DIN W72×H36mm, W96×H48mm, digital multi panel meter

▣ Features

- Super version of panel meter
- Various output options(Default : Indicator)
  RS485 Communication output, Low speed serial output, Current(4-20mA), BCD output, NPN/PNP open collector output, Relay output
- Max. measuring input specification
  : 500VDC, 500VAC, 5ADC, 5ACA
- Max. display range : -1999 to 9999
- High/Low scale function
- **AC frequency measurement function : 0.1 to 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**
- Wide range of power supply : 12-24VDC, 100-240VAC

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

※Upgraded version is released on April of 2006. Refer to the 4th Autonics catalogue for the before version.

▣ Ordering information

MT 4 W – DV – 4 N

Output

Y Type

N	Indicator(Without output function)
0	Relay contact output
1	NPN open collector output
2	PNP open collector output
3※1	Relay contact output+Transmission output(DC4-20mA)
4※1	Relay contact output+RS485 communication output
5	BCD dynamic output
6	Low speed serial output

※Output(0 to 6) : Option
※1: Relay contact output of 3, 4 is able only to Low out.

W Type

N	Indication type(No output function)
0	Relay contact output+Transmission output(DC4-20mA)
1	Relay contact output
2	NPN open collector output+BCD dynamic output
3	PNP open collector output+BCD dynamic output
4	NPN open collector output+Transmission output(DC4-20mA)
5	PNP open collector output+Transmission output(DC4-20mA)
6	NPN open collector output+Low speed serial output
7	PNP open collector output+Low speed serial output
8	NPN open collector output+RS485 output
9	PNP open collector output+RS485 output

※Output(0 to 9) : Option

Power supply

1	12-24VDC
4	100-240VAC

Input

DV	DC Voltage
DA	DC Ampere
AV	AC Voltage
AA	AC Ampere

Size

Y	DIN W72×H36mm
W	DIN W96×H48mm

Digit

4	9999(4digit)

Item

MT	Multi meter

※To measure the current over DC 5A, please select DV type because the shunt should be used.
※In case of selecting frequency display, no output will be provided even if it is output support models. (Main output, Sub output and RS485 output)

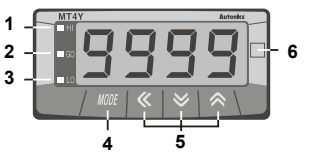
▣ Specifications

Series	MT4Y-DV-4□ MT4Y-DA-4□	MT4Y-AV-4□ MT4Y-AA-4□	MT4W-DV-4□ MT4W-DA-4□	MT4W-AV-4□ MT4W-AA-4□	MT4W-DV-1□ MT4W-DA-1□	MT4W-AV-1□ MT4W-AA-1□
Measurement input	DC voltage, ampere	AC voltage, ampere, Frequency	DC voltage, ampere	AC voltage, ampere, Frequency	DC voltage, ampere	AC voltage, ampere, Frequency
Power supply	100-240VAC 50/60Hz (Allowable voltage range: 90 to 110%)				12-24VDC (Allowable voltage range: 90 to 110%)	
Power consumption	5VA				5W	
Display method	7Segment LED display(red)(Character height: 14.2mm)					
Display accuracy	• 23℃±5℃ - DC Type: F.S. ±0.1% rdg±2digit / AC Type: F.S. ±0.3% rdg±3digit DC/AC Type F.S +0.3% rdg +3digit max. only for 5A terminal. • -10℃ to 50℃ - DC/AC Type: F.S.±0.5% rdg±3digit					
Max. allowable input	110% F.S for each measured input range					
A/D conversion method	Practical oversampling using successive approximation ADC					
Sampling cycle	DC type: 50ms, AC type: 16.6ms					
Max. indication range	-1999 to 9999(4digit)					
Preset output	• Relay output - Contact capacity: 250VAC 3A, 30VDC 3A / Contact composition: N.O(1a) • NPN/PNP Open collector output - 12-24VDC ±2V 50mA Max. (Resistive load)					
Sub output (Transmission output)	• RS485 communication output - Baud rate: 1200/2400/4800/9600, Communication method: 2-wire half duplex, Synchronous method: Asynchronous method, Protocol: Modbus type • Serial/BCD output - NPN Open collector output: 12-24VDC Max. 50mA(Resistive load) • DC4-20mA output - Resolution: 12,000 division(Load resistance max. 600Ω)					
AC measuring function※1	Selectable RMS or AVG					
Frequency measurement function※1	Measurement range : 0.100 to 9999Hz(Variable by decimal point position)					
Hold function※2	Includes(External hold function)					
Insulation resistance	Min. 100MΩ(at 500VDC megger) between external terminal and case					
Dielectric stength	2,000VAC for 1minute between external terminal and case					
Noise stength	±2kV the square wave noise(pulse width : 1μs) by the noise simulator					
Vibration – Mechanical	0.75mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2hours					
Vibration – Malfunction	0.5mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 10minutes					
Shock – Mechanical	100m/s²(approx. 10G) in each of X, Y, Z directions for 3 times					
Shock – Malfunction	300m/s²(approx. 30G) in each of X, Y, Z directions for 3 times					
Relay life cycle – Malfunction	Min. 20,000,000 operations					
Relay life cycle – Mechanical	Min. 100,000 operations(250VAC 3A Load current)					
Environ-ment – Ambient temperature	-10 to 50℃, storage: -20 to 60℃					
Environ-ment – Ambient humidity	35 to 85%RH, storage: 35 to 85%RH					
Insulation type	Double insulation or reinfored insulation (Mark: ⧈, dielectric strength between the measuring input part and the power part: 1kV)					
Approval	CE cULus				CE	
Unit weight	Approx. 134g		Approx. 211g			

※1: AC measuring function, and frequency measuring function are only for AC measuring input type.
If only frequency input the AC type(display method of measuring input) which option is in MT4W, MT4W will operate the only indicating type.
※2: MT4Y-□-4N model has no hold function.
※Environment resistance is rated at no freezing or condensation.

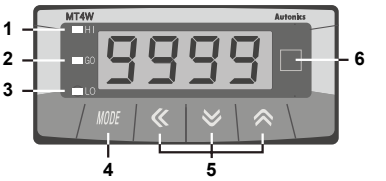
▣ Front panel identification

● MT4Y Series



1. HI : High output indication of preset
2. GO : GO output indication of preset
3. LO : Low output indication of preset

● MT4W Series



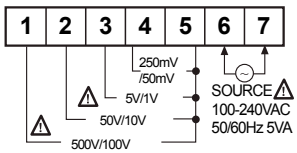
4. MODE **key** : Mode Key
5. ≪ **:** Moves digit, enters parameter mode, ≫ ⩓ **:** changes SV
6. Unit label part

※There is no 1, 2, 3 on a display panel of MT4Y-□-4N, 45, 46 and MT4W-□-4N.
※In MT4Y-□-□3, □4, OUT is used for Go output display and there is no **1**, **3** in display panel.

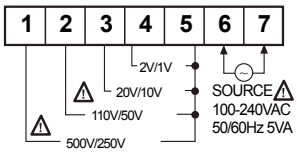
▣ Connections

◎ Measuring input connection of MT4Y Series

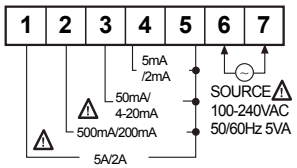
● **MT4Y-DV-4□**



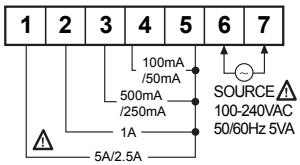
● **MT4Y-AV-4□**



● **MT4Y-DA-4□**

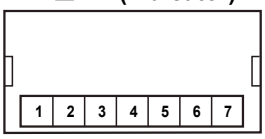


● **MT4Y-AA-4□**

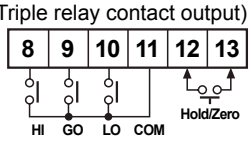


◎ Output terminal of connection of MT4Y Series

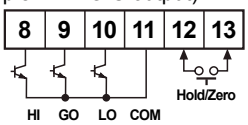
●MT4Y-□-4N (Indicator)



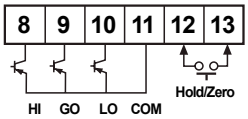
●MT4Y-□-40
(Triple relay contact output)



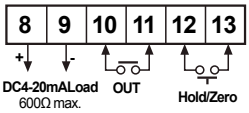
●MT4Y-□-41
(Triple NPN O.C output)



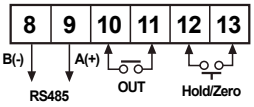
●MT4Y-□-42
(Triple PNP O.C output)



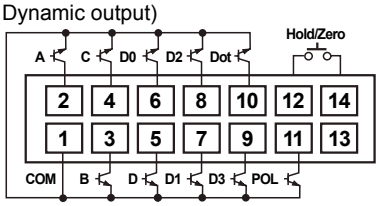
●MT4Y-□-43
(Relay output+Transmission output)

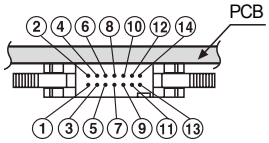


●MT4Y-□-44
(Relay+RS485 communication output)

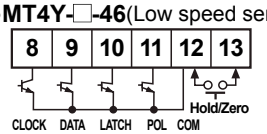


●MT4Y-□-45
(BCD Dynamic output)





●MT4Y-□-46(Low speed serial output)

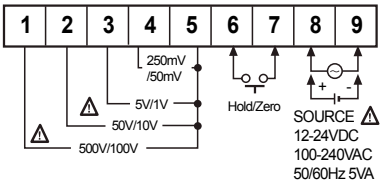


※POL : When a display value is "-", the signal of "-" will be outputted.

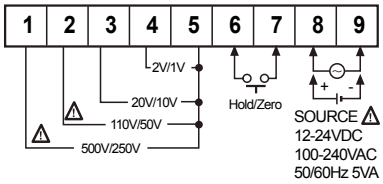
※Hirose connector pin header model of the unit : HIF3BA-14PA-2.54DS
※Contact Hirose Electric to purchase socket and wires of Hirose connector.
[Socket : HIF3BA-14D-2.54R]

◎ Measuring input connection of MT4W Series

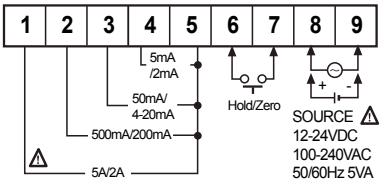
● **MT4W-DV-** □□



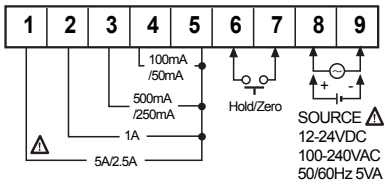
● **MT4W-AV-** □□



● **MT4W-DA-** □□



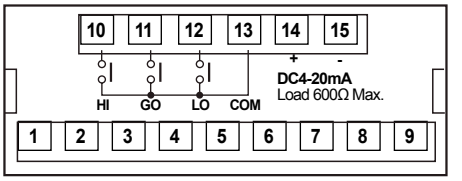
● **MT4W-AA-** □□

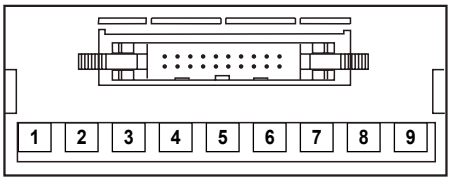


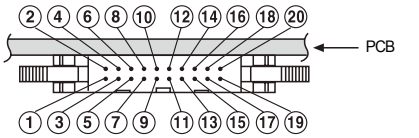
◎ Output terminal connection of MT4W Series

● **MT4W-□-□0**(Triple relay contact output +Transmission output)

MAIN OUT
CONTACT OUT
: 250VAC 3A 1a RESISTIVE LOAD



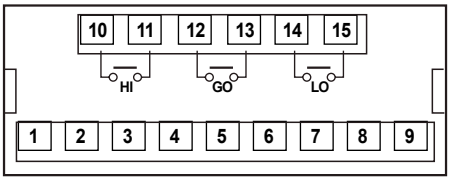




※Hirose connector pin header model of the unit : HIF3BA-20PA-2.54DS
※Contact Hirose Electric to purchase socket and wires of Hirose connector. [Socket: HIF3BA-20D-2.54R]

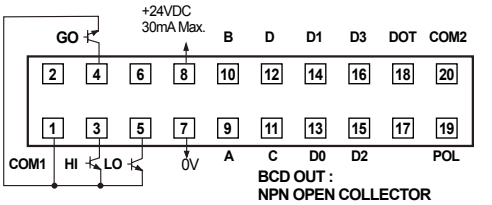
● **MT4W-□-□1** (Triple relay contact output)

MAIN OUT
CONTACT OUT
: 250VAC 3A 1a RESISTIVE LOAD



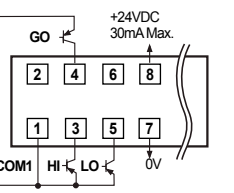
● **MT4W-□-□2 / MT4W-□-□3** (Triple NPN/PNP open collector output+BCD output)

MAIN OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA



BCD OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA

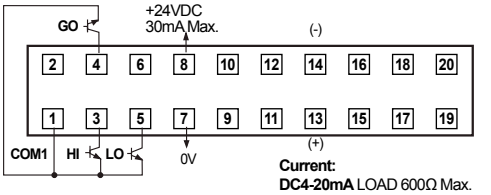
MAIN OUT :
PNP OPEN COLLECTOR
12-24VDC Max. 50mA



※POL: When a display value is "-", the signal of "-" will be outputted.

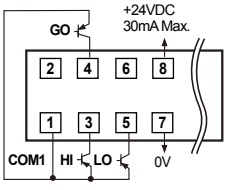
● **MT4W-□-□4/ MT4W-□-□5** (Triple NPN/PNP open collector output+Transmission output)

MAIN OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA



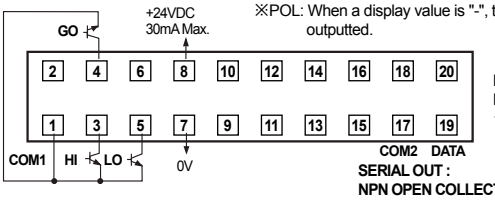
Current:
DC4-20mA LOAD 600Ω Max.

MAIN OUT :
PNP OPEN COLLECTOR
12-24VDC Max. 50mA



● **MT4W-□-□6/ MT4W-□-□7** (Triple NPN/PNP open collector output+Low speed serial output)

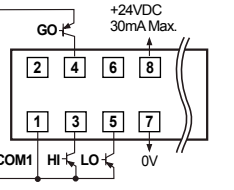
MAIN OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA



※POL: When a display value is "-", the signal of "-" will be outputted.

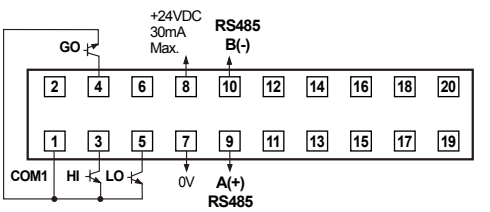
SERIAL OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA

MAIN OUT :
PNP OPEN COLLECTOR
12-24VDC Max. 50mA

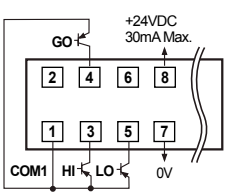


● **MT4W-□-□8/ MT4W-□-□9** (Triple NPN/PNP open collector output+RS485 output)

MAIN OUT :
NPN OPEN COLLECTOR
12-24VDC Max. 50mA



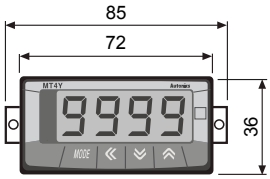
MAIN OUT :
PNP OPEN COLLECTOR
12-24VDC Max. 50mA

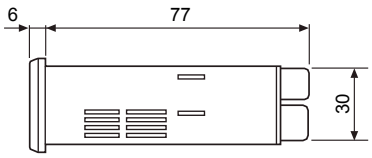


▣ Dimensions

(unit: mm)

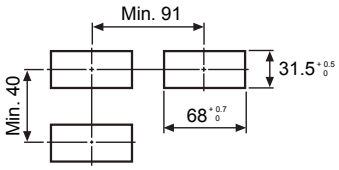
● MT4Y-□-4N, 45, 46





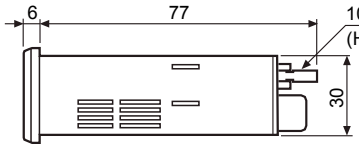
<MT4Y-□□-4N, 40 to 44, 46>

● Panel cut-out



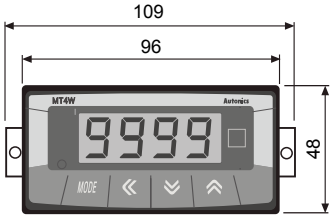
● MT4Y-□-43, 44

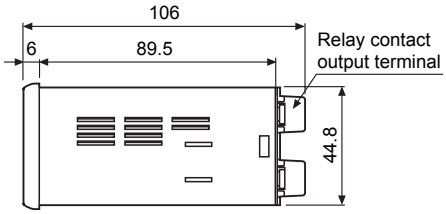
● MT4Y-□-40, 41, 42



<MT4Y-□-45>

● MT4W-□-□N (Indicator)

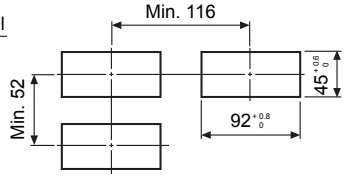




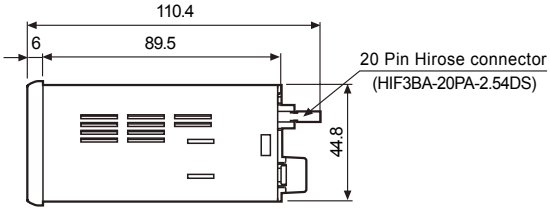
※There is no Relay contact output terminal block in indication type.

< MT4W-□-□N, MT4W-□-□0, □1 >

● Panel cut-out

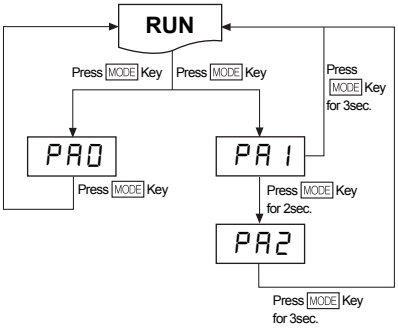


● MT4W-□-□0 to □9



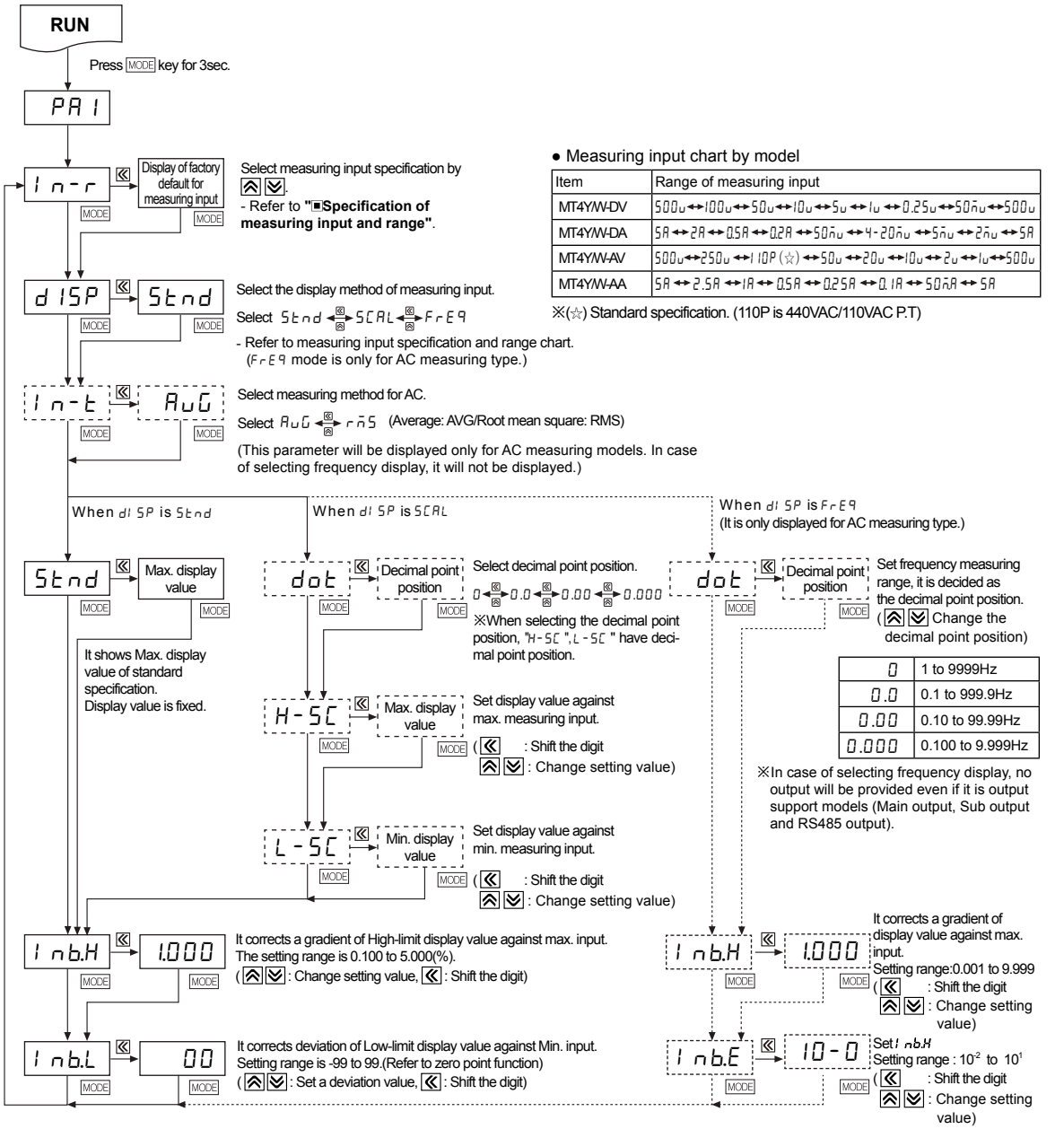
< MT4W-□-□2 to □9 >

▣ Parameter setting



※Press MODE key in **RUN** status, it will advance to [PA0](Parameter 0) group.
※Press MODE key for 2 sec. in **RUN** mode, [PA 1] is displayed.
※ Press MODE key for 4 sec. in **RUN** mode, [PA2] is displayed after [PA 1].
When pressing MODE key continually, it stops displaying at [PA2].
※It is advanced to current display parameter releasing MODE key at [PA 1] or [PA2].
※ Press MODE key for 3 sec., it is returned to **RUN** at any position.
※If any key is not touched for 60 sec. in each parameter, it returns to **RUN** mode.
※ After return to **RUN** mode, press MODE key within 2 sec., it returns to previous parameter.(Refer to the below descriptions for set parameter.)
※It cannot advance to[PA0] when preset output operation mode of [PA2] is [oFF] .

▣ Parameter 1 group



● Measuring input chart by model

Item	Range of measuring input
MT4Y/W-DV	500u↔100u↔50u↔10u↔5u↔1u↔0.25u↔50mu↔500u
MT4Y/W-DA	5A↔2A↔0.5A↔0.2A↔50mu↔4-20mu↔5mu↔2mu↔5A
MT4Y/W-AV	500u↔250u↔110P(☆)↔50u↔20u↔10u↔2u↔1u↔500u
MT4Y/W-AA	5A↔2.5A↔1A↔0.5A↔0.25A↔0.1A↔50mA↔5A

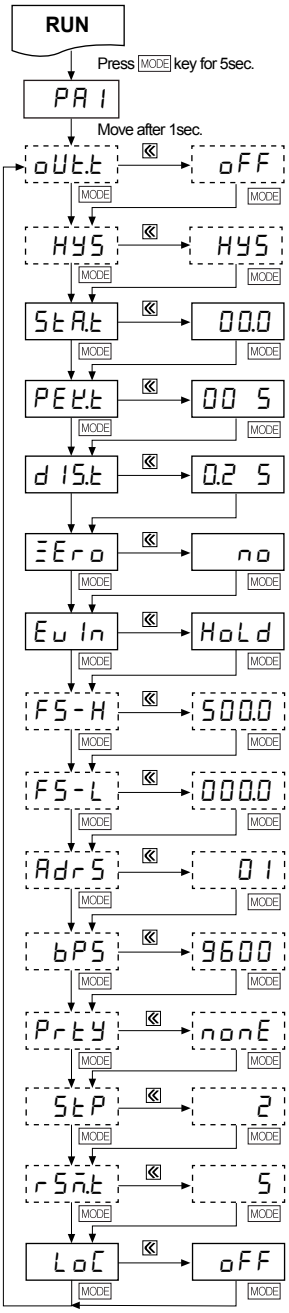
※(☆) Standard specification. (110P is 440VAC/110VAC P.T)

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

◎ Factory defaults

Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA	Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA
In-r	500u	5A	500u	5A	InbH	1.000	1.000	1.000	1.000
d ISP	Stnd	Stnd	Stnd	Stnd	InbL	00	00	00	00
In-t	—	—	AuG	AuG	dot	0.0	0.000	0.0	0.000
Stnd	500.0	5.000	500.0	5.000	InbE	—	—	10-0	10-0

▣ Parameter 2 group



Select Preset output mode. Selectable:
oFF ◀▶ L.St ◀▶ H.St ◀▶ LH.St ◀▶ HH.St ◀▶ LL.St ◀▶ Ld.St
In MT4Y-□-□3,□4, "oFF , LSt " are only displayed.

Set preset hysteresis. Within 10% of F.S.
But, it is not displayed when oUt.t mode is oFF.

Set startup compensation time.
(⟪:Shift the digit, ⩓ ⩔ : Change setting value)
Setting range : 0.0 to 99.9sec.

Set monitoring delay time.
(⟪ :Shift the digit, ⩓ ⩔ : Change setting value)
Setting range : 00 to 30sec.

Set a display cycle. (⟪ :Shift the digit, ⩓ ⩔ : Change setting value)
Setting range : 0.1 to 5.0sec.

Select zero function with operation at front. (Set with ⩓ ⩔ key)
When ⟪ + ⩓ Key key are pressed for 3 sec. to set YES , it will be zero function and the deviation value is saved automatically at InbL mode.

Select input with 6, 7(MT4W)[12, 13(MT4Y)] terminal or zero function for external signal.
(Set with ⩓, ⩔ Key)
HoLd : Holding display value, ZEro : Zero function using Hold/Zero terminal

Set the high limit value, output point of current output 20mA.
(⟪ :Shift the digit, ⩓ ⩔ : Change setting value)
(When changing measuring input and prescale mode, it is changed automatically as maximum value of input range.)

Set the low limit value, output point of current output 4mA.
(⟪ :Shift the digit, ⩓ ⩔ : Change setting value)
(When changing measuring input and prescale mode, it is changed automatically as minimum value of input range.)

Set the address of RS485 communication output.
(⟪ :Shift the digit, ⩓ ⩔ : Change setting value)
Setting range : 01~99

Select Baud rate of RS485 communication output.
Setting range : 9600 ◀▶ 4800 ◀▶ 2400 ◀▶ 1200

Set parity bit of RS485 communication.
Set range: nonE/EuEn/odd

Set stop bit of RS485 communication.
Set range: 1 / 2

Set response wait time of RS485 communication.
Set range: 5 to 99

Set key lock function and select from 4 types.
oFF ◀▶ LoC1 ◀▶ LoC2 ◀▶ LoC3 ◀▶ oFF

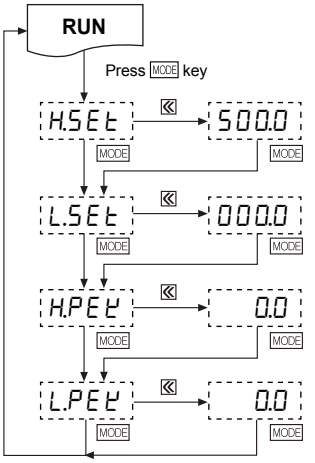
oFF	Disable to lock keys
LoC1	Lock Parameter 1
LoC2	Lock Parameter 1, 2
LoC3	Lock Parameter 0, 1 and 2

※The dotted mode is only displayed for output type.
※After setting each mode, press MODE key for 2 sec. to return to **RUN** mode.
※If any key is untouched for 60sec. after advance to PARAMETER, it will return to **RUN** mode.

◎ Factory defaults

Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA	Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA
oUt.t	oFF	oFF	oFF	oFF	Eu In	HoLd	HoLd	HoLd	HoLd
HYS	001	001	001	001	FS-H	500.0	5.000	500.0	5.000
StAt	00.0	00.0	00.0	00.0	FS-L	000.0	0.000	000.0	0.000
PEr.t	00 5	00 5	00 5	00 5	AdrS	01	01	01	01
dI S.t	0.2 5	0.2 5	0.2 5	0.2 5	bPS	9600	9600	9600	9600
ZEro	no	no	no	no	LoC	oFF	oFF	oFF	oFF

▣ Parameter 0 group



Set preset High-limit value. (Set with ≪, ▲, ▼ key)
※It is displayed when set the preset only.
When set oFF in oUtt mode if PA-2, the parameter is not displayed.

Set preset Low-limit value. (Set with ≪, ▲, ▼ key)
※It is displayed when set the preset only.
When set oFF in oUtt mode if PA-2, the parameter is not displayed.

It shows High-limit monitoring value while it is in RUN mode.
It will be reset by pressing ≪, ▲, ▼ key.

It shows Low-limit monitoring value while it is in RUN mode.
It will be reset by pressing ≪, ▲, ▼ key.
※If "00" is set in PEUt mode of PA-2, H.PEU and L.PEU modes will not be displayed.

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

◎ Factory defaults

Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA	Parameter	MT4Y/W-DV	MT4Y/W-DA	MT4Y/W-AV	MT4Y/W-AA
H.SEt	500.0	5.000	500.0	5.000	H.PEU	0.0	0.000	0.0	0.000
L.SEt	000.0	0.000	000.0	0.000	L.PEU	0.0	0.000	0.0	0.000

▣ Measuring input and range

Type	Measuring input and range		Input impedance	Display range [Stnd]	Prescale display range [SCAL]
DC Volt	0-500V	[500u]	4.33MΩ	0.0 to 500.0	
	0-100V	[100u]	4.33MΩ	0.0 to 100.0	
	0-50V	[50u]	433.15kΩ	0.00 to 50.00	
	0-10V	[10u]	433.15kΩ	0.00 to 10.00	
	0-5V	[5u]	43.15kΩ	0.000 to 5.000	
	0-1V	[1u]	43.15kΩ	0.000 to 1.000	
	0-250mV	[0.25u]	**2.15kΩ**	**0.0 to 250.0**	
	0-50mV	[50mu]	2.15kΩ	0.00 to 50.00	
DC Ampere	0-5A	[5A]	0.01Ω	0.000 to 5.000	
	0-2A	[2A]	**0.01Ω**	**0.000 to 2.000**	
	0-500mA	[0.5A]	0.1Ω	0.0 to 500.0	
	0-200mA	[0.2A]	**0.1Ω**	**0.0 to 200.0**	
	0-50mA	[50mA]	**1.0Ω**	**0.00 to 50.00**	
	4-20mA	[4-20]	1.0Ω	4.00 to 20.00	
	0-5mA	[5mA]	**10.0Ω**	**0.000 to 5.000**	
	0-2mA	[2mA]	10.0Ω	0.000 to 2.000	
AC Volt	0-500V	[500u]	4.98MΩ	0.0 to 500.0	
	0-250V	[250u]	**4.98MΩ**	**0.0 to 250.0**	
	0-110V	[110P]	1.08MΩ	0.0 to 440.0	
	0-50V	[50u]	1.08MΩ	0.00 to 50.00	
	0-20V	[20u]	**200kΩ**	**0.00 to 20.00**	
	0-10V	[10u]	**200kΩ**	**0.00 to 10.00**	
	0-2V	[2u]	**20kΩ**	**0.000 to 2.000**	
	0-1V	[1u]	**20kΩ**	**0.000 to 1.000**	
AC Ampere	0-5A	[5A]	0.01Ω	0.000 to 5.000	
	0-2.5A	[2.5A]	**0.01Ω**	**0.000 to 2.500**	
	0-1A	[1A]	0.05Ω	0.000 to 1.000	
	0-500mA	[0.5A]	0.1Ω	0.0 to 500.0	
	0-250mA	[0.25A]	**0.1Ω**	**0.0 to 250.0**	
	0-100mA	[0.1A]	**0.5Ω**	**0.0 to 100.0**	
	0-50mA	[50mA]	0.5Ω	0.00 to 50.00	

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

(The display range is changed according to the decimal point position.)

※Please connect proper terminal its max. input voltage is within 30 to 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%.

※110P is standard specification 440V/110VAC P.T.

▣ Functions

◎ AC frequency measurement function [PA 1 group: dI SP]

It measures input signal frequency when it is AC input.
It uses fixed decimal point[**PA1**: dot], measured range can be changed by setting and measured range of decimal point position is as below chart. It is available to adjust the upper gradient at [**PA 1**: InbH]and [**PA 1** : InbE]. In order to measure frequency normally, input signal, over 10% F.S. of the measured range, should be supplied. Please select the proper point of

① Measuring range

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

※Accuracy of frequency measurement :
Below 1kHz, F.S. ±0.1rdg ±2digit.
From 1kHz to 10kHz, F.S. ±0.3rdg ±2digit.

② InbH : 0.100 to 9.999 [Gradient adjustment of high value]

③ InbE : 10^{-2}, 10^{-1}, 10^{0}, 10^{1}[Index adjustment of InbH]

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

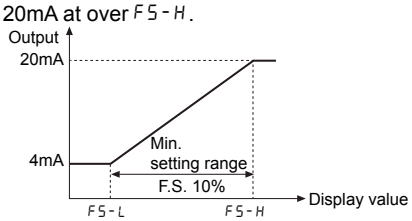
It adjusts the display value of the optional configured input value as zero by force, zero point error can be adjusted with 3 ways as below. When zero point adjustment with front key and Hold terminal is finished normally, zero point of measurement terminal is displayed and the adjusted value at saved in InbL automatically.

Operation	Input correction value	Front panel key	External input signal
Description	PA 1: Direct input correction value method at InbL mode.	Press both [≪], [≫]keys for 3 sec. at the measuring mode.	Short-circuit external Hold terminal no.11,12 [no. 6, 7(MT4W)]over min. 50m. ※It is enable to use in option mode.

※Refer to "**◎ Error correction function**", "**◎ Error display function**" and "**▣ Parameter 2**" for function and error.

◎ Current output(DC4-20mA) scale function [PA2 group: FS-H / FS-L]

It sets current output for the display value at the output current DC 4-20mA.
It sets display value for 4mA at FS-L and 20mA at FS-H and the range between FS-H and FS-L should be 10%
※When min. set interval between FS-H and FS-L is set as under 10% F.S., it changed as over 10% F.S. automatically.)
※Preset display value is fixed to output as 4mA at under FS-L and 20mA at over FS-H.



◎ Initialization function

It initializes as the factory default status. If press [≪], [≫], [≫] keys together for 2sec. in RUN mode, InIt mode and the setting value (no) is displayed every 0.5 sec. and it will be initialized as the factory default when press [MODE] key after change no → YES .

◎ Startup compensation time function [PA 2 group : StAt]

This time function limits the operation of an output until the measured input(overvoltage or inrush current) is stable at moment of power on. All outputs are off during startup compensation time setting after power is applied.
Setting range : 00.0 to 99.9(unit: sec.)
Factory default : 00.0

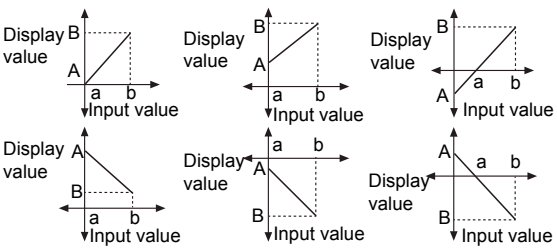
◎ Error display function

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	Lights when display input is exceeded the max. display range(9999) or H-SC setting value
d-LL	Lights when display input is exceeded the min. display range (-1999) or L-SC setting value
F-HH	Flashes when measuring frequency is exceeded themax. measuring rvalue (9999)
ouEr	Flashes when it exceeds zero adjustment range(±99)

※Error display is released automatically when it is in the measured and display range.
※"LLLL" is displayed when the measuring input is 4-20mA.
※ After flashing "ouEr" 2 times when it exceeds the zero range, it returns to RUN mode.

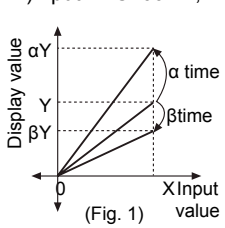
◎ Display scale function[PA 1 group: H-SC/L-SC]

This function is to display setting(-1999 to 9999) of particular High/Low-limit value in order to display High/Low-limit value of measured input. If measured inputs are 'a' and 'b' and particular values are 'A' and 'B', it will display a=A, b=B as below graphs.

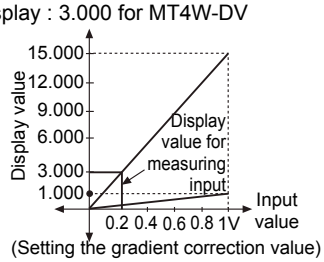


◎ Gradient correction function [PA 1 group: InbH]

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[InbH]. 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)Input : DC200mV, Display : 3.000 for MT4W-DV



(Fig. 1)



(Setting the gradient correction value)

① Select 0-1VDC for measuring input in Parameter1.
② Standard specification in input : 0-1VDC and 1.000 therefore it has to be 15.000 (H-SC) for 1VDC(input) in order to display 3.000 for DC200mV(input). But it is disable due to setting range is 9.999
③ In this case, please check below chart.
Please set as inb.H × H-SC =15.000

Setting	H-SC	L-SC	inb.H	Other
①	Disable	0.000	1.000	—
②	7.500	0.000	2.000	It will be the same display value.
③	5.000	0.000	3.000	
④	3.750	0.000	4.000	
⑤	3.000	0.000	5.000	

◎ Error correction function [PA 1 group : inb.H / inb.L]

It corrects display value error of measured input.
inb.L : ±99 (Adjust deviation of low value)
inb.H : 5.000 to 0.100 [Correct gradient(%) of high value]
Display value=(Measured value × inb.H) + inb.L
Ex)Low value correction
When there is an application where there is a residual voltage of 1.2V, but a 0V display is desired, then it is possible by adjusting the inb.L parameter setting to 12(offset correcting value or equal to 1.2V without decimal) that the desired display value of 0 can be achieved.
Ex)High value correction
When there is an application where the high actual value of display is 501 and exceeds the 500V display range, then it is possible by adjusting the inb.H parameter setting to 0.998(calculated by desired value of 500/actual value of 501), that the desired value can be achieved.
※The offset correction range of inb.L is within -99 to 99 for D-0, D-1 digit regardless of decimal point.

◎ Display cycle delay function [PA 2 group: dISt]

In some applications the measured input may fluctuate which in turn causes the display to fluctuate. By adjusting the display cycle delay function time in the dISt mode in parameter 2, the operator can adjust the display time within a range of 0.1 sec to 5 sec. For example, if the operator sets the display cycle time to 4.0 sec., the display value displayed will be the average input value over 4 sec. and also will show any changes if any every 4 sec.

◎ Monitoring peak display value function [PA 0 group: H.PEU/L.PEU, PA 2 group: PEUt]

It monitors max./min. value of display value based on the current displays value and then displays the data at H.PEU, L.PEU of parameter 0. Set the delay time(0 to 30 sec.) at PEUt of parameter 2 in order to prevent malfunction caused by initial overcurrent or overvoltage, when monitoring the peak value. Delay time is 0 to 30 sec. and it starts to monitor the peak value after the set time. When pressing any one of ◁ ▽ △ keys at H.PEU, L.PEU of parameter 0, the monitored data is initialized.
※Monitoring function is not indicate when the delay time is set as "005"at PEUt of parameter 2.

◎ Preset output Mode [PA 2 group : oUt.t mode]

Mode	Output operation	Operation
	HSEt, LSEt	H: Hysteresis
oFF		No output
L.St	GO, LO, H	If it is equal or smaller than low setting value, LO output will be ON. If it is bigger than low setting value, GO output will be ON.
H.St	HI, GO, H	If it is equal or bigger than high setting value, HI output will be ON. If it is equal or smaller than high setting value, GO output will be ON.
LH.St	HI, GO, LO, H	If it is equal or smaller than low setting value and equal or bigger than high setting value, the output will be ON. If it is bigger than Low setting value and smaller than high setting value, GO output will be ON.
HH.St	HI, GO, LO, H	If it is equal or bigger than low set and equal or bigger than high set value, output will be ON. If it is smaller than low setting value and high setting value, GO output will be ON.
LL.St	HI, GO, LO, H	If it is equal or smaller than low setting value, LO output will be ON. If it is equal or smaller than high setting value, HI output will be ON. If it is bigger than low setting value and High setting value, GO output will be ON.
Ld.St	GO, LO, H	This operation is the same as L.St But it doesn't operate at initial low set value, it will operate at next low set value. If this is higher than low set value, Go output will be ON.

※"H" means hysteresis and able to set 1 to 99 at "HYS" mode in para-meter 2 among above comparison output chart.
※In MT4Y-□-□3, □4, L.St modes are only available to use.

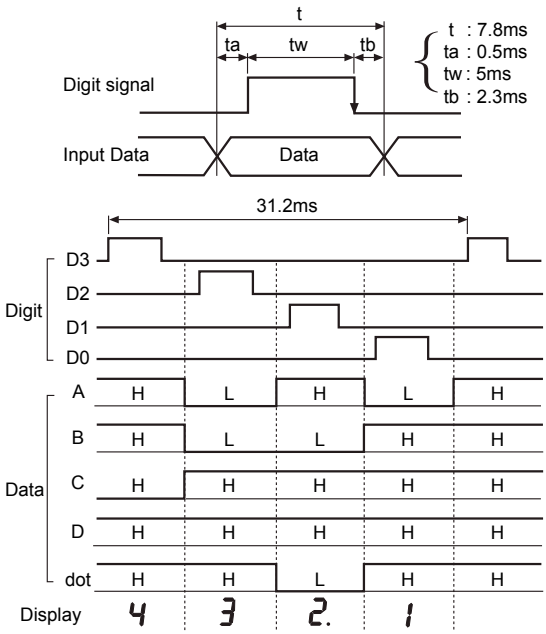
◎ Sub output(Transmission function)

- RS485 communication output
  It is able to set address(01 to 99)
  It is able to transmit by selecting modulation speed (Transmitted number of signal per 1sec.) of serial trans -mission. (Selectable 1200, 2400, 4800, 9600bps)
- Low-speed serial output
  It outputs current display value as Low-frequency(50Hz) type.
- Current output(DC4-20mA)
  It outputs DC4-20mA against High/Low-limit scale. (Resolution: 12000 division)
- BCD output
  It outputs display value as BCD Code..

※**Only one sub-output is selectable.**
(More than one sub-output is not allowed.)

◎ Time chart of BCD output and Serial output

● BCD output(Negative logic)



● Serial output(Negative logic)-Clock frequency:50Hz