DIN W48×H24mm, W72×H36mm Loop powered digital scaling meter

■ Features

- Loop powered type : Power from measured input
- Measurement input : DC4-20mA
- Max. display range : -1999 to 9999
- Prescale function(High / Low scale setting)
- Decimal point change function
- Hi / Low limit input correction function
- Display peak value monitoring function
- Changeable delay time of monitoring peak value
- Display cycle change function
  (Selectable 0.5sec./1sec./2sec./3sec./4sec./5sec.)
- Error display function



Please read "Caution for your safety" in operation manual before using.

■ Ordering information

M 4 N S N A

Measuring input range	A	DC4-20mA
Power supply	N	Loop powered type
Measuring function	S	Scaling
Size	N	DIN W48×H24mm
	Y	DIN W72×H36mm
Digit	4	9999(4digit)
Item	M	Meter

■ Specifications

Model		M4NS-NA	M4YS-NA
Power supply		Loop powered type	
Display method		7 Segment LED display	
Character height		10mm	14mm
Display accuracy※1		F.S. 0.3% rdg ±1digit	
Display cycle		Selectable 0.5sec./1sec./2sec./3sec./4sec./5sec.	
Resolution		12,000 resolution	
Max. display range		-1999 to 9999	
Setting type		Setting type with the front keys	
Measuring input range※2		DC4-20mA	
Self-diagnosis function		Error display function(HHHH/LLLL)	
Insulation resistance		Min. 100MΩ(at 500VDC megger)	
Dielectric strength		2000VAC 50/60Hz for 1minute	
Vibration	Mechanical	0.75mm amplitude at frequency of -10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 1hour	
	Malfunction	0.5mm amplitude at frequency of -10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 10minute	
Shock	Mechanical	300m/s²(approx. 30G) in each of X, Y, Z directions for 3 times	
	Malfunction	100m/s²(approx. 10G) in each of X, Y, Z directions for 3 times	
Environment	Ambient temperature	-10 to 50℃, storage: -25 to 60℃	
	Ambient humidity	35 to 85%RH, storage: 35 to 85%RH	
Unit weight		Approx. 44g	Approx. 110g

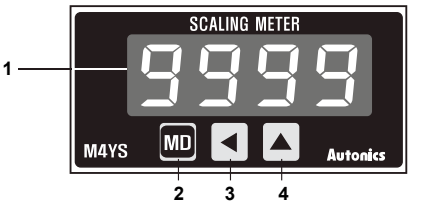
※1: Ambient temperature(25℃±5℃): F.S 0.3% rdg of ±1Digit(-10 to 50℃: F.S. 0.4% rdg ±1Digit)
※2: Impedance between input lines: Max. 600Ω(based on 24VDC)
Please be aware that activating input power is based on 24VDC, and the recommended impedance also will be lowered if the activating power is lower.
※Environment resistance is rated at no freezing or condensation.

▣ Front panel identification

● **M4NS-NA**



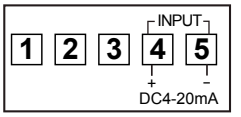
● **M4YS-NA**



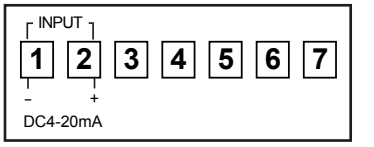
1. Display value, parameter, error display
2. M, MD key: When enter into parameter group, return to RUN mode, after completing parameter setting
3. ▲, ▲ (Up) key: When enter into the status of parameter setting
4. ▲, ◀ (Shift) key: When enter into the status of parameter setting and move digit

▣ Connections

● **M4NS-NA**

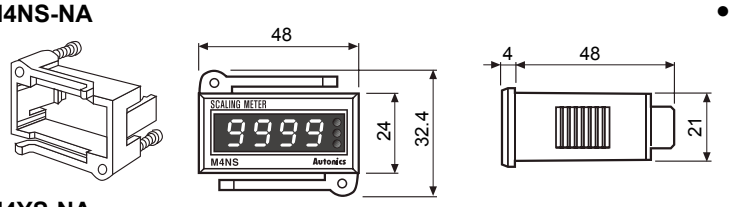


● **M4YS-NA**

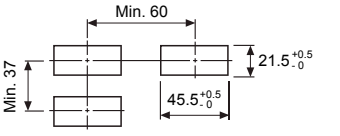


▣ Dimensions

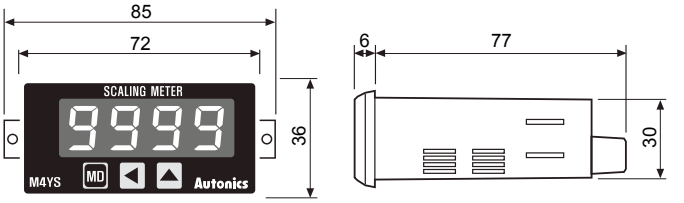
● **M4NS-NA**



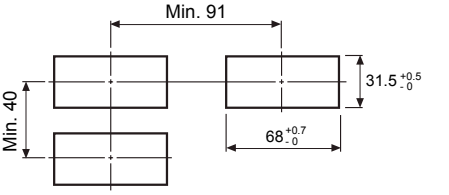
● **Panel cut-out** (unit: mm)



● **M4YS-NA**



● **Panel cut-out** (unit: mm)



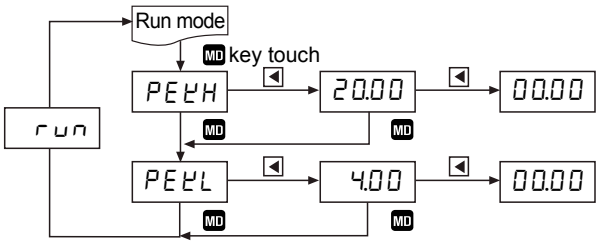
▣ Parameter

Display		Function	Setting range
L-SC	Low scale	Low limit display value for 4mA input	-1.999 to 9.999 -19.99 to 99.99 -199.9 to 999.9 -1999 to 9999
H-SC	High scale	High limit display value for 20mA input	
dot	Decimal point	Set Decimal point position	0000, 000.0 00.00, 0.000
InbL	Input bias low	Correct the Low-limit value of display value(Digit)	-100 to 100
InbH	Input bias high	Correct the High-limit value of display value(%)	0.900 to 1.100
PEAt	Peak time	See the peak value monitoring delay time	0 to 30sec.
dISt	Display time	Selectable sampling period(sec)	Selectable 0.5/1.0/2.0/3.0/4.0/5.0sec.
E.PCt	Error %	Set % of HHHH/LLLL display range	0, 1, 2, 3, 4
LoC	Lock	Set the lock function	Selectable ON, OFF

▣ Factory default setting

Parameter	Parameter display	Factory default
Low limit display value for 4mA input	L-SC	0400
Hi limit display value for 20mA input	H-SC	2000
Set Dot position	dot	00.00
Correction of Low limit value input	InbL	0000
Correction of Hi limit value input	InbH	1.000
Peak value monitoring delay time	PEAt	015
Display cycle	dISt	0.5 5
Set % of HHHH/LLLL display range	E.PCt	3
Lock setting	LoC	oFF

▣ Parameter group 0(Monitoring mode)

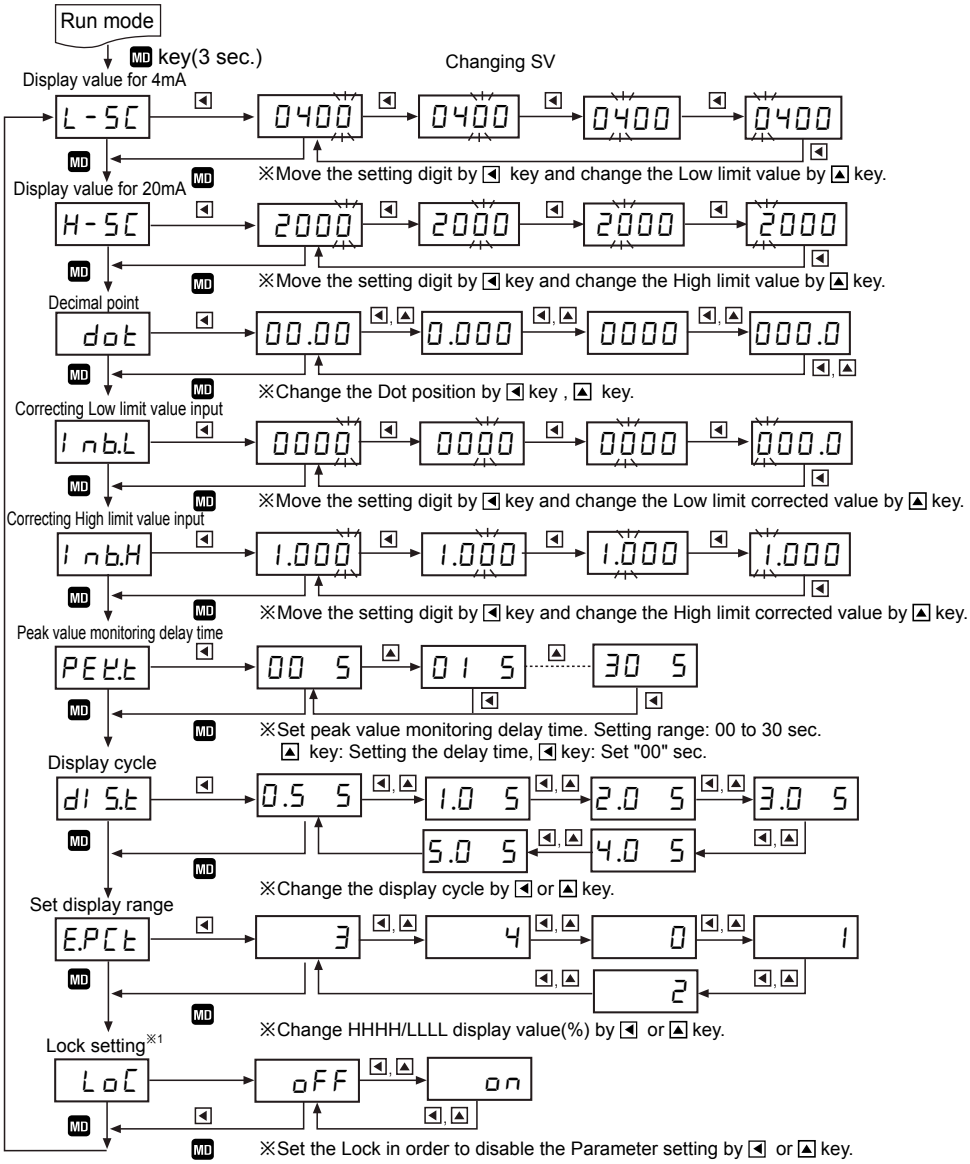


Pressing MD key to enter monitoring mode in RUN mode.

Each peak value will be shown by pressing ◀ key in monitoring mode and peak value will be initialized by pressing ◀ key once more.

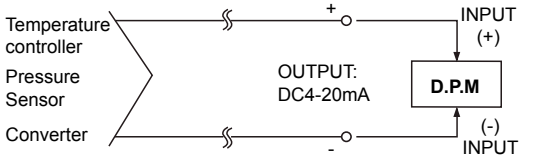
If no key touched for 60sec., it will return to RUN mode.

※When do not use monitoring function, set OOS for PEAt in Parameter setting.



※Press MD key to complete the setting and move to next Parameter in status of changing setting value.
※Press MD key is pressed for 3 sec. to move to RUN mode after displaying [run]
※If any key is untouched for 60 sec., it will return to RUN mode.
※1: Lock setting [oFF: Enable to change or set Parameter.
[on: Disable to change or set Parameter but enable to check the setting value in Parameter group. Disable to enter into the status of change setting value by pressing ◀, ▲ keys.

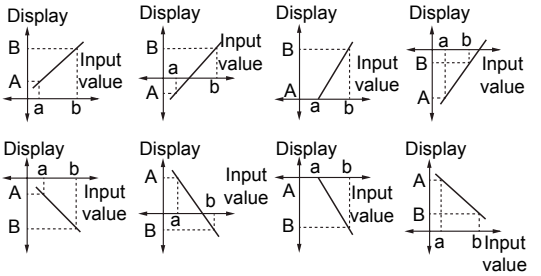
▣ Application of connections



▣ Functions

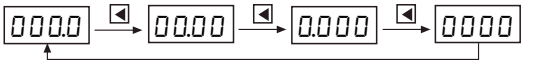
◎ Display scale[L-SC / H-SC]

This function is to display the value setting certain Hi/Low limit value against DC4-20mA input. For example if set a=DC4mA, b=DC20mA and A, B as display value, it will be displayed a=A, b=B.



◎ Decimal point setting[dot]

This function is to set the decimal point position of display value(Set in Parameter setting group)



Able to use ◀ (Shift) or ▲ (Up) for moving decimal.

◎ Correction[Inb.H/Inb.L]

This function is to adjust the error of display value after calculating scale value for measuring input and also correct the input error of sensor etc.

Inb.L :-100 to 100 [Adjust deviation of low value]

Inb.H: 0.900 to 1.100 [Correct gradient(%) of high value]

Ex)When display value is 0.0 to 500.0 against 4-20mA input, if the display value is “1.2” for 4mA input, set -12 (Ignore the decimal point) as Inb.L value to display “0.0”.It is enable to remove offset of Low display value.

※When completed above Low value setting then apply 20mA, if the display value is “500.5, the correction value will be 5005/5000=0.999, set 0.999 as Inb.H value then enable to correct High value is 50005×0.999 = 5000).It is also ignore the decimal point.

◎ Display cycle delay

It is difficult to display when the measuring input value is fluctuating. In this case it is able to make display value stable by delaying display cycle.

Display cycle can be changed in dISt mode of Para-meter 2(Selectable 0.5s/1.0s/2.0s/3.0s/4.0s/5.0s).

If select 5.0s, it will be the measuring input value on an average for 5sec., then display it every 5sec.

◎ Error display[E.PCt]

● Error setting and sort

It will display the error message according to the setting value which set % value against analog input range and set it in E.PCt mode by ◀, ▲ key.

Error code	Error description
E.PCt0	LLLL / HHHH are displayed when it is over 0% out DC4-20mA range
E.PCt1	LLLL / HHHH are displayed when it is over 1% out DC4-20mA range
E.PCt2	LLLL / HHHH are displayed when it is over 2% out DC4-20mA range
E.PCt3	LLLL / HHHH are displayed when it is over 3% out DC4-20mA range
E.PCt4	L-SC / H-SC are displayed always when it is out of DC4-20mA range

● Error display

① When [LLLL]flashs,
Input current is lower than 3% in 4-20mADC (16mA scale) LLLL will flash when it is under 3.52mA [16mA×3% =0.48mA] → 4mA-0.48mA=3.52mA When it is beyond Min. display value(-1999) [by display value]

② When [HHHH] flashs,
Input current is higher than 3% in 4-20mADC(16mA scale) HHHH flash [16mA×3%=0.48mA] → 20mA+0.48mA= 20.48mA.
When it is higher than 20.48mA.
When it is beyond Max. display value(9999) [by display value]

● Turn Error display off

LLLL and HHHH are displayed when input is out of measuring range, therefore it will be disappeared automatically when input returns to measuring range.

◎ Display peak value monitoring [PEAH / PEAL]

This function is to monitor Max. value and Min.value by current display value then display its Data in PEAH mode and PEAL mode.

Enable to set delay time in PEAt mode to protect the wrong Data by initial over current and settable from 0 to 30sec. and start to monitor after delay time.