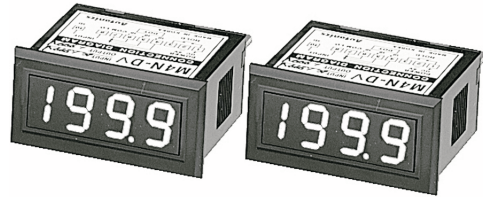# M4N Series

▣Features

- ●Max. display : 1999
- ●Auto Zero function and Hold function
- ●7Segment LED Display
- ●Case size by DIN specification
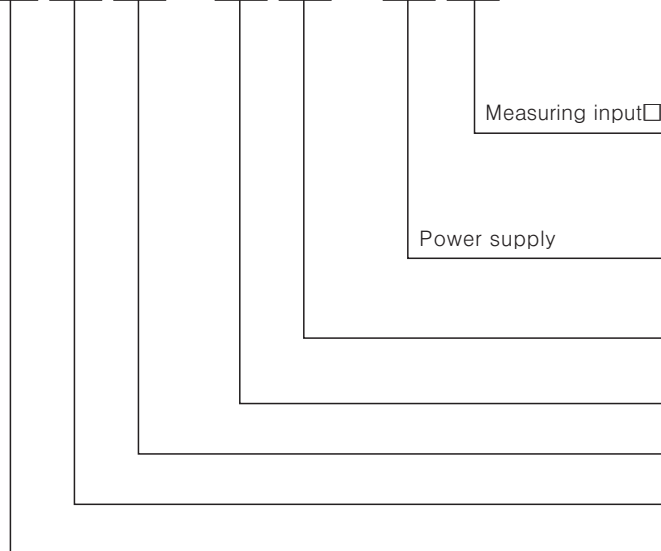
⚠ **Please read "Caution for your safety" in operation manual before using.**

▣Ordering information

◎ DC VOLT METER / DC AMPERE METER

M4N－DV－01

Measuring input□

	DC Voltage INPUT F・S	DC Current INPUT F・S
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

V	Volt Meter
A	Ampere Meter

D	Measuring DC type

N	DIN Size W48×H24mm

4	3½digit

M	Meter

※M4N series cannot measure AC voltage.
※Measuring range for direct connection is 200VDC, 200mADC.

◎DIGITAL SCALING METER

M4N－DI－0X

X	Option

Power supply
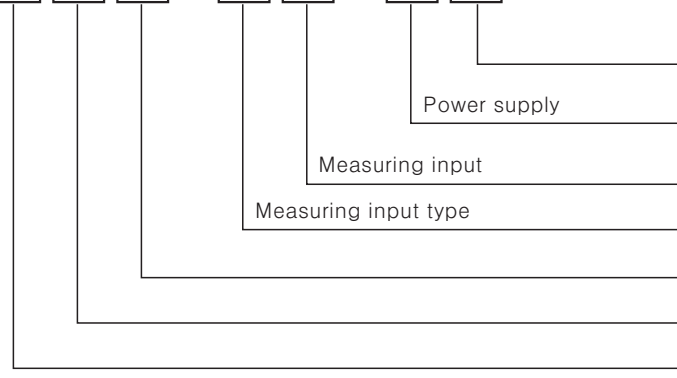
0	5VDC
1	12－24VDC

Measuring input

I	4－20mADC (1－5VDC : Option)

Measuring input type

D	Measuring DC type

N	DIN Size W48×H24mm

| 4	3½digit

M	Meter

※1－5VDC of measuring input specification is available by option.

Miniature DC Input Type

▣Specifications

Model	M4N-DV- □□	M4N-DA- □□	M4N-DI- □□
Measurement function	DC Voltage	DC Ampere	4−20mADC, 1−5VDC
Measurement input	4−20mADC		
Power supply	5VDC, 12−24VDC		
Max. display range	90~110% of rated voltage		
Power consumption	2W		
Display method	7Segment Red LED Display (Height:10mm)		
Display accuracy	F・S ±0.2% rdg ±1digit		
Sampling cycle	300ms		
A/D conversion method	Dual slope integral method		
Response time	2sec.(0 ~ Max.)		
Max. allowable input	150% of measurement input		
Sampling time	2.5 times/sec		
Insulation resistance	Min. 100MΩ (at 500VDC)		
Dielectric strength	2000VAC 50/60Hz for 1 minute		
Noise strength	±100V the square wave noise (pulse width:1μs) by the noise simulator		
Vibration — Mechanical	0.75mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 1hour		
Vibration — Malfunction	0.5mm amplitude at frquency of 10 ~ 55Hz in each of X, Y, Z directions for 10minutes		
Shock — Mechanical	300m/s² (30G) in X, Y, Z direction		
Shock — Malfunction	100m/s² (10G) in X, Y, Z direction□		
Ambient temperature	−10 ~ +50℃ (at non−freezing status)		
Storage temperature	−25 ~ +65℃ (at non−freezing status)		
Ambient humidity	35 ~ 85%RH		
Weight	Approx. 42g		

▣Connections
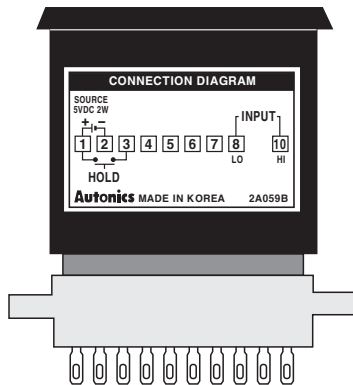
※Socket Pin NO : 1 2 3 4 5 6 7 8 9 10
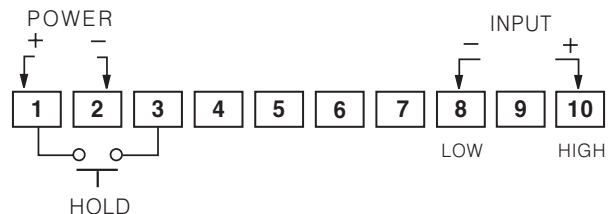
※Socket pin 9, NC terminal, is not connected to internal circuit.

(A) Counter
(B) Timer
(C) Temp. controller
(D) Power controller
(E) Panel meter
(F) Tacho/ Speed/ Pulse meter
(G) Display unit
(H) Sensor controller
(I) Proximity sensor
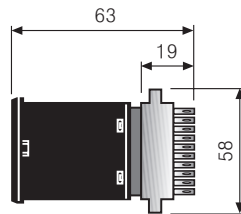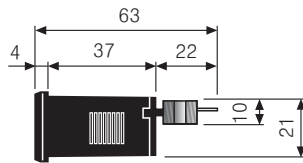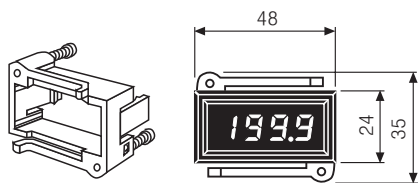(J) Photo electric sensor
(K) Pressure sensor
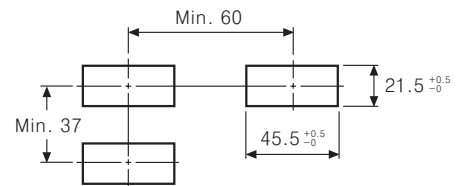(L) Rotary encoder
(M) 5−Phase stepping motor & Driver & Controller
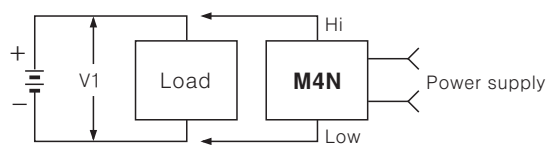
M4N Series
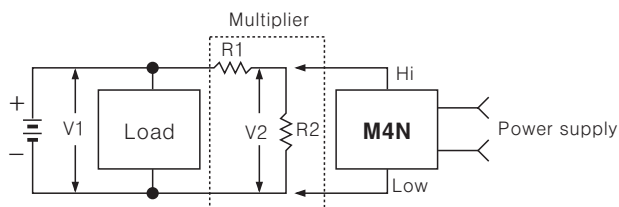
▣ Dimensions

● Bracket

● Panel cut-out

Unit: mm

▣ Connections

◎ DC voltmeter connection
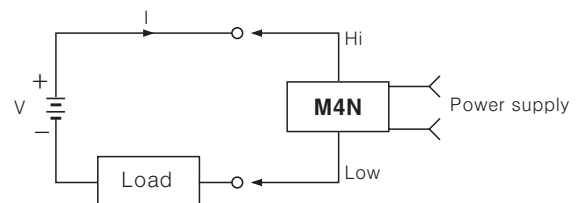
(Fig. 1) Measuring input (V1) is under 200VDC
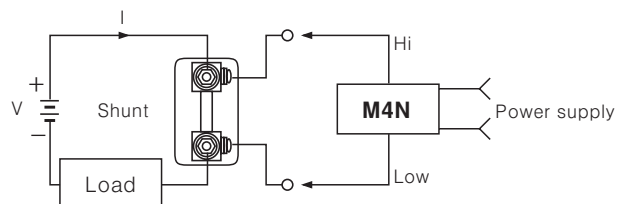
(Fig. 2) Measuring input(V1) is under 200VDC

※ When the measuring voltage is over 200VDC, please select R1 and R2 in order to make V2 less than Max. measuring voltage using multiplier.

$$V2 = \frac{R2}{R1+R2} \times V1 \qquad R1 > R2$$

◎ DC Ampere connection

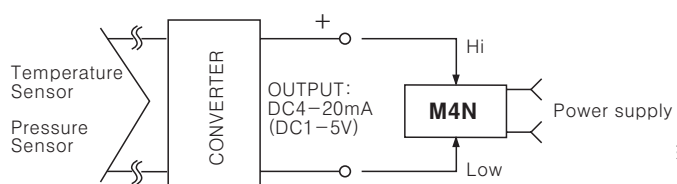(Fig. 3) Measuring current is under 200mADC

(Fig. 4) Measuring current is over 200mADC

※ When the current is larger than 200mADC, please use SHUNT.
※ Second section of SHUNT is 50mVDC.

◎ SCALING METER connection

OUTPUT: DC4-20mA (DC1-5V)

※ 1-5VDC output of converter is optional.

Autonics

▣Proper usage

◎Caution for selecting and using products

- Before you buy or use the Panel Meter, please read this catalog. The product, which is produced by customer's requirement, cannot be exchanged.
- When providing the power, it could display arbitrary number. It is because measuring input terminal is opened. If connecting Low terminal of measuring input to GND, it displays "000".
- If it indicates 1 or −1 during input signal is ON, please turn OFF the power and check the connection condition.
  It is because the input signal is too low or high.
- When measuring voltage is higher than 200VDC, please divide the voltage with multiplying resistance to make lower than 200VDC.
  (Refer the connection method of DC voltmeter in the application of connections)
  Ex) Measuring 1000VDC
   As above connection figure of DC voltmeter, select the R1 value to make 200VDC on R2. (Generally R1 value will be higher than R2 value.)
   Order the D.P.M indicating 1000V for 300VDC.
- Select another item or use shunt for over than DC200mA of measured value. (See the connection method of DC current for the application of using shunt.)
  Ex) In case of measuring DC20A
   Use the shunt used for DC20A/DC50mV and the specification should be ordered as M4N−DA−X DC50mV/19.99.
   ※Our company does not sell a shunt.
     Please connect to our agency for buying the item.
- M4N series is produced for 5VDC and 12−24VDC. Therefore, before you order the item please check the model again.
- The specification of measurement input, which is indicated in model ordering, is a standard specification, 1:1 of measurement input and processing value.
  The optional specifications are available with your order.
  * The application of M4N−DV/M4N−DA
    M4N − DV − 0X   DC10V / 100.0
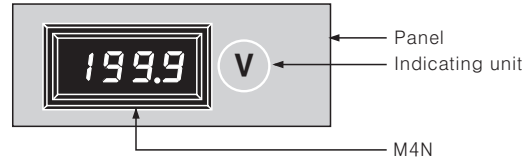   M4N − DA − 0X   DC50mV / 199.9
  * The application of M4N − DI
    M4N − DI − 0X   DC4−20mA / 100.0
   Note) If measurement input is 1−5VDC, please indicate it. Otherwise, it will be produced with DC4−20mA.

- Indicating method of unit
  M4N is not indicated a unit on the product, therefore please indicate it in panel.

Panel
Indicating unit
M4N

- Indicating method of decimal point
  The indicating decimal point is set in the product by your order.
  (The prior products indicate the decimal point by using jump line in external connector like as connection figures.)
 After buying the product do not change the decimal point. If you need to change it, please connect to our A/S center or appropriate agency.

◎Caution for connecting M4N

- In case of using both voltmeter and ampere meter
  Because the connection of measurement input terminal and power terminal is not insulated, when you use voltmeter and ampere meter by connecting one set, please provide individual power. In case of using same power, it may damage the product.
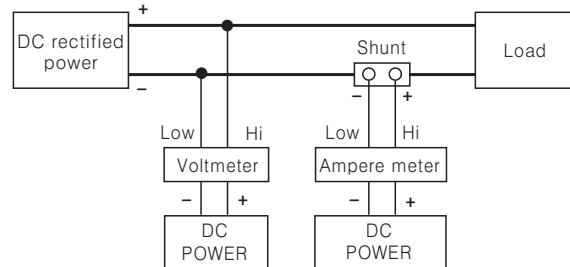
- It is available using several voltmeters with providing one DC power. However, the potential difference between − of measurement input and − of power may cause error.
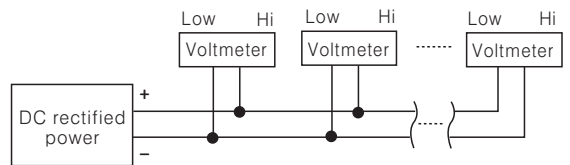
   ※Ampere meter cannot be used with above connection. Please provide power separately.

- Make sure checking the polarity of provided power before turn ON the power.
  (If the polarity is connected inversely, internal circuit could be damaged.)
- Please check if the pin numbers are changed after connecting

(A)
Counter

(B)
Timer

(C)
Temp.
controller

(D)
Power
controller

(E)
Panel
meter

(F)
Tacho/
Speed/
Pulse
meter

(G)
Display
unit

(H)
Sensor
controller

(I)
Proximity
sensor

(J)
Photo
electric
sensor

(K)
Pressure
sensor

(L)
Rotary
encoder

(M)
5−Phase
stepping
motor &
Driver &
Controller