Autonics

PANEL METER
MT4N SERIES

M A N U A L

CE

▨ : Upgrade feature

Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

■ Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow:
⚠ **Warning** Serious injury may result if instructions are not followed.
⚠ **Caution** Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.
⚠ Caution: Injury or danger may occur under special conditions.

⚠ Warning

1. In case of using this unit with machinery(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it is required to install fail-safe device.
   It may cause a fire, human injury or property loss.
2. It must be mounted on panel.
   It may give an electric shock.
3. Do not connect, inspect or repair terminals when it is power on.
   It may give an electric shock.
4. Do not disassemble or modify this unit. If needs, please contact us.
   It may cause a fire and give an electric shock.
5. Please check the number of terminal when connecting power or measured input.
   It may cause a fire.

⚠ Caution

1. This unit shall not be used outdoors.
   It might shorten the life cycle of the product or give an electric shock.
   Use this product indoors only. Do not use the product outdoors or at locations subject to the temperatures or humidity outside.(Example: rain, dirty, frost, sunlight, condensation, etc.)
2. When connecting wire, use AWG 20(0.50㎜²) be used and tighten screw bolt on terminal block with 0.74 to 0.90N·m strength.
   It may cause a malfunction or fire due to contact failure.
3. Please observe the rated specification.
   It might shorten the life cycle of the product and cause a fire.
4. Do not use beyond of the rated switching capacity of relay contact.
   It may cause insulation failure, contact melt, contact failure, relay broken and fire etc.
5. In cleaning the unit, do not use water or an oil-based detergent.
   It may cause a fire and give an electric shock.
6. Do not use this unit in place where flammable or explosive gas, humidity, direct ray of the light, radiant heat, vibration or impact, etc. exists.
   It may cause a fire or explosion.
7. Do not inflow dust or wire dregs into the unit.
   It may cause a fire or mechanical malfunction.
8. Please wire properly after checking the polarity of measuring terminals.
   It may cause a fire or explosion.

■ Ordering information

MT	4N	– DV	– E	N

Control output:
- 0 Without output function
- 1 Relay output (2 Contacts)
- 2 NPN Open collector output (OUT1,GO,OUT2)
- 3 PNP Open collector output (OUT1,GO,OUT2)
- 4 Relay(OUT1)+PV transmission(DC4~20mA)output
- 5 Relay(OUT2)+RS485 communication output

Power supply:
- E 12~24VDC/AC
- 4 100~240VAC

Input:
- DV DC Volt
- DA DC Ampere
- AV AC Volt
- AA AC Ampere

Size: N DIN W48×H24㎜

Digit: 4 9999(4 Digit)

Item: MT Multi Meter

■ Front panel identification

① OUT1: Preset output of OUT1
② GO: Preset Go output of OUT1/OUT2
③ OUT2: Preset output of OUT2
④ MODE: MODE key
⑤ ≪ Shift key   ⑧ mV, V Unit
⑥ ▽ Down key   ⑨ mA, A Unit
⑦ △ Up key   ⑩ Hz Unit

■ Panel cut-out
(Unit: mm)

Min. 55
Min. 37
22.2⁺⁰·³₋₀
45⁺⁰·⁶₋₀

■ Terminal connection

- MT4N-DV-□□
- MT4N-DA-□□
- MT4N-AV-□□
- MT4N-AA-□□

〈Option〉
- Relay output [MT4N-□□-□0]
- NPN Open Collector output [MT4N-□□-□1]
- PNP Open Collector output [MT4N-□□-□2]
- Relay+Current(DC4~20mA) output [MT4N-□□-□3]
- Relay+RS485 communication output [MT4N-□□-□4]

■ Prescale function[PA1: 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 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.

■ Error display function

Display	Description
HHHH	Flashes when measured input is exceeded the max.allowable input(110%)
LLLL	Flashes when measured input is exceeded the min.allowable input(−10%)
d-HH	Flashes when display input is exceeded H-SC setting value
d-LL	Flashes when display input is exceeded L-SC setting value
F-HH	Flashes when input frequency is exceeded the max. display value of measuring range
ouEr	Flashes when it exceeds zero range(±99)

※ Zero adjusting error is returning to measuring mode after [o.uEr] flashes twice.
※ Refer to "■ Measuring AC frequency function" for frequency measuring range.

■ Initialization function

It initializes parameter setting state. Press ≪ +△ keys simultaneously for over 5 sec. in RUN status, it returns to factory default value.

Ex)
RUN
≪+△ Press for over 5 sec.
InIt
no
YES
MODE

■ Display cycle delay function [PA 2: dl 5.t mode]

In some applications may fluctuate which in turn causes the display to fluctuate. By adjusting the display cycle delay function time in the dl 5.t 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 delay function 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.

■ Startup compensation timer function [PA 2: 5tR.t mode]

This time function limits the operation of an output until the measured input(overvoltage or inrush current) is stable at maximum of power on. All outputs are off during startup compensation time setting after power is applied.
Setting range: 00.0 to 99.9 (min: sec.)   Factory default: 00.0
※ **The above specifications are subject to change without notice.**

■ Specifications

Model	MT4N
Power supply	12~24 VDC/AC	100~240 VAC
Power consumption	DC: 3W, AC: 5VA	5VA
Display method	7 Segment LCD Display, Character height: 9mm
Display accuracy	23℃ ± 5℃ ⎡ DC Type: F.S.±0.1% rdg±2digit / AC Type: F.S.±0.3% rdg±2digit DC/AC Type: Within F.S.±0.3% rdg±3digit only for Current 5A terminal −10℃ to 50℃ ⎡ DC/AC Type: F.S.±0.5% rdg±3digit
Input	DC Voltage/Current, AC Voltage/Current, AC Frequency
Max. allowable input	110% F.S. for input range
A/D conversion method	Practical oversampling using successive approximation ADC
Sampling time	50ms(DC), 16.6ms(AC) (1/12,000)
Max. display range	−1999 to 9999(4 Digit)
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
Frequency measuring function	Measurement range: 0.100 to 9999Hz(Differ according to decimal point position)
Hold function[1]	Includes(Outer hold function)
Insulation resistance	Min. 20㏁(at 500VDC megger)
Dielectric strength	1000VAC for 1 minute (Between external terminal and case)	2000VAC for 1 minute (Between external terminal and case)
Noise strength	±2kV the square wave noise(pulse width: 1㎲) by the noise simulator
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z direction for 2 hours
	Mechanical	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z direction for 10 minutes
Shock	Mechanical	100m/s²(Approx. 10G) in X, Y, Z directions for 3 times
	Malfunction	300m/s²(Approx. 30G) in X, Y, Z directions for 3 times
Environ- ment	Ambient temperature	−10 to 50℃, Storage: −20 to 60℃
	Storage humidity	35 to 85%RH, Storage: 35 to 85%RH
Insulation type[2]	▨	–
Approval	CE	–
Unit weight	Approx. 64g

※ 1. "▨" Mark indicated that equipment protected throughout by double insulation or reinforced insulation.
※ 2. The indicator has no Hold function.
※ Environment resistance is rated at no freezing or condensation.

■ Specification of measured input and range

Type		Measured input and range	Input impedance	Standard [Stnd] Display rang (Fixed)	Prescale [SCRL] Prescale range (Variable)
DC Volt		0~50V [50V]	434.35kΩ	0.00 to 50.00(Fixed)	
		0~10V [10V]	434.35kΩ	0.00 to 10.00(Fixed)	
		0~5V [5V]	43.35kΩ	0.000 to 5.000(Fixed)	
		0~1V [1V]	43.35kΩ	0.000 to 1.000(Fixed)	−1999 to 9999(Variable)
		0~250mV [250mV]	2.15kΩ	0.0 to 250.0(Fixed)	−199.9 to 999.9(Variable)
		0~50mV [50mV]	2.15kΩ	0.0 to 50.00(Fixed)	−19.99 to 99.99(Variable)
DC Ampere		0~500mA [500mA]	0.1Ω	0.0 to 500.0(Fixed)	−1.999 to 9.999(Variable)
		0~200mA [200mA]	0.1Ω	0.0 to 200.0(Fixed)	
		4~20mA [4-20mA]	1.1Ω	4.00 to 20.00(Fixed)	(Display position will be different depending on decimal point position.)
		0~5mA [5mA]	11.1Ω	0.000 to 5.000(Fixed)	
		0~2mA [2mA]	11.1Ω	0.000 to 2.000(Fixed)	※Please wire proper terminal to its max. input voltage within 30 to 100% of input terminal.
AC Volt		0~250V [250V]	1.109MΩ	0.0 to 250.0(Fixed)	
		0~125V [125V]	1.109MΩ	0.0 to 125.0(Fixed)	When it is higher than input voltage, it may cause breakdown of terminal and over display range and the accuracy is decreased when it is connected to the terminal under 30%.
		0~50V [50V]	222kΩ	0.00 to 50.00(Fixed)	
		0~25V [25V]	222kΩ	0.00 to 25.00(Fixed)	
		0~5V [5V]	22kΩ	0.000 to 5.000(Fixed)	
		0~2.5V [2.5V]	22kΩ	0.000 to 2.500(Fixed)	
AC Ampere		0~5A [5A]	0.01Ω	0.00 to 5.000(Fixed)	
		0~2.5A [2.5A]	0.01Ω	0.000 to 2.500(Fixed)	
		0~500mA [500mA]	0.5Ω	0.0 to 500.0(Fixed)	
		0~250mA [250mA]	0.5Ω	0.0 to 250.0(Fixed)	
		0~100mA [100mA]	0.5Ω	0.0 to 100.0(Fixed)	
		0~50mA [50mA]	0.5Ω	0.0 to 50.00(Fixed)	

■ Monitoring peak display value function
[PA 0: H.PEt/L.PEt mode, PA 2: PEt.t mode]

It monitors Max./Min. value of display value based on current display value and then display the data in H.PEt mode and L.PEt mode of parameter 0. Set delay time(0 to 30 sec.) in PEt.t mode of parameter 2 in order to avoid 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 set time.
When ≪△ keys are pressed at H.PEt and L.PEt mode of parameter 0, it will be initialized.
※ Monitoring result is not indicated when setting the PEt.t of parameter 2 as "0".

■ Current output(DC4-20mA) Scale adjustment function
[PA 2: F5-H/F5-L mode]

It sets current output for preset display value at the output current 4~20mA DC.
It sets display value for 4mA in F5-L and 20mA in F5-H and set range between F5-H and F5-L should be 10% F.S.(When it 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 F5-L and 20mA at over F5-H.

■ Error correction function
[PA 1: Inb.H/Inb.L mode]

It corrects display value error of measured input.
Inb.L: ±99 (direct input value)
Inb.H: 5.000 to 0.100(Correct gradient(%) of input 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⁻¹, D⁻¹ input regardless of decimal point.
※ Refer to description [■ Error correction function], [■ Error indication function] and [■ Parameter 2] for function and error.

■ Zero adjustment function

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 measuring terminal is displayed and the adjusted value is saved in Inb.L automatically.

Oper- ation	Input correction value	Front key	Input external signal
Des- cription	PA1: Direct input correction value method at Inb.L mode	Press both keys for 3 sec. at the measuring mode.	Short−circuit external Hold terminal no.11, 12 over min.50m. ※It is enable to use in option mode.

■ Gradient correction function [PA 1: Inb.H mode]

It corrects a gradient of prescale value and display value.
(Figure 1)Display value Y can be adjusted as α, β times against X input value by correction function [Inb.H] and used as correction function of max. display value [H-SC]. Adjustment range is 0.100 to 5.000 and multiply current gradient by the setting.

Ex) To display "3.000" in DC 200mV input for measured input specification as to 0 to 1V,
① Select 0~1VDC for measured input in Parameter 1
②Standard 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 200mVDC(measured).
   But it is unable due to setting range is 9.999.
③In this case, please check below chart. Please set as Inb.H×H-SC=15.000

Setting method	H-SC	L-SC	Inb.H	Remark
①	Unavailable	0.000	1.000	In this case, any setting methods display same display value.
②	7.500	0.000	2.000	
③	5.000	0.000	3.000	
④	3.750	0.000	4.000	
⑤	3.000	0.000	5.000	

■ Preset output mode [PA 2: oU1.t/oU2.t mode]

Mode	Output operation	Operation
oFF	No output	No output
HI	OUT1.H / OUT1 output	Period ON: Display value ≧OUT1.H Period OFF: Display value ＜ OUT1.H−Hys
Lo	OUT1.L / OUT1 output	Period ON: Display value ≦OUT1.L Period OFF: Display value ≧OUT1.L+HYS
HL	OUT1.H / OUT1.L / OUT1 output	Period ON: Display value ≧OUT.H+Hys Display value ≦OUT.L−Hys Period OFF: Display value ＜OUT.H−Hys or Display value ＞OUT.L+Hys
HL-G	OUT1.H / OUT1.L / OUT1 output	Period ON: OUT1.L≦Display value≦OUT1.H+Hys Period OFF: Display value ＜OUT1.L or Display value ＞OUT.H+Hys

※ 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 depending on output operation mode.
※ GO outputs when the period both OUT1/OUT2 are off.(NPN/PNP Open collector output type)

■ Parameter

Parameter		Display	Function	Note
PR1 (Parameter 1)	In-t	Input type	Selectable RMS/AVG in AC type	Available AC type only.
	In-r	Input range	Input range selection	
	dI SP	Display type	Display type selection	Selectable: Stnd,SCRL,FrE9
	Stnd	Standard	Standard scale range	Display max. display value of Stnd
	FrE9	Frequency	Frequency display	Available AC type only.
	SCRL	Scale	Scale range	These are displayed in SCRL only and set max/min. display range(−1999 to 9999).
	H-SC	High scale	Set max. value of display range	
	L-SC	Low scale	Set min. value of display range	
	dot	Dot	Set decimal point position	It is displayed in SCRL,FrE9 only and set the position
	Inb.H	Input bias high	Correct High−limit gradient of display value	Stnd/SCRL Correction range: 0.100 to 5.000
	Inb.L	Input bias low	Correct Low−limit gradient of display value	FrE9 Correction range: 0.100 to 9.999
	Inb.E	Input bias exponent	Set display index of frequency mode	Set range: 10⁻²/10⁻¹/10⁰/10¹
PR2 (Parameter 2)	oU1.t	Out1 type	Select output mode of OUT1	oFF/HI/Lo/HL/HL-G
	oU2.t	Out2 type	Select output mode of OUT2	oFF/HI/Lo/HL/HL-G
	HYS.1	Out1 hysteresis	Select hysteresis of OUT1	Within 1 to F.S. 10%(Variable depending on set of input range and prescale.)
	HYS.2	Out2 hysteresis	Select hysteresis of OUT2	
	5tR.t	Startup compensation	Set startup compensation time	Set range: 0.0 to 99.9 sec.
	PEt.t	Peak time	Set monitoring delay time for peak value(sec)	Set range: 00 to 30 sec.
	dI S.t	Display time	Set display time(sec)	0.1 to 5.0 sec. (Variable by 0.1 sec.)
	CoL.r	Color	Select color	red/Grn/r-G: Display with 1 color
	zEro	Zero	Enable zero adjustment key	No: Enable/disable zero adjustment key Yes: Enable zero adjustment key Hold: Use external terminal as Hold terminal
	Eu.In	Event input	Set external terminal(11, 12) function	Available Event input only.
	F5-H	Full scale high	Set High−limit value output position of PV output	Min. set range: Min. 10% F.S.
	F5-L	Full scale low	Set Low−limit value output position of PV output	Max. set range: Max. F.S.+ F5-H 10%
	Rd-5	Address	Set communication address	Set range: 01 to 99
	bP5	Bit per second	Set baud rate(bps)	Selectable: 1200/2400/4800/9600
	PrtY	Parity bit	Set parity bit	Selectable: None/ Even/ Odd
	5tP	Stop bit	Set stop bit	Set range: 1/2
	r5.t	Response waiting time	Set response waiting time	Set range: 5 to 99
	LoC	Lock	Enable lock status	Selectable: oFF/LoC1/LoC2/LoC3
PR0 (Parameter 0)	oU1.H	OUT1 high preset	Set value of OUT1 High−limit output	Set the range within display range of Stnd/SCRL
	oU1.L	OUT1 low preset	Set value of OUT1 Low−limit output	
	oU2.H	OUT2 High preset	Set value of OUT2 High−limit output	For MT4N-DV/DA Type, set range of oU1.H/oU2.H and oU1.L/oU2.L is within −5 to 110%
	oU2.L	OUT2 Low−limit preset	Set value of OUT2 Low−limit output	
	H.PEt	High peak	Max. value by data monitoring	≪ key is pressed, it will be returned to initial status.
	L.PEt	Low peak	Min. value by data monitoring	

■ Parameter setting

RUN
MODE key 2 sec.
PR1
MODE key
PR2

※ Press MODE key for 2 sec. in RUN mode, [PR1](Parameter 1) is displayed.
※ Press MODE key for 4 sec. in RUN mode, [PR2] is displayed after [PR1].
   When press MODE key is pressed continually, it stops displaying at [PR2].

※ It is advanced to parameter setting releasing MODE key at [PR1] or [PR2].
※ 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 will return to RUN mode.

※ After return to RUN mode, press MODE key within 2 sec., it will return to previous parameter. (Refer to the below descriptions for set parameter.)

■ Change the parameter setting value

1. Advance to the parameter to be changed when press MODE key continuously in RUN mode and release MODE key at the parameter. (Refer to "■ Parameter setting")
2. When press MODE 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.

Ex) Mode ≪▽△ → Setting value
Press one — Saved setting value flashes every 0.5 sec.

4. Change the set value by ▽ △ or ≪ key when setting value is flashed.

Ex) Change AC type measured input from 250V to 125V.
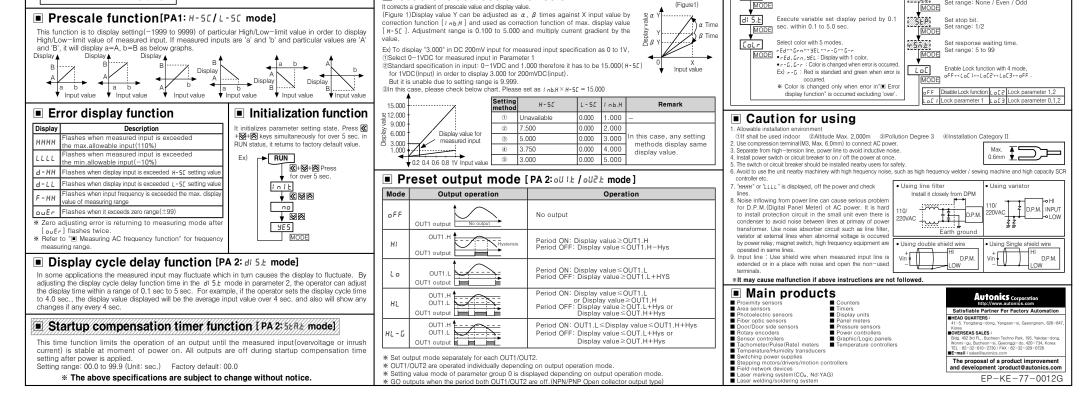Mode ≪▽△ → Setting value 250u → Setting value 125u
Press one

5. When press MODE key to complete the change and it is advanced to the next mode after flashes 2 times.
6. When press MODE key for 3 sec. after change, it returns to RUN mode.

■ Parameter 0

RUN
MODE
oU1.H — Set High−limit preset value of oU1.t. (It is not displayed when oU1.t mode of PA2 is oFF.) ※Change the value by ≪▽△ keys.
MODE
oU1.L — Set Low−limit preset value of oU1.t. (It is not displayed when oU1.t mode of PA2 is oFF.) ※Change the value by ≪▽△ keys.
MODE
oU2.H — Set High−limit preset value of oU2.t. (It is not displayed when oU2.t mode of PA2 is oFF.) ※Change the value by ≪▽△ keys.
MODE
oU2.L — Set Low−limit preset value of oU2.t. (It is not displayed when oU2.t mode of PA2 is oFF.) ※Change the value by ≪▽△ keys.
MODE
H.PEt — It displays High peak value in RUN mode and ≪△ keys are pressed, it is reset.
MODE
L.PEt — It displays Low peak value in RUN mode and ≪△ keys are pressed, it is reset.

If PEt.t monitoring delay time in PA2 is '00', H.PEt and L.PEt are not displayed.

■ Parameter 1

PR1
MODE
In-r — Select measured input specification. (Refer to "■ Specification of measured input and range")
MODE
dI SP — Set display type for measured input as Stnd↔SCRL↔FrE9 and FrE9. It is only available for AC type.
MODE
In-t — Select measuring type for AC input type. Select ⌐A5 ↔ RuG.
MODE
〈When dI SP is Stnd〉 Stnd — It shows max. display value of standard specification. Display value is fixed.
〈When dI SP is SCRL〉 dot — Set decimal point position. 0→0.0→0.00→0.000 ↑_____↓ MODE H-SC — Set display value for max. input of measured input. MODE L-SC — Set display value for min. input of measured input. MODE dUnt — Set display unit. mV/V/mA/A/Hz/off MODE
〈When dI SP is FrE9〉 dot — Set frequency measuring range. (Refer to "■ Measuring AC frequency function".) MODE
Inb.H — Adjust High−limit display value gradient for max. input. Set range: 0.100 to 5.000
MODE
Inb.L — Adjust Low−limit display value deviation for min. input. Set range: −99 to 99
MODE
Inb.H — Adjust High−limit display value gradient for max. input. Set range: 0.100 to 9.999
MODE
Inb.E — Set index for frequency display. Set range: 10⁻²~10⁻¹ 10⁰~10¹
MODE

〈Measured input specification for each model〉

Model	Measured input range
MT4N-DV	50V ⇄ 10V ⇄ 5V ⇄ 1V ⇄ 250mV ⇄ 50mV ⇄ 50V
MT4N-DA	500mA ⇄ 200mA ⇄ 4-20mA ⇄ 5mA ⇄ 2mA
MT4N-AV	250V ⇄ 125V ⇄ 50V ⇄ 25V ⇄ 5V ⇄ 2.5V ⇄ 250V
MT4N-AA	5A ⇄ 2.5A ⇄ 500mA ⇄ 250mA ⇄ 100mA ⇄ 50mA ⇄ 5A

■ Parameter 2

PR2
MODE
oU1.t — Select Preset output mode of OUT1 as oFF↔HI↔Lo↔HL↔HL-G But, it is only displayed in OUT1 output included model.
MODE
oU2.t — Select Preset output mode of OUT2 as oFF↔HI↔Lo↔HL↔HL-G But, it is only displayed in OUT2 output included model.
MODE
HY5.1 — Select hysteresis of OUT1 within 10% of F.S. But, it is not displayed when oU1.t mode is oFF.
MODE
HY5.2 — Select hysteresis of OUT2 within 10% of F.S. But, it is not displayed when oU2.t mode is oFF.
MODE
5tR.t — Set startup compensation time. Set range is 0.0 to 99.9 sec.
MODE
PEt.t — Set monitoring delay time within 00 to 30 sec.
MODE
dI S.t — Execute variable set display period by 0.1 sec. within 0.1 to 5.0 sec.
MODE
CoL.r — Select color with 5 modes. red↔Grn↔YEL↔r-G↔G-r ↔ red, Grn, YEL: Display with 1 color. r-G: Color is changed when red 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'.
MODE
zEro — Enable zero adjustment by front key operation to select YE5. Press both ≪△ keys simultaneously in 3 sec. The deviation value is saved in Inb.L automatically.
MODE
Eu.In — Select between hold input by terminal 11, 12 and zero set by external signal. •Hold: Hold display value •zEro: Zero adjustment by external signal
MODE
F5-H — Set High−limit value, 20mADC output position of PV output. ※When input range and prescale mode are changed, the set value of F5-H and F5-L is change automatically as max. input range.
MODE
F5-L — Set Low−limit value, 4mADC output position of PV output.
MODE
Rdr.5 — Set address of RS485 communication within 01 to 99.
MODE
bP5 — Set baud rate of RS485 communication within 9600↔4800↔2400↔1200.
MODE
PrtY — Set parity bit. Set range: None / Even / Odd
MODE
5tP — Set stop bit. Set range: 1/2
MODE
r5.t — Set response waiting time. Set range: 5 to 99
MODE
LoC — Enable Lock function with 4 mode.

oFF: Disable Lock function | LoC2: Lock parameter 1,2
LoC1: Lock parameter 1 | LoC3: Lock parameter 0,1,2

■ Measuring AC frequency function [PA 1: dI SP mode]

It measures input signal frequency when it is an AC input using fixed decimal point[PA1: dot mode]. Measuring range can be changed by setting and measuring range of decimal point position is as below chart. It is available to adjust upper gradient in [PA 1: Inb.H mode] and [PA 1: Inb.E mode], in order to measure frequency normally, input signal, over 10% F.S. of measuring range, should be supplied. Please wire the proper measuring terminal.
①Measuring range

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

• 0.100 to 5000Hz: Display accuracy error within ±0.3%F.S.±2Digit
• 5000 to 9999Hz: Display accuracy error within ±1%F.S.±3Digit
② Inb.H: 0.100 to 9.999 (Gradient adjustment of high value)
③ Inb.E: 10-2, 10-1, 100, 101 (Index adjustment of Inb.H)

■ Caution for using

1. Allowable installation environment
   ①It shall be used indoor ②Altitude Max. 2,000m ③Pollution Degree 3 ④Installation Category II
2. Use compression terminal(M3, Max. 6.0mm) to connect AC power.
3. Separate from high−tension line, power line to avoid inductive noise.
4. Install power switch or circuit breaker to on / off the power at once.
5. The switch or circuit breaker should be installed nearby users for easily.
6. Avoid to use the unit nearby machinery which causes any surge, such as high frequency welder / sewing machine and high capacity SCR controller etc.
7. "HHHH" or "LLLL" is displayed, off the power and check lines.
8. Noise inflowing from power line can cause serious problem for D.P.M. (Digital Panel Meter) of AC power. It is hard to install protection circuit in the small unit even there is condenser to avoid noise between lines at primary of power transformer. Use noise absorber circuit such as line filter, varistor at external lines when abnormal voltage is occured by power relay, magnet switch, high frequency equipment are operated in same lines.
9. Input line: Use shield wire when measured input line is extended or in a place with noise and open the non−used terminals.
※ It may cause malfunction if above instructions are not followed.

• Using line filter: Install it closely from DPM
• Using varistor
• Using double shield wire
• Using Single shield wire

■ Main products

- Proximity sensors
- Area sensors
- Photoelectric sensors
- Fiber optic sensors
- Door/Door side sensors
- Rotary encoders
- Connectors/Connector cables/Sensor distribution boxes/Sockets
- Temperature controllers
- Temperature/Humidity transducers
- SSRs/Power controllers
- Counters
- Timers
- Display units
- Panel meters
- Pressure sensors
- Power controllers
- Graphic/Logic panels
- Field network devices
- Stepping motors/drivers/motion controllers
- Laser marking system(CO₂, Nd:YAG)
- Laser welding/soldering system

Autonics Corporation
http://www.autonics.com
Satisfiable Partner For Factory Automation
■ HEAD QUARTERS
41-5, Yongdang-dong, Yangsan-si, Gyeongnam, 626-847, Korea
■ OVERSEAS SALES :
1. Bldg. 402 3rd FL., Bucheon Techno Park, 193, Yakdae-dong, Wonmi-gu, Bucheon-si, Gyeonggi-do, 420-734, Korea
   TEL : 82-32-610-2730 / FAX : 82-32-329-0728
   E-mail : sales@autonics.com

The proposal of a product improvement and development :product@autonics.com

EP-KE-77-0012G

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Autonics *manufacturer:*

Other Similar products are found below :

BJ1M-DDT-C-P CT6M-2P4 LP-S070-T9D6-C5T PRCM30-15AC PRDCM18-14DN PRDCM30-15DN PRDCML18-14DN PRFT30-10DO-V PRFWT12-2DO-IV PRFWT30-10DO-IV TK4N-14RC BC15-LDT-C-P E50S8-5000-3-T-24 PRD12-8DN PRCM12-2DP SR3-1440R TMHA-42AE TMHE-82RE BJP100-BDT-P BJR1M-DDT-P-F PRFAT12-2DO-V PRFAWT12-2DO-IV PT8-S3DP5 SRH3-4230 SRH3-4415 SRH3-4430 SRH3-4475 TF33-31H-R CLD2-5 E40H10-250-3-T-24 E40H8-1024-3-T-24 E50S8-100-3-T-24 PRW08-2DP AT8PSN-6 100/120VAC TZ4ST-24R E50S8-1000-3-T-24 BJ3M-PDT-C-P BJN100-NDT-P E40HB8-100-3-T-24 PRDCM12-4DN PRDCM18-7DN PRDCM30-25DN PRDCML12-8DN PRDCML18-7DP PRDCML30-25DN SR1-1250 SR1-1440R SR1-4425 SR3-2430 SR3-2450