NT 5400T Series

2-Wire Temperatature Transmitter

http://www.newins.co.kr

contents

※ 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.

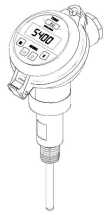
Cleaning
- Use dry cloth to clean the surface of this instrument
- Do not use any organic solvent.
- Cleaning the instrument after turning off the power.

Revisions
- This instruction manual is subject to change without prior notice.

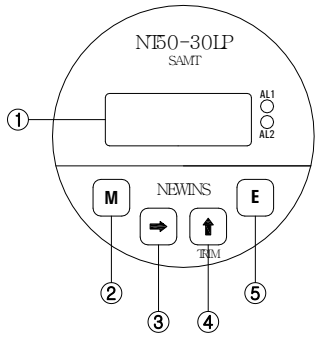
Evasion of responsibility guarantee
- Be sure to observe the caution in operating, maintaining, and repairing this instrument. We will not be responsible for or guarantee the damage resulting from negligence of them.

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.

	
Transmitter	A MANUAL

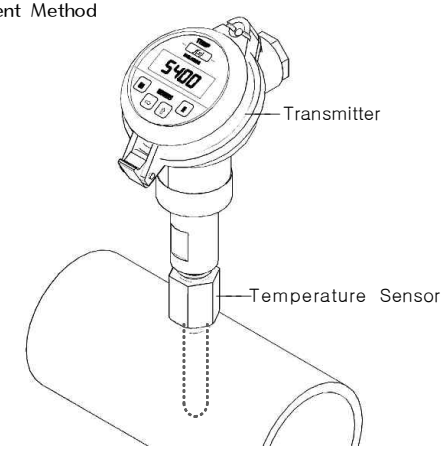
2. Part Name



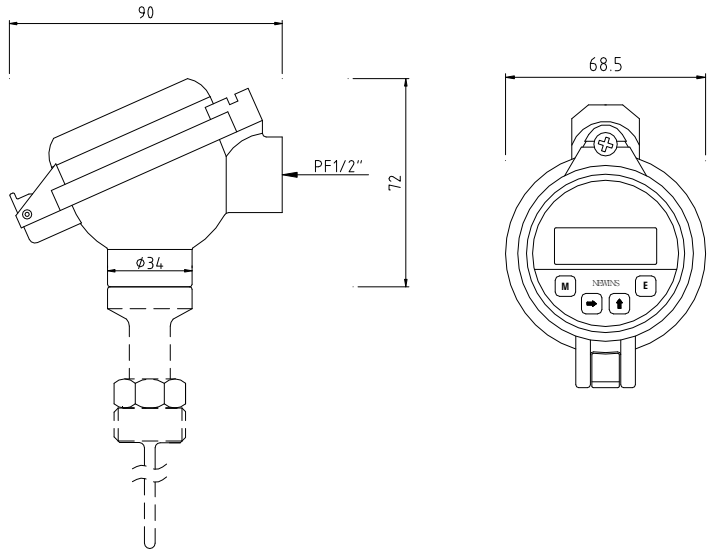
① Measured value display
② MODE KEY
Storage the set data and change the operation menu
③ ⇨ KEY
Enter into the data setting mode and modify the changed location
④ ⇧ KEY
Change the data value
⑤ EXIT KEY
Out of mode

3. Installation

1. Establishment Method



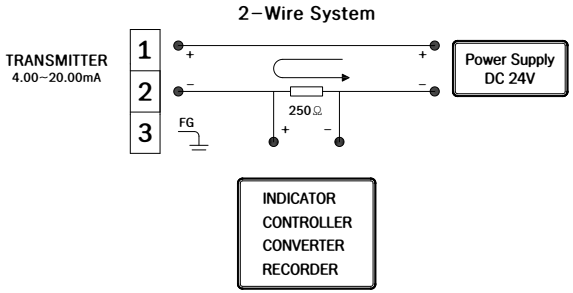
2. Dimension



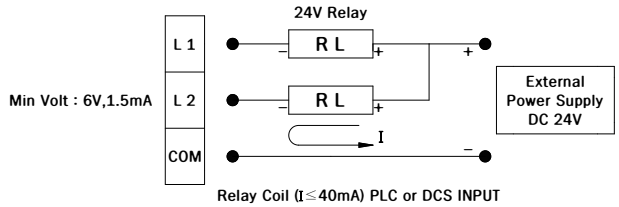
4. Terminal Diagram

1. Terminal wiring

1.1. 2-Wire



1.2. Loop-Powered Switch



※ Loop-Powered Switch Type is basically composed of LCD Display

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 1.6㎜).
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

- Sharpness is excellent using FND Display.
- High reliability is achieved by using A / D Converter with high performance and high accuracy.
- You can select the number of moving average filters, which can be used for both fast response and slow response.
- Multi inputs can receive various signals.
- Various Function functions are built in and it can be used for multiple purposes.
- 2-Wire Loop-Power is easy to use for construction and maintenance.
- The display cycle can be extended with Sampling Time setting.(Battery Type)

6. General Specification

1. Input Type

Sensor Type		Range	Scale	Symbol	Etc
TC	B(PR 30%)	0 ~ 1800℃	-	tC-b	STD
	R(PR 13%)	0 ~ 1750℃	-	tC-r	
	S(PR 10%)	0 ~ 1750℃	-	tC-S	
	K(CA)	-200 ~ 1350℃	-	tC-K	
	E(CRC)	-200.0 ~ 700.0℃	-	tC-E	
	J(IC)	-199.9 ~ 800.0℃	-	tC-J	
	T(CC)	-199.9 ~ 400.0℃	-	tC-t	
	N	0 ~ 1300.0℃	-	tC-n	
mV	mV	-100.0 ~ 100.0mV	-1999 ~ 9999	mV	
PT	PT100Ω	-200 ~ 630℃	-	d-Pt1	
		-199.9 ~ 630.0℃		d-Pt2	
	JPT100Ω	-199.9 ~ 800.0℃	-	J-Pt	
Volt	Volt	-10.0 ~ 10.0V	-1999 ~ 9999	U	OPTION
mA	mA	4.00 ~ 20.00mA	-1999 ~ 9999	mA	

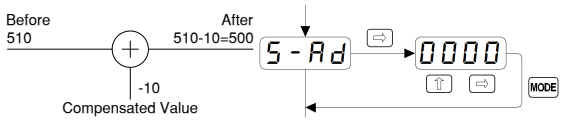
* It need the external 250Ω/±0.1% 25ppm resistance to use mA input type

- Minimum measurement range
  TC : K , E, J, T : 50℃ or 2mV, R, S, B : 200℃
  mV : 4mV
  RTD : 20℃ or 4.0Ω,
- Measurement display interval : 400ms
- Input resistance : Volt (T/C) 400kΩ,
  : Other type 1MΩ
- Signal source resistance : PT100Ω..30Ω/Line,
  :Volt (T/C) 300Ω/Line
- CMRR(Common Mode Rejection Ratio) : 140dB or more
- NMRR(Normal Mode Rejection Ratio) : 60dB or more
- Moving average filter : Selectable(1 ~ 99)
- Accuracy : ±0.25% FS
- Output : 2wire DC4.0 ~ 20.0mA
  Low limit : 2.50mA
  Upper limit : 22.00mA
- Power : DC 9 ~ 35V, Load limit (vsp9V) / 0.021=RΩ
- Operating condition
  Operating Temp/Humidity : -30 ~ 70℃, 10 ~ 90%
  Storage Temp/Humidity : -30 ~ 70℃, 10 ~ 90%
- etc
  Weight : 200g
  Body material : Aluminum (ALDC, 8S)
  Degree of protection : IP-67
  Process Connection : PT 1/2

7. Major Function

1. Unit function(Unit)
   - Set the unit user.
   - When using TC and RTD, set it in ° C and ° F.
     (mV, V, mA When you use User sets the unit.)

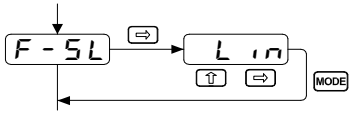
2. Sensor compensation function(S-Ad)
   - The function is useful for compensating error by long sensor line or changed zero point by aged sensor.
   ex) Before sensor adjust = 510℃
   After sensor adjust = measured value + compensated value = 510 - 10 = 500℃



3. Burn-Out function(bUrn)
   - This function selects the output current when the input sensor is open.(Range 20% indication)
   - Burn-Out : Burn-Out : Hi (b-Hi) Select.
     Output current is high(22.00mA) when input sensor is open.
   - Burn-Out : Low (b-Lo) Select.
     when the current output reaches (Range 20%).

When the input sensor opens, the output current is output as Low (2.5mA)

4. Function (mV,V,mA only)(FUnC)



L in

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

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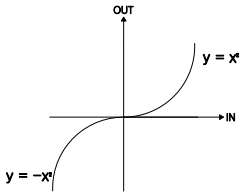
S-rt

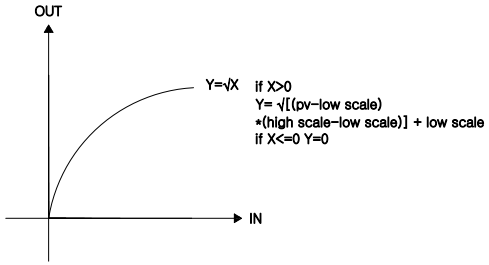
It is used to convert the flow rate value to pressure.



rot

Pass the input after √.

Used for flow rate by orifice.



5. Filter function(FiLt)

- This function is moving average filter.

0001 ~ 0099

It displays in recent input No 1~99 sample average.

Do not use filter when high speed response is needed.

When output and display value are changed by irregular input, it is possible to get regular input and display value by using filter function.

6. Alarm function(AL-n)

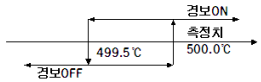
Alarm type : High, Low

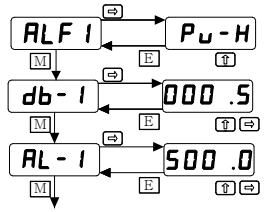
There are two ALARMs that can be individually set, and contact output and Loop-Power method are also possible.

ex) 1.AL-1 High alarm (H): 500 ℃

dB-1 band : 0.5℃

High-Alarm

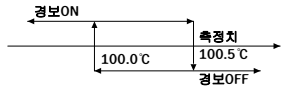




2.AL-2 Low alarm(L):100.0℃

dB-2 band : 0.5℃

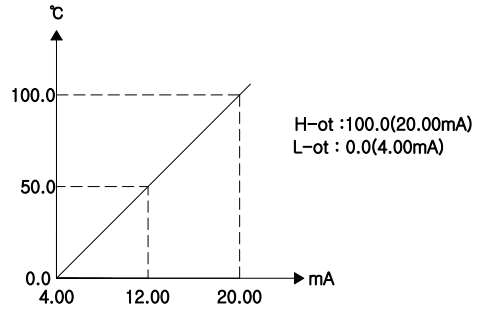
Low-Alarm



7. Output scaling function Ao-n

-This function is used when you want to set the pressure Range to any user and use it.

ex) When trying to use PT 100 Ω - 200.0 to 600.0 at 0.0 to 100.0 ° C



8. Operation and Setting Mode

⚠ 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), Unit(℃), SAd(0), burn(Hi), Fipt(8)
- ALARM

  AL1(PV-H), db-1(0.1), AL1(9999), AL2(PV-H), db-1(0.1), AL2(9999)
- Current output

  Hi : 1350℃, Low Scale : -200℃ Scale

-It is MODE that purchases a machine and sets it according to the purpose of use by the user. This machine has three MODE
It is composed.

Setting Mode

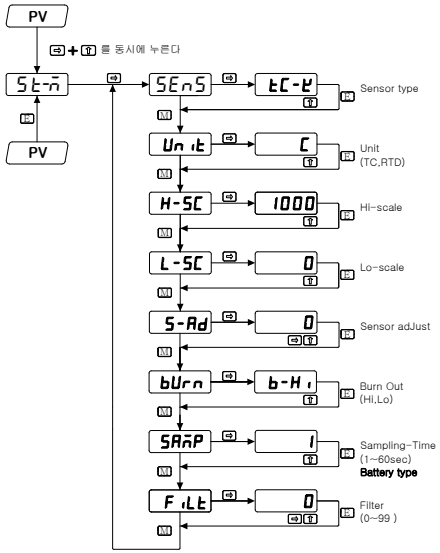
-Change the setting [⇨] [⇧]push at the same time to move setting mode.

-Press [E]key to save the data and proceed to the previous step.

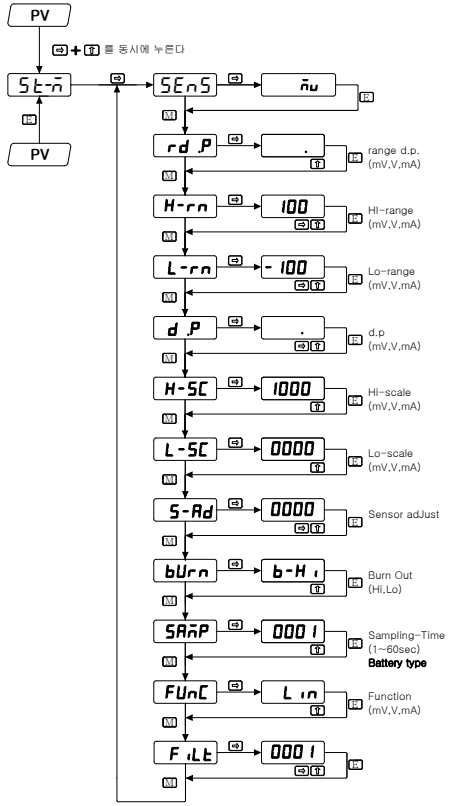
-[⇨]key DIGIT Change (blink)

-[⇧]Key Change the DIGITAL number. (Blinking)

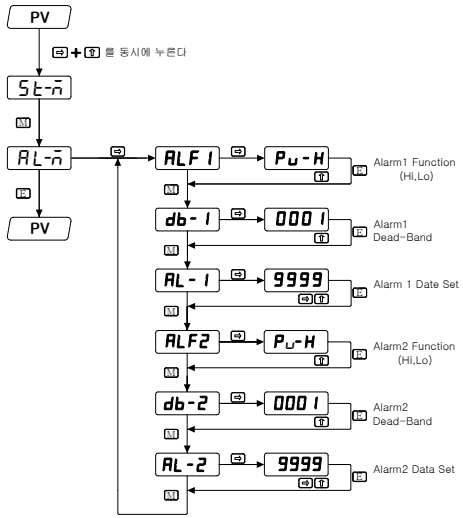
8-1. Input(**tC**, **rtd**) setting method



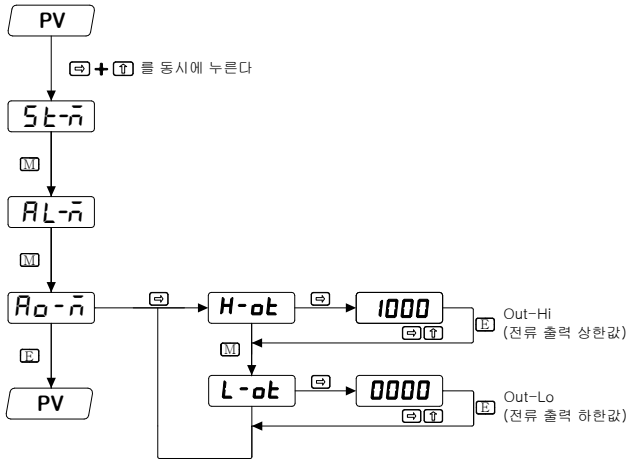
8-2.Input(**nu, u, nA**) setting method



8-3.How to set alarm(Option)



8-4. Transmission output method(**Ao-n**)



BATTERY TYPE

- The specification of this machine is the same as general type excluding Battery.

- Battery specification : AlKALINE 1.5V AAA 2EA
- Battery Battery capacity :About 1100 mAh per piece
- Battery Operating temperature : About -18℃ ~ 55℃
- Battery life span : About 3 years

Sampling Time Setting method

※ Battery life may differ depending on usage environment.

※ Battery Type is basically composed of LCD display.

※ Sampling Time setting ("1" corresponds to 0.5 sec)

9. Ordering Code

NT54			T		Description(Basic)
Input element	B	0			B
	R	0			R
	S	0			S
	K	0			K
	J	0			J
	E	0			E
	T	0			T
	V	1			mV(-100 ~ 100mV)
	V	2			V(-10 ~ 10V)
	A	0			mA(4 ~ 20mA)
	P	1			Pt100Ω
	P	2			JPt100Ω
	Z	0			Others element
Sensor					Consult
Option Type				**B**	Battery Type
				LP	Loop Type
				S	2Alarm Contact

※ Purchase & A/S

* Seoul Office : (Sales Department)
502, DaelimMotors B/D,
535, Gonghang-daero, Gangseo-gu, Seoul, KOREA
Tel : +82-2-2668-2233, Fax : +82-2-2668-5100

* Head Office : (Factory)
301-1101, 3th, Buchen Techno-Park,
397, Seokcheon-ro, Ojeong-gu,
Buchen-city, Gyeonggi-do, KOREA
Tel : +82-32-624-0770, Fax : +82-32-624-0772
http://www.newins.co.kr
E-mail : sales@newins.co.kr