

NE6000 Series
(Isolated Slim Type Converter)



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<http://www.newins.co.kr>

※ Be sure to observe following warning / cautions and those provided in the text. In order to secure safety in handing the instrument.

⚠ WARNING

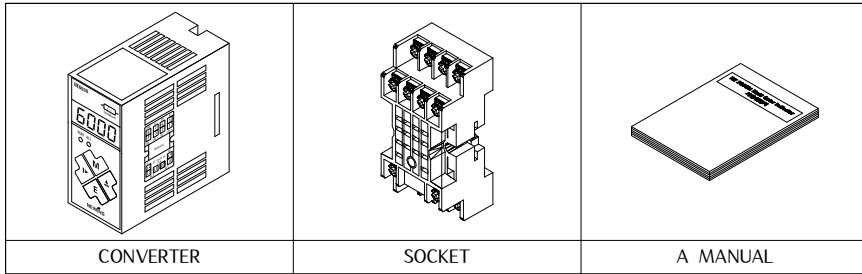
- General** ▶ In order to prevent electric shock, be sure to disconnected this instrument from the main power source when wiring.
- Protective Grounding** ▶ In order to prevent electric shock ; be sure to provided protective grounding prior to turning on this instrument.
Do not cut a protective grounding conductor disconnected protective grounding.
- Power Source** ▶ Make sure that the supply voltage for this instrument conforms to the voltage source.
▶ Attach protective cover prior to turning on this instrument.
- Fuse** ▶ In order to prevent a fire, use only our specified fuse.
▶ Don't short-circuit a fuse.
- Working Environment** ▶ Do not operate this instrument in the environment where it is exposed to a combustible, explosive, corrosive gas or water, steam.
- Input and Output wiring** ▶ Provide input and output wiring after turning off the power.
- ⚠ CAUTION**
- Inside of instrument** ▶ Do not disassemble the inside of the instrument.
▶ Prevent inflow of dust, water, oil and wiring dregs in to the instrument.
- Input and Output wiring** ▶ Do not use empty terminals for other purposes such as relaying, etc.
▶ Wire correctly after checking the polarity and purpose of the terminal.
▶ When wiring the instrument, separate from high voltage cables, power lines, and motor lines to prevent inductive noise.
- Transportation** ▶ When transporting this instrument or the equipment with this instrument incorporated in it, take measures to prevent opening the door and falling out the inner module.

⚠ NOTE

- Instruction manual**
- ▶ Deliver this instruction manual to an end user.
 - ▶ prior to handing the instrument be sure to read this manual.
 - ▶ If you have any question on this manual or fine any errors omissions in this manual, contact our sales representative
 - ▶ After reading this manual, keep it carefully by the instrument.
 - ▶ When the manual, is lost or stained, contact our sales representative.
 - ▶ It is prohibited to copy or reproduce this manual without our permission.
- Checking the accessories** ▶ Upon delivery instrument, unpack and check its accessories and appearance. if there are missing accessories or damage on the appearance contact our dealer where you purchased the instrument or our sales representative.
- Installation** ▶ When installing this instrument, put on a protective gear such as safety shoes, helmet, etc. for your safety.
- Maintenance** ▶ Only our serviceman or persons authorized by NEWINS are allowed to remove and take the inner module, the main unit and printed circuit boards apart.
- Disposal**
- ▶ Disposed the used products in a correct way.
 - ▶ Do not incinerate plastics of maintenance parts and replacement parts. A harmful gas mat be produced.
 - ▶ To disposed of this instrument, consign to the special agent as an industrial waste.
- Cleaning**
- ▶ Use dry cloth to clean the surface of this instrument
 - ▶ Do not use any organic solvent.
 - ▶ Cleaning the instrument after turning off the power.
- Revisions** ▶ This instruction manual is subject to change without prior notice.
- Evasion of responsibility guarantee** ▶ Be sure to observe the caution in operating, maintaining, and repairing this instrument. We will not be responsible for or guarantee the damage resulting from negligence of them.

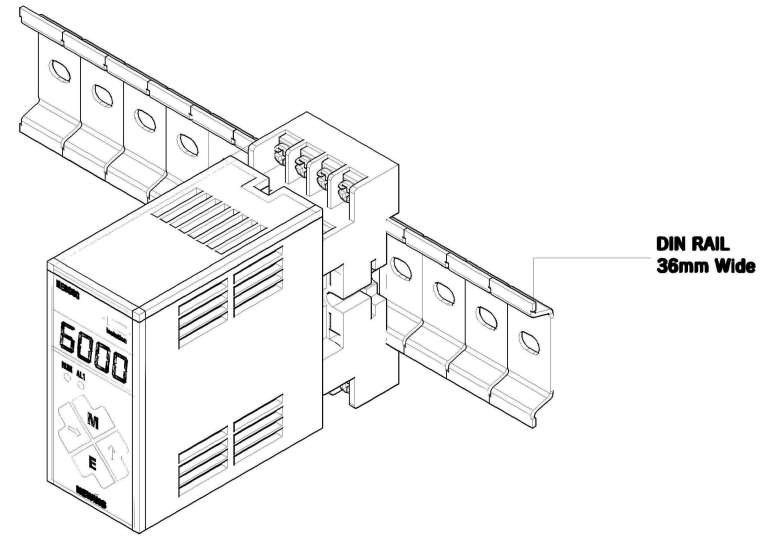
1. Checking the Accessory

when you received, please check the Insufficient accessories and defective products shape.
If the lack of parts, please contact the company.

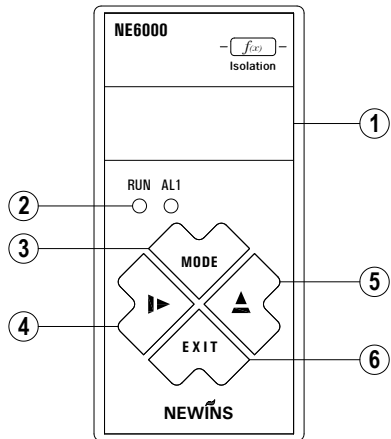




3. Installation

1. 1, Din Rail

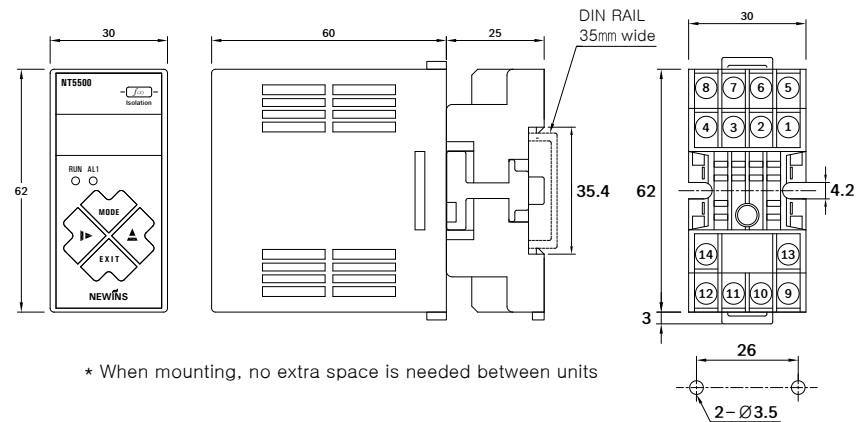


2. Part Name



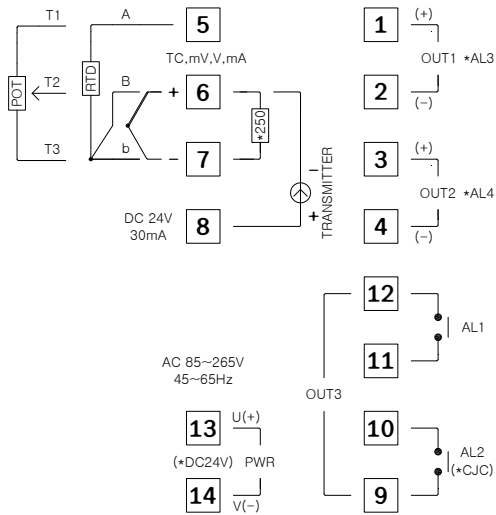
- ① Measured value display
- ② Alarm condition display
- ③ **MODE** KEY : Memorize the setting data and change the operation menu.
- ④  KEY : Into the data setting mode and collect the changed location.
- ⑤  KEY : Change the data value.
- ⑥ **EXIT** KEY : Out of mode.

2. Outside dimension and Panel cutting size



4. Terminal Diagram

1. Terminal wiring



*NOTE

- 1.mA Input (+,-)Needs 250 OHM 0.05% 25ppm Resistance
- 2.*TC-TYPE CJC ONLY(AL2 NONE)

2. A power source wiring

⚠ Caution

1. For an electric shock prevention to turn on electricity to the machinery and tools which after one sees a protective ground connection surely.
2. To the electric wire terminal to use the insulation sleeve compression terminal.
3. The device's power supply voltage to match the voltage of the power is in check.
4. For the protection of life to turn on an electric current to the instrument after attaching the cover.

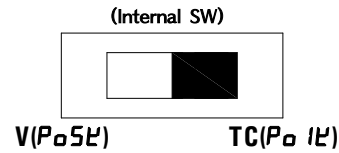
⚠ Attention

1. To all the member front line 600V vinyl insulation front lines (JIS C3307), or to use the front line of above considerable width.
2. To the protective ground terminal to connect above of 3rd type(to connect below earth resistance 100Ω and smallest size 1.6mm).
3. Other protection devices and grounding, the grounding in public may be affected by noise. Accordingly the public are advised not to other devices.

5. Features

- ▶ Multi-range input T/C, RTD, Volt, mA, Etc (Pot, Pulse, Multi Function)
- ▶ High accuracy 16bit A/D converter
- ▶ Peak hold function (Highest & Lowest)
- ▶ 2points alarm & Dead band set
- ▶ Isolation current output (DC 4.00~20.00mA) & Output scaling
- ▶ Free Voltage (AC 85~265V, 45~65Hz)
- ▶ Display (PV) off function
- ▶ RS-485 Communication interface
- ▶ Burnout function
- ▶ Display input error PV

※Switch input



*V : 10V, $\bar{n}R$, P05%

*TC : b, r, S-%, E, J, E, $\bar{n}u$, i_u , d-P%, J-P%, P01%

6. Specification

1. Input type *

Sensor Type	Range	Scale	Symbol	
TC	B(PR)	0~1800℃	-	$t[-b]$
	R(PR)	0~1750℃	-	$t[-r]$
	S(PR)	0~1750℃	-	$t[-S]$
	K(CA)	-200~1350℃	-	$t[-\%]$
	E(CRC)	-199.9~700.0℃	-	$t[-E]$
	J(IC)	-199.9~800.0℃	-	$t[-J]$
Volt	T(CC)	-199.9~400.0℃	-	$t[-t]$
	mV	-50.0~50.0mV	-1999~9999	$\bar{n}u$
	Volt	-1.000~1.000V	-1999~9999	i_u
mA	Volt	-10.0~10.0V	-1999~9999	$i\bar{u}$
PT	mA	4.00~20.00mA	-1999~9999	$\bar{n}R$
	Pt100Ω	-199.9~800.0℃	-	d-P%
POT	JPt100Ω	-199.9~500.0℃	-	J-P%
	Potention meter 1k	0~1KΩ(2KΩ)	-1999~9999	P01%
	Potention meter 5k	0~5KΩ(10KΩ)	-1999~9999	P05%

* mA input needs 250Ω(±0.1% 25ppm) resistance spiral on outside

2. Measuring and display cycle : 200ms(mV, Volt, mA type), 400ms (TC, RTD type)
3. Input resistance : Volt-400k Ω
: Others type-1M Ω
4. Signal source resistance : Pt 100 Ω type-30 Ω /line
: Others type-300 Ω /line
5. CMRR(Common Mode Rejection Ratio) : 140dB or more
6. NMRR(Normal Mode Rejection Ratio) : 60dB or more
7. Moving average filter
8. Built-in sensor power source : DC 24V 30mA \pm 0.5%
9. Accuracy : \pm 0.2% FS
10. Isolation voltage output (Option)
Voltage : DC 0~10V
Minimum load resistance : 1k Ω
Isolation resistance(Input-Output) : 100M Ω or more (DC500V)
11. Alarm output(Alarm setter)
 - ▶ Contact output type : Normal open, Normal close
 - ▶ Max, switching power : 60W, 125VA
 - ▶ Max, switching current : DC 2A, AC
 - ▶ Max, switching voltage : DC 220V, AC 250V
 - ▶ Max, carrying current : DC 3A, AC
12. Ambient temperature & Humidity
 - ▶ Operation : -20~60 $^{\circ}$ C, 10~90%
 - ▶ Storage : -20~70 $^{\circ}$ C, 10~90%
13. Power supply
 - ▶ Voltage : AC 85~265V(45~65Hz) DC 24V(Option)
 - ▶ Isolation resistance : 100M Ω , DC 500V
 - ▶ Power consumption : Max 4VA
 - ▶ Isolation(FG-INPUT, FG-POWER, POWER-INPUT, INPUT-OUTPUT)
14. Etc
 - ▶ Weight : 200g
 - ▶ Mounting : Din rail & wall mounted
 - ▶ Dimension : 30(W) \times 62(H) \times 60(D)mm

7. Major Functions

▶ Time function

Time : When set to ON, FND disappears after 30 minutes and the LED flashes.

▶ Error message display function

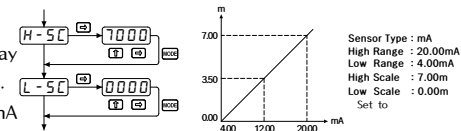
- HHoU** High Range over
- LLoU** Low Range over
- ErA1** RTD "A" open
- ErB2** RTD "B" open, TC input open
- ErB3** RTD "b" open
- ErE** CJC error

▶ Display scaling function

(mV, Volt, mA only)

This function changes and sets the display value according to scale and input range.

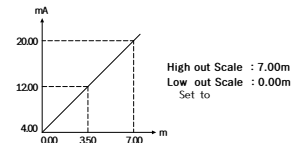
Ex) In case of input range 4.00~20.00mA and Level 0.00~7.00m



▶ Output scaling function

This function can change the the 4.00~20.00mA value as the output scale.

Ex) In case of display value 0.00~7.00m, Output 4.00~20.00mA



▶ Function (mV, Volt, mA type only)

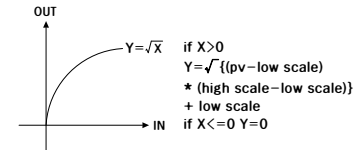
Lin

Pass the input as it is. Used for general input type and linearity input.

root

Pass the input after $\sqrt{\quad}$.

Used for flow rate by orifice.



Lmt

Like level measuring, when it does not display measuring under zero,

It always can display zero by using limit function.

▶ Filter

The number of filters can be selected from 10 to 70.

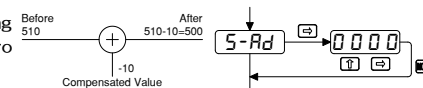
The filter shows the average value of the data excluding the value of max / min among the data received the selected number of inputs.

▶ Sensor compensation function

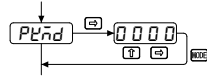
The function is useful for compensating error by long sensor line or changed zero point by aged sensor.

Before sensor adjust = 510 $^{\circ}$ C

After sensor adjust = measured value - compensated value = 510 - 10 = 500 $^{\circ}$ C



▶ Peak hold function



Peak mode : 0 (high peak mode)

Remember the highest input value and display the highest value when pressing the key.

Peak mode : 1 (low peak mode)

Remember the lowest input value and display the lowest value when pressing the key.

Peak mode : 2 (high peak and display mode)

Remember the highest input value, display the highest value in ordinary times, and output the highest transmit output.

Peak mode : 3 (low peak and display mode)

Remember the lowest input value, display the lowest value in ordinary times, and output the lowest transmit output.

▶ Analog output function

If the input sensor is not connected, the analog output is output with the selected maximum value / minimum value.

Maximum: 20.0 mA, Minimum: 4.00 mA

▶ ALARM function

Alarms of the desired shape can be set individually.

Ex) AL - 1: High limit alarm, AL - 1 value: 500.0 ° C

AL - 2: Low limit alarm AL - 2 value: 100.0 ° C

AL - 3: Intermediate alarm AL - 3 value: 500.0

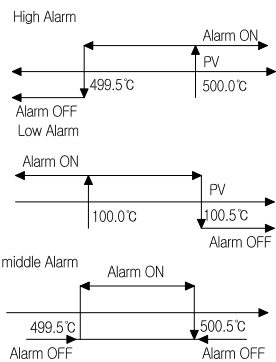
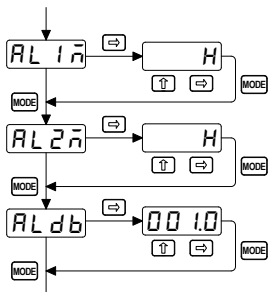
ALARM DEAD BAND: When set to 0.5,

The upper limit alarm (AL - 1) turns ON when the measured value (PV) is 500.0 ° C or more, and turns OFF when it is 499.5 ° C or less.

The lower limit alarm (AL - 2) turns ON when the measured value (PV) is 100.0 ° C or less, and turns OFF when it exceeds 100.5 ° C

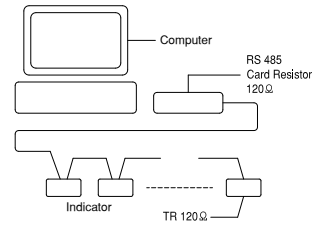
The intermediate alarm (AL - 3) turns ON when the measured value (PV) is 499.5 ° C or higher and 500.5 ° C or lower, less than 499.5 ° C and 500.5 ° C

It turns OFF when it is excessive.



▶ Communication interface

It is possible to communicate with computer and to monitor remote by using RS-485 communication interface.



▲ CAUTION Initialization of the data (All Reset)

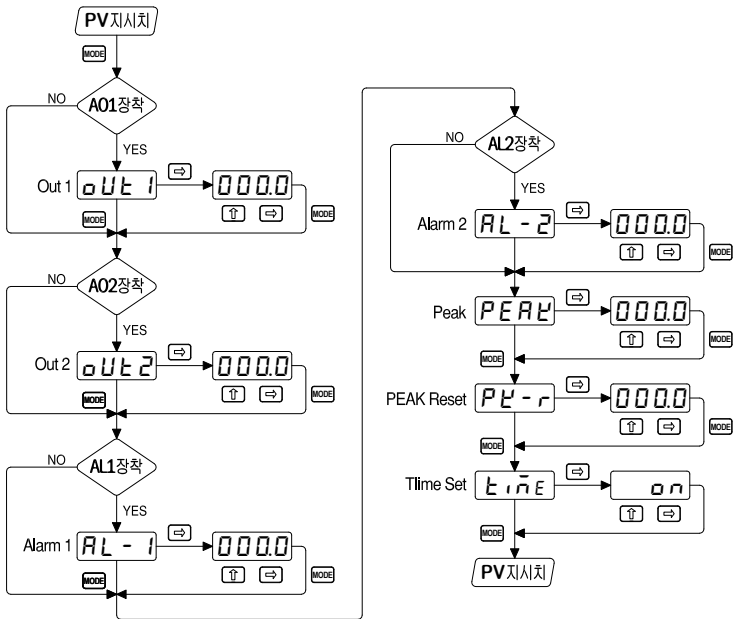
It is All reset when ship the goods from factory. If you want initialize all parameter, please reset the instrument. Push the **MODE** KEY and **EXIT** KEY at the same time and ON the power. It is initialized and operation by new setting value.

▶ Initial setting value is,
 Sensor type(TC-K), Alarm1(1,350), Alarm2(1,350), Dead band(3), Sensor(0),
 Peak mode(0), Function(Lin), High output scale(1,350), Low output scale(-200),
 Alarm type1(H), Alarm type2(H)

- Usually user may setting the Alarm value and confirming the Peak value during operation.
- The peak value must not erased at least 10years.
 Because it stored in the semipermanent EP-ROM.
- The Alarm mode (High, Low) is operated setting value which set in the setting mode.

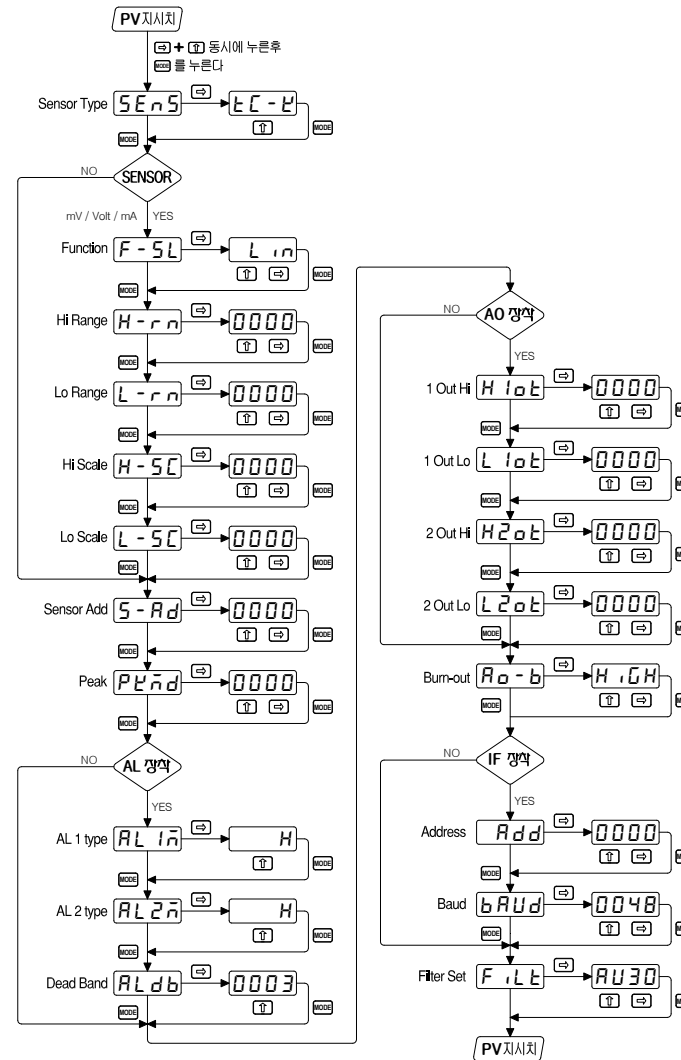
1. Operation Mode

- Make flickering the wanted place by **⇐⇒** and setting the value for data setting.
- Push the **↑**, the figure repeat to 0,1,2... 9,0
 and the best position repeat to 0,1,2...9,-,-,1,0. If you want to output the mode,
- push the **EXIT** then will go out into the PV value Mode.



2. Setting Mode

- Change the setting **⇐⇒** **↑** push at the same time to move setting mode.
- Move to display mode in every mode push the **EXIT**
- DATA setting method
 - ① Setting the decimal point by **↑**
 - ② Flickering the purpose digit by **⇐⇒**
 - ③ Selecting the data by **↑**
 - ④ Setting data by pushing the "mode"
 - ⑤ Decimal point can set only the input range high or input scale high mode.



9. Ordering Code

NE60		-	Description
Analog output	00		DC 4.00 ~ 20.00mA
	01		DC 4.00 ~ 20.00mA (2 Output)
	02		DC 1 ~ 5 V
	03		DC 1 ~ 5 V (2 Output)
	04		DC 0 ~ 10 V
	05		DC 0 ~ 10 V (2 Output)
	06		DC 4.00 ~ 20.00mA + 1 Alarm
	07		DC 1 ~ 5 V + 1 Alarm
	08		DC 4.00 ~ 20.00mA + RS 485(RTU)
	09		DC 1 ~ 5 V + RS 485(RTU)
	10		DC 4.00 ~ 20.00mA + 1 Alarm + RS485(RTU)
	11		DC 1 ~ 5 V + 1 Alarm + RS 485(RTU)
12		Etc	
Power		0	AC 85 ~ 265V(45 ~ 65Hz)
		1	DC 12 ~ 32V
		2	Etc