MT4N Series

## DIN W48×H24mm Small size digital multi panel meter

■Features

- Various output options(Default : Indicator)
  RS485 Communication output, Current(DC4−20mA),
  NPN/PNP open collector output, Relay contact output
- Max. measuring inputs :
  50VDC, 250VAC, 500mADC, 5AAC
- Display range : −1999 ~ 9999
- High/Low scale
- AC frequency measurement : Range 0.1~9999Hz
- Various functions : Monitoring function for max. and
  min. display value function, Display cycle delay function,
  Zero function, High display correction function,
  Current output scale function
- Power supply : 12−24VDC/VAC

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

■Ordering information

MT | 4 | N | − | DV | − | E | N
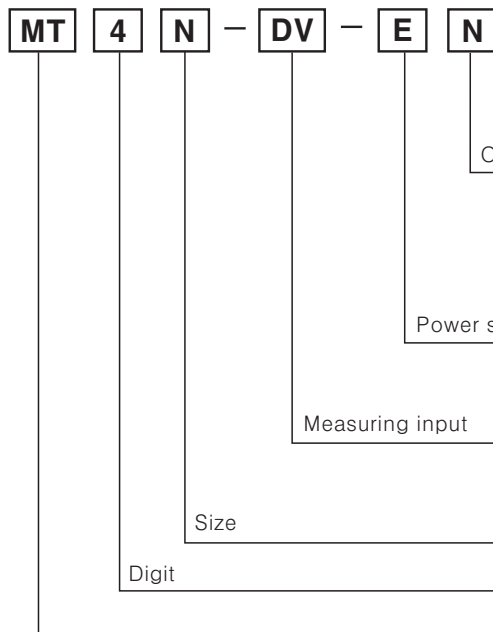
N	Indicator(No output function)
0	Relay contact output
1	NPN open collector output
2	PNP open collector output
3	Relay contact output+Current(DC4−20mA) output
4	Relay contact output+RS485 communication output

Output

※Output(0~4) : Option

Power supply

E	12−24VDC/AC

Measuring input

DV	DC Volt
DA	DC Ampere
AV	AC Volt
AA	AC Ampere

Size

N	DIN W48×H24mm

Digit

4	4digit

MT	Multi Meter

※To measure the current over 5ADC, please select DV type because the shunt should be used.

■Front panel identification
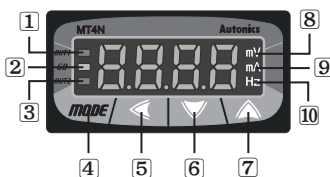
1. OUT1:Preset output of OUT1
2. GO:Preset Go output of OUT1/OUT2
3. OUT2:Preset output of OUT2
4. MD Key:Mode Key
5. ◀:Shift key
6. ▼:Down key
7. ▲:Up key
8. mV, V Unit
9. mA, A Unit
10. Hz Unit

※There is no 1, 2, 3 on a display panel of MT4N−□□−EN.
※MT4N−□□−E3, E4 model has output display part of OUT1 only.
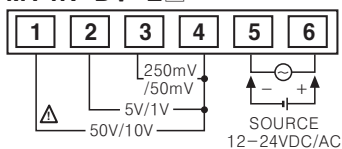
Multi Panel Meter

■Specifications

Series	MT4N-DV-E□	MT4N-DA-E□	MT4N-AV-E□	MT4N-AA-E□
Measurement function	VDC, ADC		VAC, AAC, Frequency	
Power supply	12−24VDC/AC(90 to 110% of rated voltage)			
Power consumption	DC:3W, AC:5VA			
Display method	7Segment LCD Display, Character height:9mm			
Display accuracy	• 23℃ ±5℃, 35~85%RH ☞ DC Type : ±0.1% F.S ±2Digit AC Type : ±0.3% F.S ±3Digit • −10℃~50℃ ☞ DC/AC Type : ±0.5% F.S ±3Digit			
Max. allowable input	110% for input spec.			
A/D conversion method	Over sampling type using SAT type of ADC			
Sampling cycle	50ms(DC), 16.6ms(AC) (1/12,000)			
Max. display range	−1999~9999(4Digit)			
Preset output	• Relay output ☞ Contact capacity:125VAC 0.3A, 30VDC 1A/Contact composition:N.O(1a) • NPN/PNP Open Collector output ☞ 12−24VDC ±2V 50mA Max.(Load resistance)			
Sub output (Transmission output)	•RS485 communication output ☞ Baud rate:1200/2400/4800/9600, Transmission method :2 wires half duplex, Tuning method:Sub−synchronization, Protocol:Modbus type • DC4−20mA output ☞ Resolution: 12,000 division(Load resistance max. 600Ω)			
AC measuring function	———	Selectable RMS or AVG	———	Selectable RMS or AVG
Frequency measuring function	Measurement range:0.100~9999Hz(Fixed decimal point type)			
Hold function	★	Includes(Outer hold function)		
Insulation resistance	Min. 200MΩ (500VDC mega)			
Dielectric strength	1000VAC 50/60Hz for 1 minute(Between external terminal and case)			
Noise strength	±2kV 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 2hour		
	Malfunction	0.5mm amplitude at frequency of 10~55Hz in each of X, Y, Z directions for 10minutes		
Shock	Mechanical	100m/s² (10G) in X, Y, Z directions for 3 times		
	Malfunction	300m/s² (30G) in X, Y, Z directions for 3 times		
Ambient temperature	−10 ~ 50℃ (at non−dew status)			
Storage temperature	−20 ~ 60℃ (at non−dew status)			
Ambient humidity	35 ~ 85%RH			
Approval	CE			
Unit weight	Approx. 65g			

※"★" Indication type does not have Outer hold function.
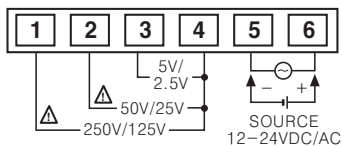
■Connections

◎Measuring input terminal connection

●MT4N-DV-E□

250mV/50mV
5V/1V
50V/10V
SOURCE 12−24VDC/AC

●MT4N-DA-E□

5mA/2mA
50mA/4−20mA
500mA/200mA
SOURCE 12−24VDC/AC

●MT4N-AV-E□

5V/2.5V
50V/25V
250V/125V
SOURCE 12−24VDC/AC

●MT4N-AA-E□

100mA/50mA
500mA/250mA
5A/2.5A
SOURCE 12−24VDC/AC
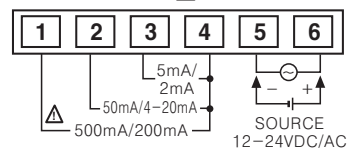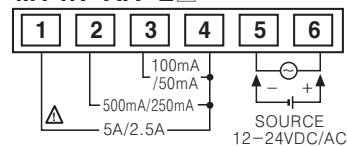
〈Option〉

●Relay output [MT4N-□□-E0]

OUT1 OUT2 HOLD/ZERO

●NPN open collector output [MT4N-□□-E1]

OUT1 GO OUT2 COM HOLD/ZERO

●PNP open collector output [MT4N-□□-E2]

OUT1 GO OUT2 COM HOLD/ZERO
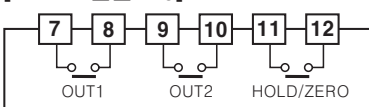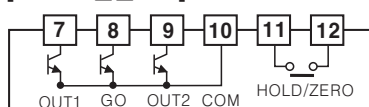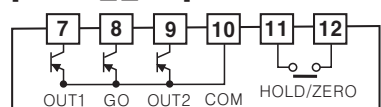
●Relay+Current(DC4−20mA) output [MT4N-□□-E3]

+ −
DC4−20mA OUT1 HOLD/ZERO
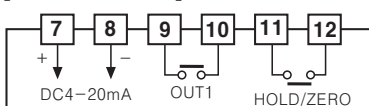
●Relay+RS485 communication output [MT4N-□□-E4]
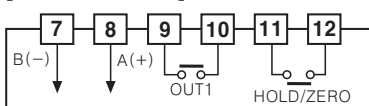
B(−) A(+) OUT1 HOLD/ZERO

(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) Switching power supply
(J) Proximity sensor
(K) Photo electric sensor
(L) Pressure sensor
(M) Rotary encoder
(N) Stepping motor & Driver & Controller
(O) Graphic panel
(P) Production stoppage models & replacement

MT4N Series

▣Dimensions

●MT4N-□□-EN

48.6
48
24
36

86
3
16.2
22 0 -0.2

●Panel cut-out

Min. 55
Min. 37
22.2 +0.3 0
45 +0.6 0
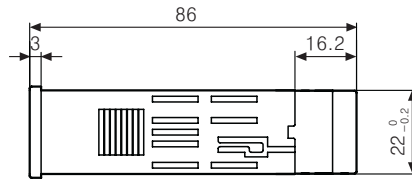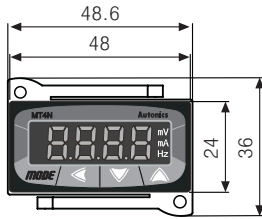
●MT4N-□□-E0
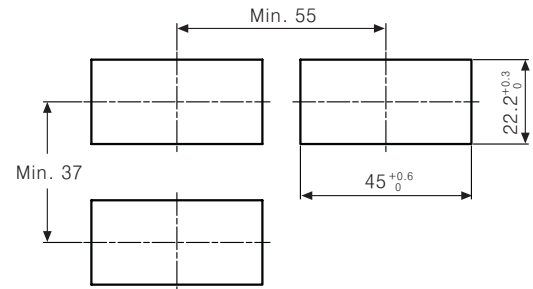
●MT4N-□□-E1, E2   ●MT4N-□□-E3, E4

※Process the unit after consider the above recommened cut-out fully.

(Unit:mm)

▣Parameter setting

```
        RUN
Press MD Key   Press MD Key for 2sec.    Press
                                          MD Key
                                          for 3sec.
  PA 0          PA 1
       Press MD Key
                    Press MD Key
                    for 3sec.
               PA 2
                    Press MD Key
                    for 3sec.
```
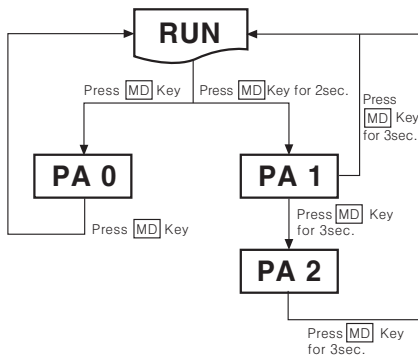
※Press ⑩ key in **RUN** status, it will advance to **PA-0** group.
※Press ⑩ key in **RUN** status over 2sec, **PA-1** is displayed.
※Press ⑩ key in **RUN** status over 5sec, **PA-2** is displayed after **PA-1** and it stops at **PA-2** as press ⑩ key continuously.
※When release ⑩ key at displaying **PA-1** or **PA-2**, then it will advance to each parameter.
※Press ⑩ key over 3sec at any position of **PA-1** or **PA-2**, it returns to **RUN** mode automatically.
※If any key is untouched for 60sec. in each parameter, it returns to **RUN** mode automatically.
※Press ⑩ key within 2sec. after return to **RUN**, it advance to previous parameter again. (See the below procedure of each parameter to set.)
※It cannot advance to **PA-0** when preset output operation mode of **PA-2** is **oFF**.

▣Change the parameter setting value

1. Advance to the parameter to be changed when press ⑩ key continuously in RUN mode and release ⑩ key at the parameter. (Refer to "▣ Parameter setting".)
2. When press ⑩ key in each parameter, the initial mode of the parameter is displayed. (Refer to the description of each parameter.)
3. When press one of ◀, ▼, ▲ keys in display mode, saved setting value is displayed.

Ex)

`In-r` ◀▼▲ → `250ᵤ` Saved setting value flashes every 0.5sec.
Select one

4. Change the setting value by ▲ or ▼ key.
   Ex) Change AC type measuring input from 250V to 125V.

`In-r` ◀▼▲ → `250ᵤ` ▼▲ → `125ᵤ` MODE
Ex) Select one
`dISP`
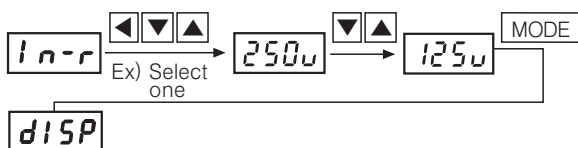
5. When press ⑩ key to complete the change and it is advanced to the next mode after flash 2 times.
6. When press ⑩ key for 3sec. after change, it returns to RUN mode.

Multi Panel Meter

▣Parameter group 1

RUN

Press MD key for 2sec.

PA1

Move after 1sec.

In-r → Display of factory default for measuring input — Select measuring input specification by ▲ ▼. ☞ Refer to "Measuring input chart by model"

diSP → **Stnd** — Select the display method of measuring input.
Select Stnd ⇄ SCAL ⇄ FrEq
☞ Refer to measuring input specification and range chart.
(FrEq mode is only for AC measuring type.)

In-t → **AUG** — Select measuring method for AC.
Select AUG ⇄ rnS (Average:AVG/Root mean square:RMS)
(It is only displayed in AC type.)

● Measuring input chart by model

Item	Range of measuring input
MT4N−DV	50u⇄10u⇄5u⇄1u⇄250mu⇄50mu⇄50u
MT4N−DA	500mA⇄200mA⇄50mA⇄4-20mA⇄5mA⇄2mA⇄500mA
MT4N−AV	250u⇄125u⇄50u⇄25u⇄5u⇄25u⇄250u
MT4N−AA	5A⇄2.5A⇄500mA⇄250mA⇄100mA⇄50mA⇄5A

When diSP is Stnd:
Stnd → Max. display value
It shows Max. display value of standard specification. Display value is fixed.

When diSP is SCAL:
dot → Decimal point position — Select decimal point position. 0 ⇄ 0.0 ⇄ 0.00 ⇄ 0.000

H-SC → Max. display value — Set display value against max. measuring input. (◄ : Shift the digit ▲ ▼ : Change setting value)

L-SC → Max. display value — Set display value against min. measuring input. (◄ : Shift the digit ▲ ▼ : Change setting value)

diSP : FrEq (It is only displayed for AC measuring type.)
dot → Decimal point position — Set frequency measuring range, it is decided as the decimal point position. (▲ ▼ : Change the decimal point position)

0	1~9999Hz
0.0	0.1~999.9Hz
0.00	0.10~99.99Hz
0.000	0.100~9.999Hz

In.b.H → **1.000** — It corrects a gradient of High−limit display value against max. input. The setting range is 0.100 to 5.000(%). (▲, ▼:Change setting value, ◄:Shift the digit)

In.b.L → **00** — It corrects deviation of Low−limit display value against Min. input. Setting range is −99 to +99. (Refer to zero point function) (▲, ▼:Set a deviation value, ◄:Shift the digit)

In.b.H → **1.000** — It corrects a gradient of display value against max. input. (▲, ▼:Change setting value, ◄:Shift the digit)

In.b.E → **10-0** — Set In.b.H. Setting range:10^{-2} ~ 10^{1} (◄ : Shift the digit ▲ ▼ : Change setting value)

※After setting each mode, press MD Key for 2sec. to return to RUN.
※If any key is untouched for 60sec. after advance to Parameter, it will return to RUN.

◎Factory defaults

Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA	Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA
In-r	50u	500mA	250u	5A	In.b.H	1.000	1.000	1.000	1.000
diSP	Stnd	Stnd	Stnd	Stnd	In.b.L	00	00	00	00
In-t	——	——	AUG	AUG	dot	0.00	0.0	0.0	0.000
Stnd	50.00	500.0	250.0	5.000	In.b.E	——	——	10-0	10-0

(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) Switching power supply
(J) Proximity sensor
(K) Photo electric sensor
(L) Pressure sensor
(M) Rotary encoder
(N) Stepping motor & Driver & Controller
(O) Graphic panel
(P) Production stoppage models & replacement

MT4N Series

▣Parameter group 2

RUN
Press MD key for 4sec.

PA 2
Move after 1sec.

oU1.t ◄ **oFF** — Select Preset output mode of OUT1. (But, it is only displayed in OUT1 output included model.)
MD   MD
oFF ⇄ HI ⇄ Lo ⇄ HL ⇄ HL-G

oU2.t ◄ **oFF** — Select Preset output mode of OUT2. (But, it is only displayed in OUT2 output included model.)
MD   MD
oFF ⇄ HI ⇄ Lo ⇄ HL ⇄ HL-G

HYS.1 ◄ **00.01** — Select Preset hysteresis of OUT1. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
The range is within 10% of max. display range (Unit : digit) When resolution is over 10000, it is fixed as 9999.
※**ou1.t** mode is **oFF**, it is not displayed.

HYS.2 ◄ **00.01** — Select Preset hysteresis of OUT2. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
The range is within 10% of max. display range (Unit : digit) When resolution is over 10000, it is fixed as 9999.
※**ou2.t** mode is **oFF**, it is not displayed.

PEt.t ◄ **00 S** — Set a monitoring delay time for displayed peak value. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
Setting range : 00 ~ 30sec.

dIS.t ◄ **0.2 S** — Set a display cycle. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
Setting range : 0.1 ~ 5.0sec.

Colr ◄ **rEd** — Selectable color with 4 modes. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
rEd ⇄ Grn ⇄ YEL ⇄ r-G ⇄ G-r
• rEd, Grn, yEL:Display with 1 color. • r−G, G−r:Color is changed when error is occurred.
Ex)r−G:Red is standard and green when error is occurred.
※Color is changed only when error in "▣ Error display function" is occurred excluding 'over'.

ΞEt.y ◄ **no** — Select zero function with operation at front. (Set with▲, ▼key)
MD   MD
When ◄ + ▲ key are pressed for 3 sec to set **YES**, it will be zero function and the deviation
value is saved automatically at **Inb.L** mode.

Euln ◄ **Hold** — Select input with 6, 7 terminal or zero function for external signal.
MD   MD
(Set with ▲, ▼ key)
Hold : Holding display value, **ΞEro** : Zero function using Hold/Zero terminal

FS-H ◄ **50.00** — Set the high limit value, output point of current output 20mA. (◄:Shift the digit, ▲ ▼: Change setting value)
MD   MD
(When changing measuring input and prescale mode, it is changed automatically as maximum value
of input range.)

FS-L ◄ **00.00** — Set the low limit value, output point of current output 4mA. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
(When changing measuring input and prescale mode, it is changed automatically as minimum value
of input range.)

AdrS ◄ **01** — Set the address of RS485 communication output. (◄:Shift the digit, ▲ ▼ : Change setting value)
MD   MD
Setting range : **01 ~ 99**

bPS ◄ **9600** — Select Baud rate of RS485 communication output.
MD   MD
Setting range : **9600 ⇄ 4800 ⇄ 2400 ⇄ 1200**

LoC ◄ **oFF** — Set key lock function and select from 4 types.
MD   MD
oFF ⇄ LoC1 ⇄ LoC2 ⇄ LoC3

oFF	Disable to lock keys
LoC1	Lock Parameter 1
LoC2	Lock Parameter 1, 2
LoC3	Lock Parameter 0, 1 and 2

※The dotted mode is only displayed for output type.
※After setting each mode, press MD Key for 2sec. to return to **RUN** mode.
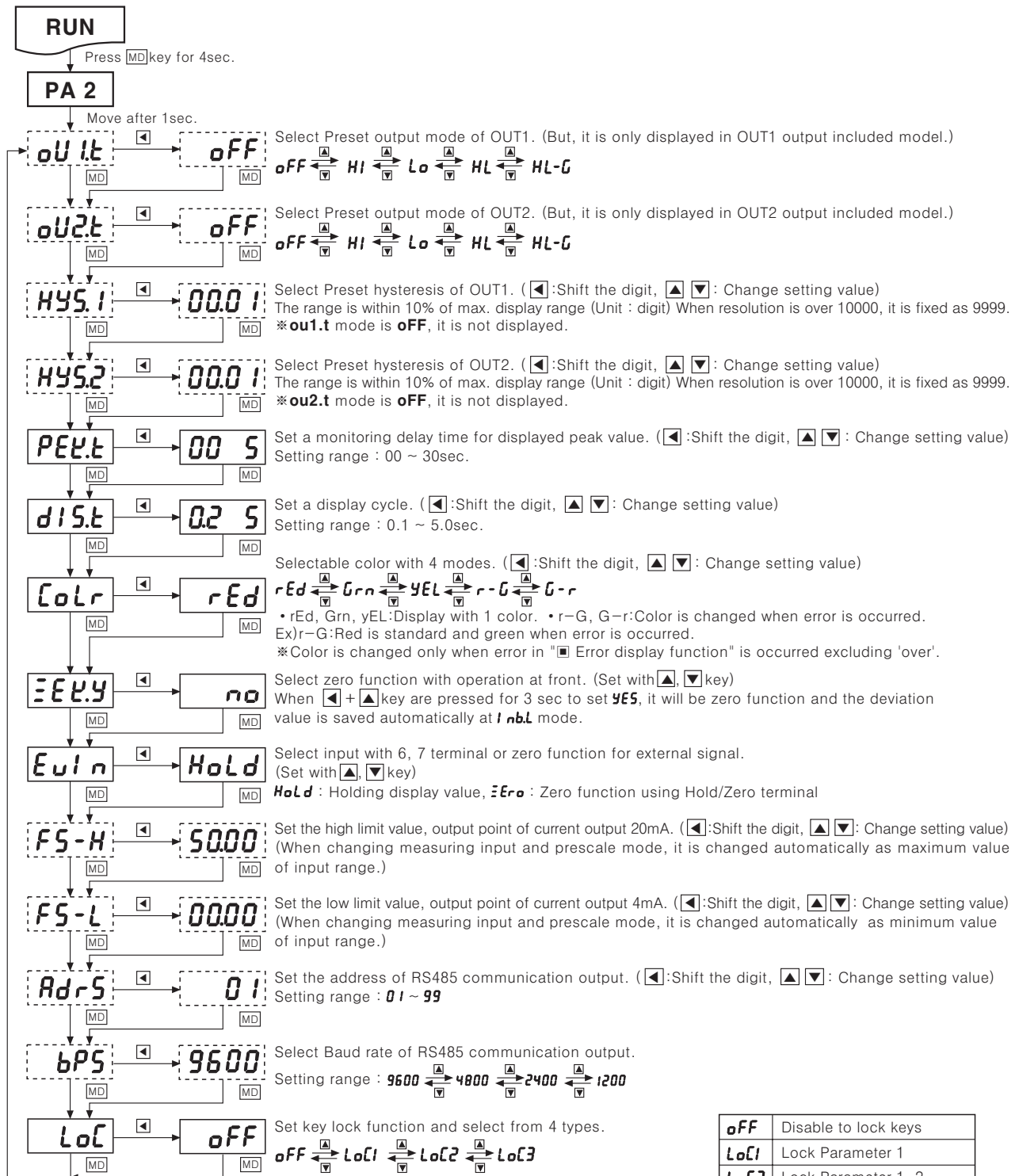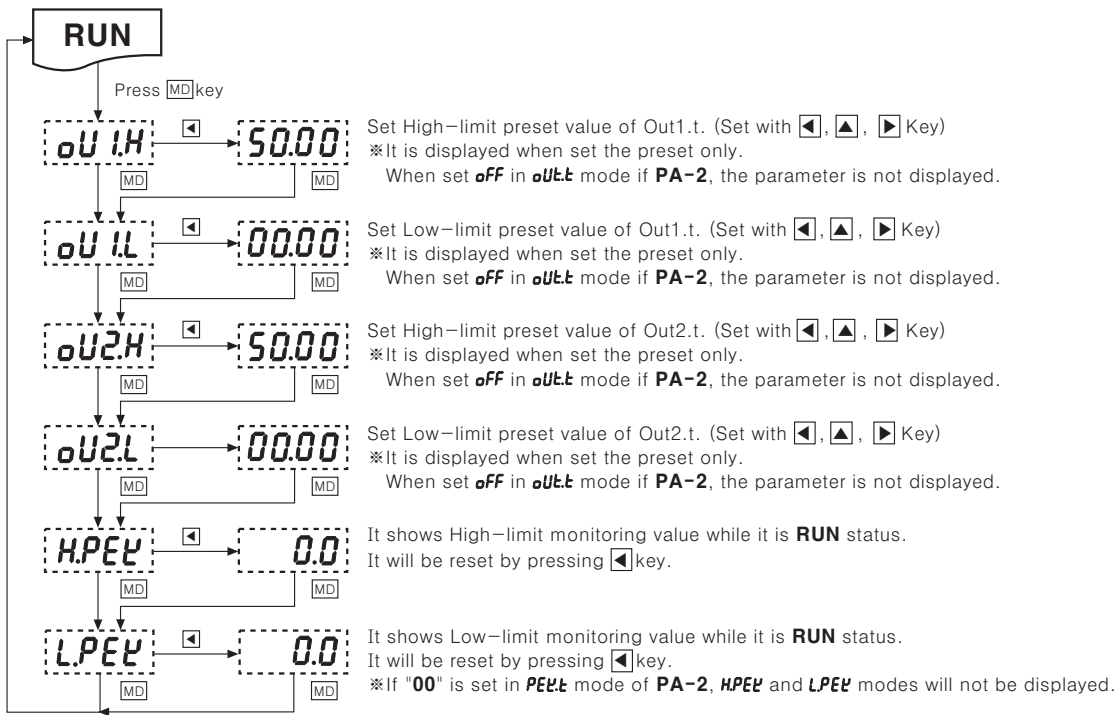※If any key is untouched for 60sec. after advance to PARAMETER, it will return to **RUN** mode.
※The min. setting interval between **FS-H** and **FS-L** is 10% F • S, it is fixed as 10% of the setting value when it is small.

◎Factory defaults

Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA	Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA
oU1.t	oFF	oFF	oFF	oFF	ΞEro	no	no	no	no
oU2.t	oFF	oFF	oFF	oFF	Euln	Hold	Hold	Hold	Hold
HYS.1	00.01	000.1	000.1	0.001	FS-H	50.00	500.0	250.0	5.000
HYS.2	00.01	000.1	000.1	0.001	FS-L	00.00	000.0	0.0	0.000
PEt.t	00 S	00 S	00 S	00 S	AdrS	01	01	01	01
dIS.t	0.2 S	0.2 S	0.2 S	0.2 S	bPS	9600	9600	9600	9600
Colr	rEd	rEd	rEd	rEd	LoC	oFF	oFF	oFF	oFF

Autonics

▣Parameter group 0


```
RUN
  │
  │ Press [MD] key
  ▼
[oU 1.H] ◄─► [50.00]    Set High−limit preset value of Out1.t. (Set with ◄, ▲, ► Key)
 [MD]        [MD]       ※It is displayed when set the preset only.
                           When set off in oUt.t mode if PA−2, the parameter is not displayed.

[oU 1.L] ◄─► [00.00]    Set Low−limit preset value of Out1.t. (Set with ◄, ▲, ► Key)
 [MD]        [MD]       ※It is displayed when set the preset only.
                           When set off in oUt.t mode if PA−2, the parameter is not displayed.

[oU2.H] ◄─► [50.00]     Set High−limit preset value of Out2.t. (Set with ◄, ▲, ► Key)
 [MD]        [MD]       ※It is displayed when set the preset only.
                           When set off in oUt.t mode if PA−2, the parameter is not displayed.

[oU2.L] ◄─► [00.00]     Set Low−limit preset value of Out2.t. (Set with ◄, ▲, ► Key)
 [MD]        [MD]       ※It is displayed when set the preset only.
                           When set off in oUt.t mode if PA−2, the parameter is not displayed.

[H.PEʁ] ◄─► [0.0]       It shows High−limit monitoring value while it is RUN status.
 [MD]        [MD]       It will be reset by pressing ◄ key.

[L.PEʁ] ◄─► [0.0]       It shows Low−limit monitoring value while it is RUN status.
 [MD]        [MD]       It will be reset by pressing ◄ key.
                        ※If "00" is set in PEʁ.t mode of PA−2, H.PEʁ and L.PEʁ modes will not be displayed.
```

※If any key is untouched for 60sec. after advance to Parameter, it will return to RUN mode.

◎Factory defaults

Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA	Mode	MT4N−DV	MT4N−DA	MT4N−AV	MT4N−AA
oU 1.H	50.00	500.0	250.0	5.000	oU2.L	00.00	000.0	000.0	0.000
oU 1.L	00.00	000.0	000.0	0.000	H.PEʁ	0.00	0.0	0.0	0.000
oU2.H	50.00	500.0	250.0	5.000	L.PEʁ	0.00	0.0	0.0	0.000

▣Specification of measuring input and range

Measuring input and range		Input impedance	Standard [Stnd]	Prescale [SCAL]
			Display range [Fixed]	Display range [Variable]
DC Volt	0−50V [50V]	434.35kΩ	0.00~50.00(Fixed)	−1999~9999(Variable)
	0−10V [10V]	434.35kΩ	0.00~10.00(Fixed)	−199.9~999.9(Variable)
	0−5V [5V]	43.35kΩ	0.000~5.000(Fixed)	−19.99~99.99(Variable)
	0−1V [1V]	43.35kΩ	0.000~1.000(Fixed)	−1.999~9.999(Variable)
	0−250mV [250mV]	2.15kΩ	0.0~250.0(Fixed)	
	0−50mV [50mV]	2.15kΩ	0.00~50.00(Fixed)	
DC Ampere	0−500mA [500mA]	0.1Ω	0.0~500.0(Fixed)	(Display position will be changed depending on decimal point position.)
	0−200mA [200mA]	0.1Ω	0.0~200.0(Fixed)	
	0−50mA [50mA]	1.1Ω	0.00~50.00(Fixed)	
	4−20mA [4−20mA]	1.1Ω	4.00~20.00(Fixed)	
	0−5mA [5mA]	101.1Ω	0.000~5.000(Fixed)	
	0−2mA [2mA]	101.1Ω	0.000~2.000(Fixed)	
AC Volt	0−250V [250V]	1.109MΩ	0.0~250.0(Fixed)	※Please connect proper terminal its max. input voltage is within 30~100% of input terminal. When it is higher than input voltage, it may cause a breakdown of terminal and over display range and the accuracy is decreased when it is connected to the terminal under 30%.
	0−125V [125V]	1.109MΩ	0.0~125.0(Fixed)	
	0−50V [50V]	200kΩ	0.00~50.00(Fixed)	
	0−25V [25V]	222kΩ	0.00~25.00(Fixed)	
	0−5V [5V]	22kΩ	0.000~5.000(Fixed)	
	0−2.5V [2.5V]	22kΩ	0.000~2.500(Fixed)	
AC Ampere	0−5A [5A]	0.01Ω	0.000~5.000(Fixed)	
	0−2.5A [2.5A]	0.01Ω	0.000~2.500(Fixed)	
	0−500mA [500mA]	0.1Ω	0.0~500.0(Fixed)	
	0−250mA [250mA]	0.1Ω	0.0~250.0(Fixed)	
	0−100mA [100mA]	0.5Ω	0.0~100.0(Fixed)	
	0−50mA [50mA]	0.5Ω	0.00~50.00(Fixed)	

MT4N Series

▣Functions

◎AC frequency measurement function (PA1 : dISP mode)

It measures the frequency of input signal when it is AC input. The measuring range is 0.1~9999Hz, it is changed according to the decimal point position. Please refer to the below table.

Decimal point position	0.000	0.00	0.0	0
Measurement range	0.100~9.999Hz	0.10~99.99Hz	0.1~999.9Hz	1~9999Hz

It is also available to adjust the high limit of gradient at ﹗nb.H and ﹗nb.E mode of **PA 1**.
To measure correctly, the input signal is over F.S 10% of measuring range should be supplied.

◎Zero adjustment function(Deviation correction function of low limit display value)

It sets the display value as a zero when min. input is supplied at measuring input terminal. It can be corrected an error of zero with 3 types as below.
The deviation value is corrected normally with external Hold/Zero terminal can be saved automatically ﹗nb.L mode of **PA 1** group.

Type	Input the deviation value	Front key	Input the external signal
Description	Input the deviation value in ﹗nb.L mode of **PA 1**	Input the minimum value at the measuring input terminal, press ◀, ▲ key together for 3 sec.	Short−circuit external No.11, 12 Hold/Zero terminal over min.50ms.

※Please refer to Low display correction of error correction function for inputting the correction value.

◎Current output(DC4−20mA) scale function (PA2 : FS-H / FS-L mode)

It outputs DC4−20mA within the setting range of **FS-H** and **FS-L** mode to transmit the current display value to the other. When it is over the setting value of **FS-H** of **PA 2**, 20mA is outputted and 4mA for it is under the setting value of **FS-L** mode. (The resolution is divided as 12000 and it depends on full scale range.)
※The min. setting interval between **FS-H** and **FS-L** is 10% F・S, it is fixed as 10% of the setting value when it is small.
※In case, the display value is under **FS-L**, 4mA is outputted and 20mA for it is over the setting value of **FS-H** mode.
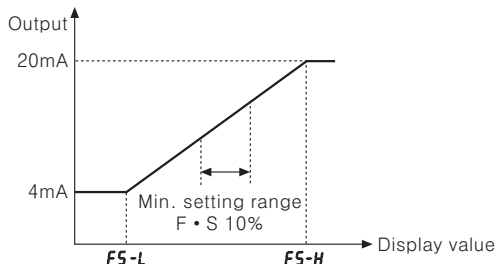
◎Initialization function

It initializes as the factory default status. If press ◀, ▼, ▲ keys together for 2sec. in **RUN** mode, ﹗nﾋ.ﾋ mode and the setting value(**no**) is displayed every 0.5 sec. and it will be initialized as the factory default when press MD key after change **no → YES**.

◎Error display function

| Display	Description
HHHH	Flashing when measuring input is exceeded the max. allowable input(110%)
LLLL	Flashing when measuring input is exceeded the minx. allowable input(−10%)
d−HH	Flashing when display input is exceeded **H−SC** setting value
d−LL	Flashing when display input is exceeded **L−SC** setting value
F−HH	Flashing when input frequency is exceeded the max. display value of measuring range
ovEr	Flashing when it exceeds zero range(±99).

※An error is cancelled automatically when it is in the measuring and display range.
※"LLLL" is displayed when the measuring input is 4−20mA.
※After flashing "ovEr" 2 times when it exceeds the zero range, it returns to RUN mode.

◎Prescale function(PA 1 : H-SC / L-SC mode)

This function is to display setting(−1999 to 9999) of particular High/Low−limit value in order to display High/Low−limit value of measuring input. If measuring inputs are a or b and particular values are A or B, it will display a=A, b=B as below graph.
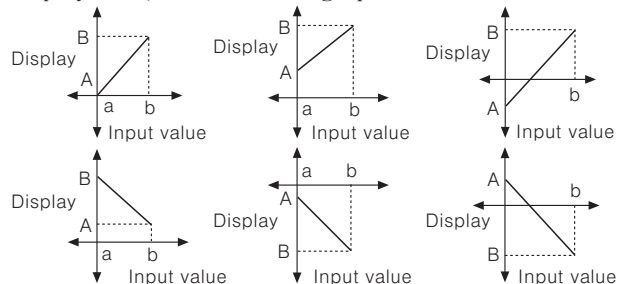
◎Gradient correction function(PA1 : ﹗nb.H mode)

This function is to correct a gradient of prescale value and display value. (Fig.1)Display value Y can be used as α, β times against X input value by correction function[﹗nb.H]. And also can be used as correction function of max. display value(**H-SC**). Adjustment range is 0.100 to 5.000 and multiply current gradient.
Ex)When 4.00VDC, display 5.000 for measuring input 0~10.00V

(Setting the gradient correction value)
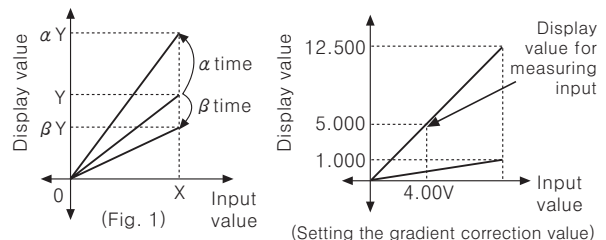
①Set the decimal position as '0000' for prescale value.
②In order to display 5.000 when measuring input is 4.00VDC, 12.500 will be displayed when max. input value is 10.00V, but it cannot set the max. setting value.
③Set gradient correction setting value [﹗nb.H] ×High scale value[**H-SC**]=12.500 as follows.
④It displays 5.000 when measuring input is 4.00V after set is finished.

Setting	H-SC	L-SC	﹗nb.H	Other
①	Disable	0.000	1.000	————
②	6.250	0.000	2.000	It will be the same display value.
③	3.125	0.000	4.000	
④	2.500	0.000	5.000	

Autonics

◎Correction function(PA 1: *I nb.H* / *I nb.L* mode)

This function is for correcting display value error of measuring input.

I nb.H : 5.000 ~ 0.100 [Correct gradient(%) of High value]

I nb.L : −99 ~ +99 [Adjust deviation of Low value]

Ex) When measuring input range is 0~500VDC and a display value is 0.0~500.0.

● Correction of high display value

When the measuring input is 500V, the deviation correction value is $5000 \div 5005 = 0.999$ for high display value "500.5" and it is available to correct the gradient of high display value when set 0.999 at *I nb.H*. The reset part of the decimal point is not calculated.

● Correction of low display value

When the measuring input is 0V, the deviation of low display value can be cleared if "−12" is set at *I nb.L* when low display value is "001.2". The reset part of the decimal point is not calculated.

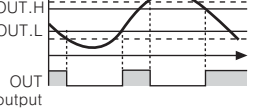## ◎Display cycle delay function (PA 2 : *dIS.t* mode)
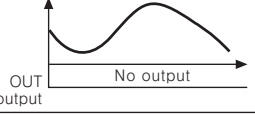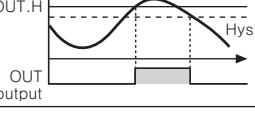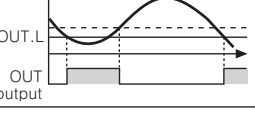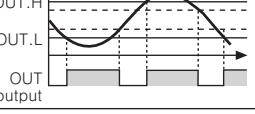
It is difficult to read as display value follows the measuring input value. Display when the measuring input value is fluctuating. In this case, it is able to make display value stable by delaying display cycle. Display cycle displaying time can be changed in *dIS.t* mode of Parameter 2(Setting range:0.1~5.0sec.). If selecting *5.0*, the display value is displayed every 5sec. averaging input value for 5sec.

◎Monitoring function for peak value of display (PA 0: *H.PEʁ* / *L.PEʁ* mode)

It is to observe Max./Min. value of display value by current display value and then display the data in *H.PEʁ* mode and *L.PEʁ* mode of parameter 0.

Set delay time(0~30sec.) in *PEʁ.t* mode of parameter 2 in order to prevent malfunction caused by initial over current or over voltage, when it monitor the peak value. Delay time is 0~30sec. and it will monitor the peak value after setting time. If press one among ◀, ▼, ▲ keys at *H.PEʁ* and *L.PEʁ* mode of parameter 0, monitoring data will be initialized.

◎Preset output mode(PA 2 : *oU 1.t* / *oU2.t* mode)

Mode	Output operation	Operation
oFF	OUT output — No output	No output
HI	OUT.H / Hysterisis / OUT output	Period ON :Display value≥OUT.H Period OFF :Display value≤OUT.H−Hys
Lo	OUT.L / OUT output	Period ON :Display value≤OUT.H Period OFF :Display value≥OUT.H+Hys
HL	OUT.H / OUT.L / OUT output	Period ON :Display value ≤ OUT.L or Display value ≥ OUT.H
HL-G	OUT.H / OUT.L / OUT output	Period ON :OUT.L≤Display value≤ OUT.H

※Set output mode separately for each OUT1/OUT2.

※OUT1/OUT2 are operated individually depending on output operation mode.

※Setting value mode of parameter group 0 is displayed by output operation mode selection.

※GO is outputted within the period both OUT1/OUT2 are off. (NPN/PNP Open collector output type.)