

4-Digit Multi Panel Meters



MT4W 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: RS485 communication output, low speed serial output, BCD dynamic output, transmission output (DC 4 - 20 mA), NPN / PNP open collector output, relay contact output (default option: indicator / no output)
- Maximum allowed input: 500 VDC $\overline{=}$, DC 5 A, 500 VAC \sim , AC 5 A
- Display range: -1999 to 9999
- High / low-limit display scale function
- AC frequency measurement (range: 0.1 to 9999 Hz)
- Various functions: peak display value monitoring, display cycle delay, zero-point adjustment, peak display value correction, PV transmission output (DC 4 - 20 mA) scale, etc.
- Power supply: 12 - 24 VDC $\overline{=}$, 100 - 240 VAC \sim
- DIN W 72 × H 36 mm

Ordering Information

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

MT 4 W - ① - ② ③

① Input type

DV: DC voltage⁰¹⁾

DA: DC current

AV: AC voltage⁰²⁾

AA: AC current⁰²⁾

② Power supply

1: 12 - 24 VDC $\overline{=}$ ± 10 %

4: 100 - 240 VAC \sim ± 10 % 50 / 60 Hz

③ Preset output + Sub output

	Preset output	Sub output
N	None (indicator)	
0	Relay	Transmission (DC 4 - 20 mA)
1	Relay	-
2	NPN open collector	BCD Dynamic
3	PNP open collector	BCD Dynamic
4	NPN open collector	Transmission (DC 4 - 20 mA)
5	PNP open collector	Transmission (DC 4 - 20 mA)
6	NPN open collector	Low speed serial
7	PNP open collector	Low speed serial
8	NPN open collector	RS485 Communication
9	PNP open collector	RS485 Communication

01) To measure the current over DC 5 A, please select DV type because the shunt should be used.

02) In case of selecting frequency display, no output will be provided even if it is output support model.

Product Components




- Product
- Bracket × 2
- Instruction manual
- Unit sticker × 1

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster

It is the comprehensive device management program for Autonics' products, providing parameter setting, monitoring and data management.


Specifications				
Model	MT4W-DV-□□	MT4W-DA-□□	MT4W-AV-□□	MT4W-AA-□□
Input type	DC voltage	DC current	AC voltage ⁽⁰¹⁾	AC current ⁽⁰¹⁾
Max. allowable input	110 % F.S. for each measured input range			
Display method	7-segment (red) LED (character height: 14.2 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			
Max. display range	-1999 to 9999 (4 digit)			
A / D conversion method	ΣΔ (Sigma Delta) ADC			
Sampling cycle	50 ms	16.6 ms		
Unit weight (packaged)	≈ 211 g (≈ 326 g)			
Approval	CE   			

01) Available frequency display, Display accuracy (23 ± 5 °C): ± 0.1 % F.S. rdg ± 2 digit

02) 5 A terminal: ± 0.3 % F.S. rdg ± 3 digit

03) Except power supply 12 - 24 VDC≐ model

Preset output	None (indicator) / Relay / NPN open collector / PNP open collector output model
Relay	Contact capacity: 250 VAC~ 3 A, 30 VDC≐ 3 A Contact composition: N.O (1a)
NPN / PNP open collector	Output capacity: ≤ 12 - 24 VDC≐ ± 2 VDC≐, 50 mA resistive load
Sub output	None (indicator) / BCD Dynamic / Transmission (DC 4 - 20 mA) / Low speed serial / RS485 Communication output model
BCD Dynamic / Low speed serial	NPN open collector output Output capacity: ≤ 12 - 24 VDC≐, 50 mA resistive load
Transmission (DC 4 - 20 mA)	Resolution: 1/12,000 (load resistance: ≤ 600 Ω) Response time: ≤ 450 ms
RS485 communication	Protocol: Modbus RTU

Model	MT4W-□□-1□	MT4W-□□-4□
Power supply	12 - 24 VDC≐ ± 10 %	100 - 240 VAC~ ± 10 % 50 / 60 Hz
Power consumption	5 W	5 VA
Insulation resistance	Between external terminal and case: ≥ 100 MΩ (500 VDC≐ megger)	
Dielectric strength	Between external terminal 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 min) 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 min) 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	
Relay life cycle	Mechanical: ≥ 20,000,000 operations Electrical: ≥ 100,000 operations (250 VAC~ 3A resistive load)	
Ambient temp.	-10 to 50 °C, storage: -20 to 60 °C (freezing or condensation)	
Ambient humi.	35 to 85 %RH, storage: 35 to 85 %RH (freezing or condensation)	
Insulation type	Symbol:  , double or reinforced insulation (dielectric strength between the measurement input part and the power part: 1 kV)	

Communication Interface

■ RS485

Comm. protocol	Modbus RTU
Application standard	Compliance with EIA RS485
Max. connection	31 units (address: 01 to 99)
Comm. synchronous method	Asynchronous
Comm. method	2-wire half duplex
Comm. distance	≤ 800 m
Comm. speed	1,200 / 1,400 / 4,800 / 9,600 / 19,200 / 38,400 bps
Start bit	1-bit (fixed)
Data bit	8-bit (fixed)
Parity bit	None, Even, Odd
Stop bit	1-bit, 2-bit
EEPROM life cycle	≈ 1,000,000 operations (Erase / Write)

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
	Display method: STND (fixed)	Display method: SCAL ⁽⁰¹⁾	
0 - 500 VDC≐	0.0 to 500.0	500.0	4.33348 MΩ
0 - 100 VDC≐	0.0 to 100.0	100.0	4.33348 MΩ
0 - 50 VDC≐	0.00 to 50.00	50.0	433.48 kΩ
			Decimals
0 - 10 VDC≐	0.00 to 10.00	10.0	433.48 kΩ
			□
0 - 5 VDC≐	0.000 to 5.000	5.0	43.48 kΩ
			□□
0 - 1 VDC≐	0.000 to 1.000	1.0	43.48 kΩ
			□□□
0 - 250 mVDC≐	0.0 to 250.0	250.0	2.28 kΩ
			□□□□
0 - 50 mVDC≐	0.00 to 50.00	50.0	2.28 kΩ

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
	Display method: STND (fixed)	Display method: SCAL ⁽⁰¹⁾	
0 - 5 A	0.000 to 5.000	5.0	0.022 Ω
0 - 2 A	0.000 to 2.000	2.0	0.022 Ω
0 - 500 mA	0.0 to 500.0	500.0	0.222 Ω
			Decimals
0 - 200 mA	0.0 to 200.0	200.0	0.222 Ω
			□
0 - 50 mA	0.00 to 50.00	50.0	2.222 Ω
			□□
4 - 20 mA	4.00 to 20.00	4.0	2.222 Ω
			□□□
0 - 5 mA	0.000 to 5.000	5.0	22.222 Ω
			□□□□
0 - 2 mA	0.000 to 2.000	2.0	22.222 Ω

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
	Display method: STND (fixed)	Display method: SCAL ⁽⁰¹⁾	
0 - 500 VAC~	0.0 to 500.0	500.0	5.01092 MΩ
0 - 250 VAC~	0.0 to 250.0	250.0	5.01092 MΩ
0 - 110 VAC~ ⁽⁰²⁾	0.0 to 440.0	110.0	1.11092 MΩ
			Decimals
0 - 50 VAC~	0.00 to 50.00	50.0	1.11092 MΩ
			□
0 - 20 VAC~	0.00 to 20.00	20.0	200.92 kΩ
			□□
0 - 10 VAC~	0.00 to 10.00	10.0	200.92 kΩ
			□□□
0 - 2 VAC~	0.000 to 2.000	2.0	20.92 kΩ
			□□□□
0 - 1 VAC~	0.000 to 1.000	1.0	20.92 kΩ

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 PT (potential transformer) for 440 VAC~ / 110 VAC~, if 110 VAC~ is input, and the unit displays 440 VAC~ automatically by preset scale value for PT user's convenient.

■ AC current model

Input range	Display range		Input impedance
	Display method: STND (fixed)	Display method: SCAL ⁽⁰¹⁾	
0 - 5 A	0.000 to 5.000	5.0	0.02 Ω
0 - 2.5 A	0.000 to 2.500	2.5	0.02 Ω
0 - 1 A	0.000 to 1.000	1.0	0.102 Ω
			Decimals
0 - 500 mA	0.0 to 500.0	500.0	0.202 Ω
			□
0 - 250 mA	0.0 to 250.0	250.0	0.202 Ω
			□□
0 - 100 mA	0.0 to 100.0	100.0	1.022 Ω
			□□□
0 - 50 mA	0.00 to 50.00	50.0	1.022 Ω

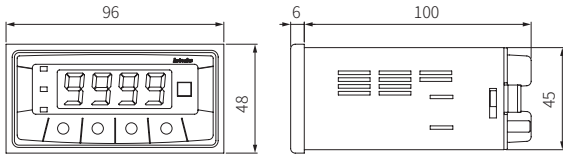
01) Connect to the input terminals whose 30 % to 100 % of the input range includes the max. value of the input range to measure.

When the max. input value is under the 30 % of the input terminal range, display accuracy is degraded.

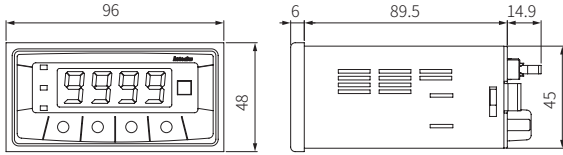
Dimensions

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

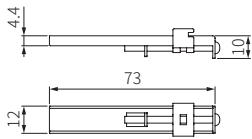
■ Indicator / Relay preset output model



■ NPN / PNP open collector preset output model



■ Bracket



■ Panel cut-out

