for 1 min
Noise immunity	± 2 kV square wave noise (pulse width: 1 μs) by the noise simulator
Vibration	0.75 mm double amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 2 hours
Vibration (malfunction)	0.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 minute) in each X, Y, Z direction for 10 min
Shock	300 m/s² (≈ 30 G) in each X, Y, Z direction for 3 times
Shock (malfunction)	100 m/s² (≈ 10 G) in each X, Y, Z direction for 3 times
Ambient temperature	-10 to 50 °C, storage: -20 to 60 °C (no freezing or condensation)
Ambient humidity	35 to 85 %RH, storage: 35 to 85 %RH (no freezing or condensation)
Insulation type	Symbol: ⧈, double or reinforced insulation (dielectric strength between the measurement input part and the power part: 1 kV)
Connection	Plug type - socket type terminal

Input Range and Display Range

When the max. input value is over the 100 %, it may result in input terminal damage.

■ DC voltage model

Input range	Display range			Input impedance
	Diaplay method: STND (fixed)		Diaplay method: SCAL [01]	
-600 - 600 VDC⎓	-600 to 600	600u		4.69 MΩ
-200 - 200 VDC⎓	-199.9 to 200.0	200u		4.69 MΩ
-100 - 100 VDC⎓	-100.0 to 100.0	100u		794 kΩ
-20 - 20 VDC⎓	-19.99 to 20.00	20u		794 kΩ
-10 - 10 VDC⎓	-10.00 to 10.00	10u		79 kΩ
-2 - 2 VDC⎓	-1.999 to 2.000	2u		79 kΩ
-1 - 1 VDC⎓	-1.000 to 1.000	1u		7.5 kΩ
-200 - 200 mVDC⎓	-199.9 to 200.0	0.2u		7.5 kΩ

Decimals	Display range
0	-1999 to 9999
0.0	-199.9 to 999.9
0.00	-19.99 to 99.99
0.000	-1.999 to 9.999

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.
When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

■ DC current model

Input range	Display range			Input impedance
	Diaplay method: STND (fixed)		Diaplay method: SCAL [01]	
-5 - 5 A	-5.00 to 5.00	5A		0.01 Ω
-2 - 2 A	-1.999 to 2.000	2A		0.01 Ω
-1 - 1 A	-1.000 to 1.000	1A		0.1 Ω
-200 - 200 mA	-199.9 to 200.0	0.2A		0.1 Ω
-100 - 100 mA	-100.0 to 100.0	0.1A		1.1 Ω
-20 - 20 mA	-19.99 to 20.00	20mA		1.1 Ω
4 - 20 mA	4.00 to 20.00	4-20		1.1 Ω
-10 - 10 mA	-10.00 to 10.00	10mA		11.1 Ω
-2 - 2 mA	-1.999 to 2.000	2mA		11.1 Ω

Decimals	Display range
0	-1999 to 9999
0.0	-199.9 to 999.9
0.00	-19.99 to 99.99
0.000	-1.999 to 9.999

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.
When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

■ AC voltage model

Input range	Display range			Input impedance
	Diaplay method: STND (fixed)		Diaplay method: SCAL [01]	
0 - 600 VAC~	0.0 to 600.0	600u		4.987 MΩ
0 - 250 VAC~	0.0 to 250.0	250u		4.987 MΩ
0 - 110 VAC~ [02]	0.0 to 440.0	110P		1.087 MΩ
0 - 50 VAC~	0.00 to 50.00	50u		1.087 MΩ
0 - 20 VAC~	0.00 to 20.00	20u		200 kΩ
0 - 10 VAC~	0.00 to 10.00	10u		200 kΩ
0 - 2 VAC~	0.000 to 2.000	2u		20 kΩ
0 - 1 VAC~	0.000 to 1.000	1u		20 kΩ

Decimals	Display range
0	-1999 to 9999
0.0	-199.9 to 999.9
0.00	-19.99 to 99.99
0.000	-1.999 to 9.999

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.
When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.
02) In case of 0 to 110 VAC~ of AC voltage range and using P.T (potential transformer) for 440 VAC~ / 110 VAC~, if 110 VAC~ is input, and the unit displays 440 VAC~ automatically by preset scale value for P.T user's convenient.

■ AC current model

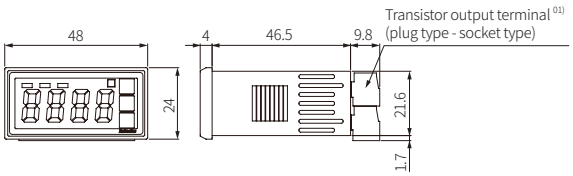
Input range	Display range			Input impedance
	Diaplay method: STND (fixed)		Diaplay method: SCAL [01]	
0 - 5 A	0.000 to 5.000	5A		0.01 Ω
0 - 2.5 A	0.000 to 2.500	2.5A		0.01 Ω
0 - 1 A	0.000 to 1.000	1A		0.05 Ω
0 - 500 mA	0.0 to 500.0	0.5A		0.1 Ω
0 - 250 mA	0.0 to 250.0	0.25A		0.1 Ω
0 - 100 mA	0.0 to 100.0	0.1A		0.5 Ω
0 - 50 mA	0.00 to 50.00	50mA		0.5 Ω

Decimals	Display range
0	-1999 to 9999
0.0	-199.9 to 999.9
0.00	-19.99 to 99.99
0.000	-1.999 to 9.999

01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.
When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

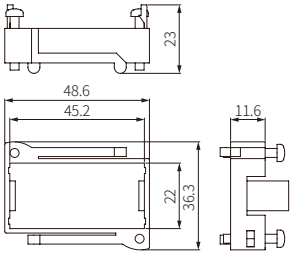
Dimensions

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

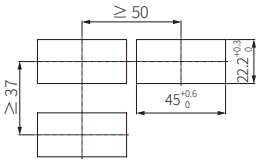


01) Except indicator

■ Bracket



■ Panel cut-out



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