

2선식 온도 전송기

2-WIRE TEMPERATURE TRANSMITTER WITH SENSOR(OPTION)/BATTERY DISPLAY

APPLICATION

- Power engineering.
- Plant construction.
- Process engineering.
- General industrial application.
- Oil and gas.

FEATURES

- Multi-Range input.
- Fault signal for sensor burnout.(High /Low select)
- Selectable moving average filter.
- Built-in multiple function.
- IP-67

SPECIFICATIONS

- ▶ Measuring and displaying interval : 400ms
- ▶ Input resistance :
Volt (T/C) 400k Ω , Other type 1M Ω
- ▶ Signal source resistance :
PT100 Ω ..30 Ω /Line,
Volt (T/C) 300 Ω /Line
- ▶ CMRR(Common Mode Rejection Ratio) :
140dB or more
- ▶ NMRR(Normal Mode Rejection Ratio) :
60dB or more
- ▶ Moving average filter : Selectable(None 4, 8, 16)
- ▶ Accuracy : $\pm 0.25\%$ FS
- ▶ Output :
2wire DC4.0~20.0mA
Low limit : 3.80mA
upper limit : 20.80mA
- ▶ Power supply :
DC 9~35V
Load limit (vsp9V) / 0.021=R Ω
- ▶ Direction strength :
1000VAC 1minute (input to output)
- ▶ Operating condition
Operating Temp/Humidity : -20~60 $^{\circ}$ C, 0~100% RH
Storage Temp/Humidity : -20~70 $^{\circ}$ C, 5~95% RH
- ▶ material (Body, cover): Aluminum (ALDC, 8S)
- ▶ Electronic mire condition : PF1/2"
- ▶ Weight : 200g (body)
- ▶ Degree of protection : IP-67
- ▶ CE conformity
Pressure equipment directive : 2006 / 95 / EC
EMC Directive : 2004 / 108 / EC EN61326-1
emission (group1, classB) and immunity
(industrial locations)



Battery Type
AAA Size : 2EA
About 3 Years

INPUT TYPE

- ▶ Multi range input
Free input selection by code

Sensor Type		Range	Scale	Symbol	Etc
TC	B (PR 30%)	0 ~ 1800 $^{\circ}$ C	-	EE-b	STD
	R (PR 13%)	0 ~ 1750 $^{\circ}$ C	-	EE-r	
	S (PR 10%)	0 ~ 1750 $^{\circ}$ C	-	EE-S	
	K(CA)	-200 ~ 1350 $^{\circ}$ C	-	EE-K	
	E(CRC)	-200.0 ~ 700.0 $^{\circ}$ C	-	EE-E	
	J(IC)	-199.9 ~ 800.0 $^{\circ}$ C	-	EE-J	
	T(CC)	-199.9 ~ 400.0 $^{\circ}$ C	-	EE-T	
	N	0 ~ 1300.0 $^{\circ}$ C	-	EE-n	
mV	mV	-100.0 ~ 100.0mV	-1999 ~ 9999	m	STD
PT	PT100 Ω	-200 ~ 630 $^{\circ}$ C	-	d-Pt1	
		-199.9 ~ 630.0 $^{\circ}$ C	-	d-Pt2	
	JPT100 Ω	-199.9 ~ 800.0 $^{\circ}$ C	-	J-Pt	OPTI ON
Volt	Volt	-10.0 ~ 10.0V	-1999 ~ 9999	v	
mA	mA	4.00 ~ 20.00mA	-1999 ~ 9999	mR	

mA input needs 20 Ω 0.05% 25ppm resistance spiral on outside.

- ▶ Minium measuring span

TC : K , E, J, T : 50 $^{\circ}$ C or 2mV whichever is greater
R, S, B : 200 $^{\circ}$ C
mV : 4mV
RTD : 20 $^{\circ}$ C or 4.0 Ω whichever is greater
sensor current : max 0.3mA

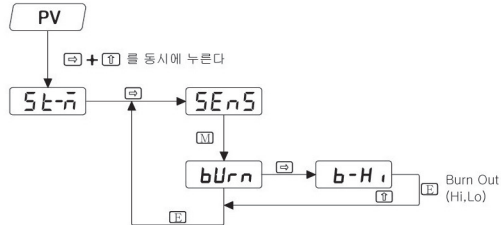
2선식 온도 전송기

2-WIRE TEMPERATURE TRANSMITTER WITH SENSOR(OPTION)/BATTERY DISPLAY

MAJOR FUNCTIONS

▶ Burn-out select function

Sensor burnout when output select function.

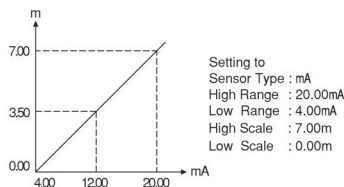


High : 20.80mA keeping
Low : 3.80mA keeping

▶ Display scaling function (mV, Volt, mA only)

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

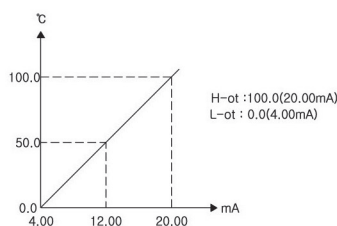
Ex) In case of input range 4.00~20.00mA,
Level 0.00~7.00m



▶ Output scaling function

This function can change 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



▶ Sensor compensation function

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

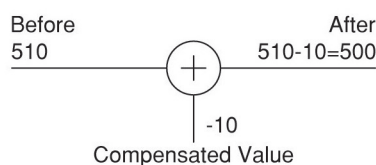
Ex) Before sensor adjust = 510℃

After sensor adjust

= measured value + compensated value

= 510 - 10

= 500℃



▶ Function(mV, Volt, mA type only)

Lin

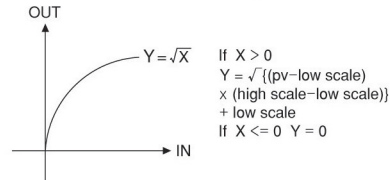
Pass the input as it is.

Used for general input type and linearity input.

rot

Pass the input after $\sqrt{}$.

Used for flow rate by orifice.



▶ Filter function

This function is moving average filter.

0001 ~ 0099

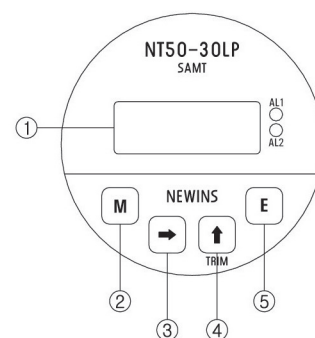
It displays in recent input No 1~99 sample average.

Setting filter function delays response.

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.

PARTS NAME



① Measured value display

② **MODE** : Storage the set data and change the operation menu

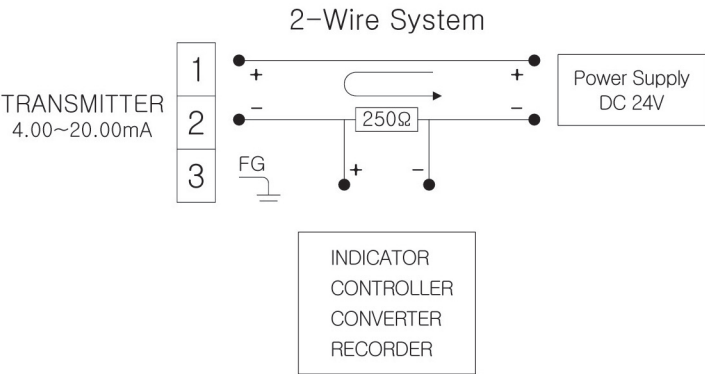
③ **↔** : Enter into the data setting mode and modify the changed location

④ **↑** : Change the data value

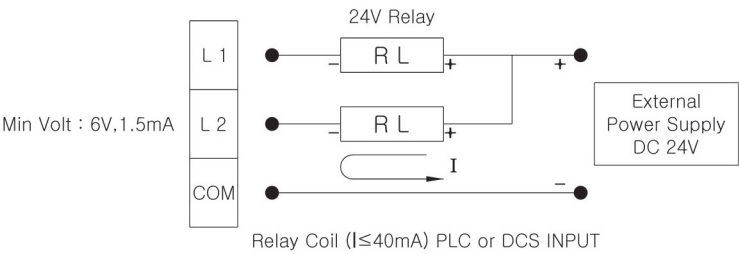
⑤ **EXIT** : Out of mode

TERMINAL DIAGRAM

1. 2-Wire



2. Loop-Powered Switch



ORDERING CODE

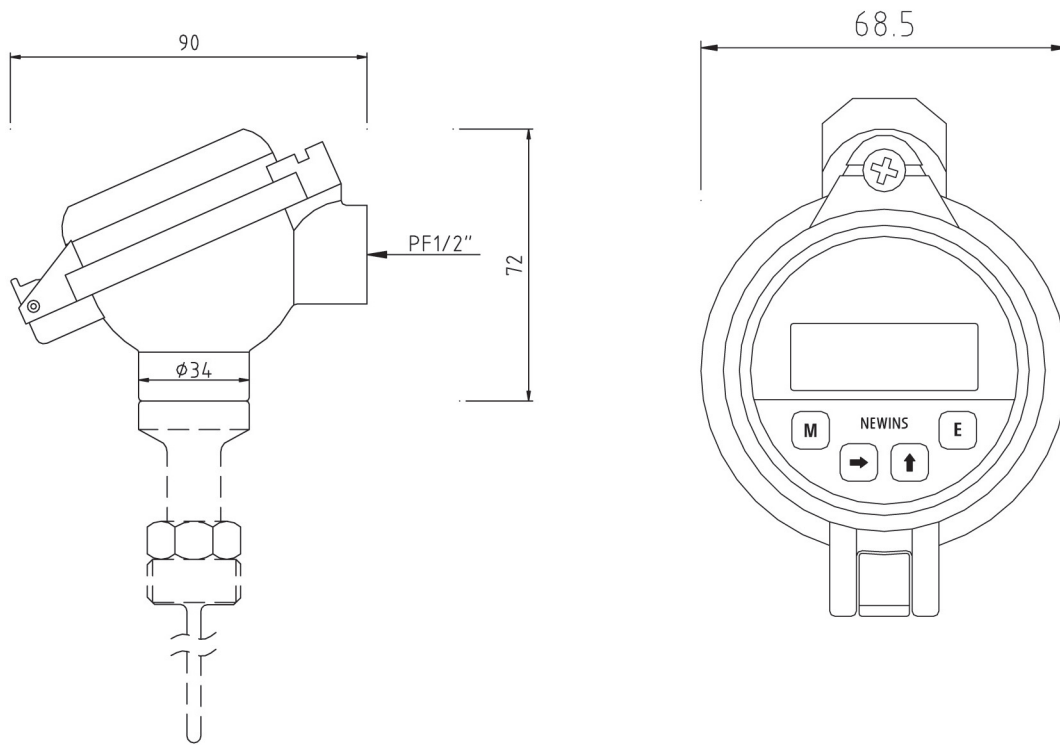
NT54			T		Description(Basic)
Input element	B	0			B
	R	0			R
	S	0			S
	K	0			K
	J	0			J
	E	0			E
	T	0			T
	V	1			mV (-100~100mV)
	V	2			V (-10~10V)
	A	0			mA (4~20mA)
	P	1			Pt100Ω
	P	2			JPt100Ω
	Z	0			Others element
Sensor					Consult
Option Type			B		Battery Type
			LP		Loop Type
			S		2Alarm Contact

2선식 온도 전송기

2-WIRE TEMPERATURE TRANSMITTER WITH SENSOR(OPTION)/BATTERY DISPLAY

DIMENSION

※ Electric connection



Unit:mm

방폭형 2선식 온도 전송기

EXPLOSION PROOF 2-WIRE TEMPERATURE TRANSMITTER WITH SENSOR

FEATURES

- Multi-Range input (TC, RTD, Volt, mV, mA, Etc)
- High accuracy 16bit A/D converter
- Selectable moving average filter
- Built-in multiple function
- DC 4.00~20.00mA 2-wire loop power
- 4 Digit LCD & FND for parameter alteration and PV output on the spot



SPECIFICATIONS

- ▶ Measuring and displaying interval :
200ms(mV, Volt, mA type)
400ms(TC, RTD type)
- ▶ Input resistance : Volt type 400k Ω , Other type 1M Ω
- ▶ Signal source resistance :
PT100 Ω ...30 Ω /Line, Others type 300 Ω /Line
- ▶ CMRR(Common Mode Rejection Ratio) : 140dB or more
- ▶ NMRR(Normal Mode Rejection Ratio) : 60dB or more
- ▶ Moving average filter : Selectable(None 4, 8, 16)
- ▶ Accuracy : $\pm 0.25\%$ FS
- ▶ Power : DC 9~35V
- ▶ Output : 2-wire DC 4.00~20.00mA
load limit($V_{sp9V}/0.022=R_{\Omega}$)
- ▶ Operating condition
Operating Temp/Humidity : -20~60 $^{\circ}\text{C}$, 0~100% RH
Storage Temp/Humidity : -20~70 $^{\circ}\text{C}$, 5~95% RH
- ▶ Body material : SUS 304 (Ex d IIC T6)
- ▶ Degree of protection : IP-65
- ▶ Etc
Weight : 1.5kg
Mounting : Filed Mount

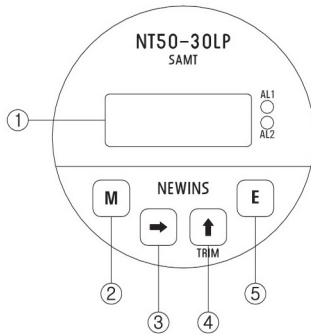
INPUT TYPE

- ▶ Multi range input
 - Free input selection by code

Sensor Type		Range	Scale	Symbol	Etc
TC	B (PR 30%)	0 ~ 1800℃	-	EE-b	STD
	R (PR 13%)	0 ~ 1750℃	-	EE-r	
	S (PR 10%)	0 ~ 1750℃	-	EE-S	
	K(CA)	-200 ~ 1350℃	-	EE-K	
	E(CRC)	-200.0 ~ 700.0℃	-	EE-E	
	J(IC)	-199.9 ~ 800.0℃	-	EE-J	
	T(CC)	-199.9 ~ 400.0℃	-	EE-t	
	N	0 ~ 1300.0℃	-	EE-n	
mV	mV	-100.0 ~ 100.0mV	-1999 ~ 9999	m	OPTION
PT	PT100Ω	-200 ~ 630℃	-	d-PE1	
		-199.9 ~ 630.0℃		d-PE2	
	JPT100Ω	-199.9 ~ 800.0℃	-	J-PE	
Volt	Volt	-10.0 ~ 10.0V	-1999 ~ 9999	v	OPTION
mA	mA	4.00 ~ 20.00mA	-1999 ~ 9999	mA	

* mA input needs 20 Ω 0.05% 25ppm resistance spiral on outside

PARTS NAME



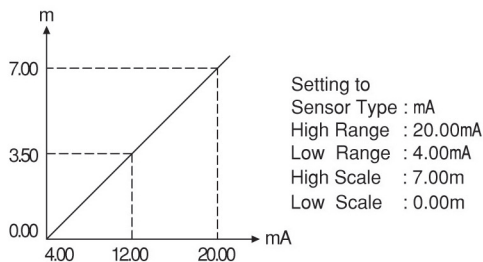
- ① Measured value display
- ② **MODE** Key : Storage the set data and change the operation menu
- ③ **ENTER** Key : Enter into the data setting mode and modify the changed location
- ④ **UP** Key : Change the data value
- ⑤ **EXIT** Key : Out of mode

MAJOR FUNCTIONS

► Display scaling function(mV, Volt, mA only)

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

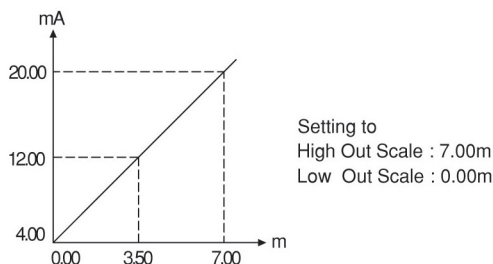
Ex) In case of input range 4.00~20.00mA and Level 0.00~7.00m



► Output scaling function

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

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



► Sensor compensation function

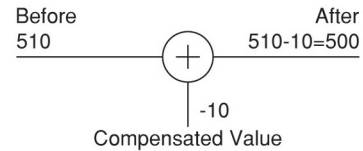
The function is useful for compensating error by long sensor line or changed zero point by aged sensor.

Ex) Before sensor adjust = 510 °C

After sensor adjust

= measured value + compensated value

= 510 - 10 = 500 °C



► Function(mV, Volt, mA type only)

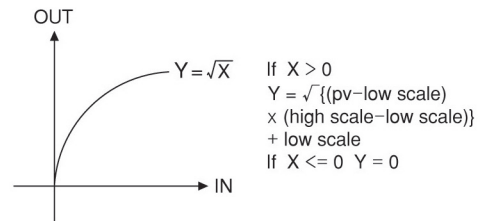
L in

Pass the input as it is.

Used for general input type and linearity input.

rat

Pass the input after $\sqrt{\quad}$. Used for flow rate by orifice.



► Filter function

► Filter

This function is moving average filter.

0001 ~ 0099

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

Setting filter function delays response.

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.

방폭형 2선식 온도 전송기

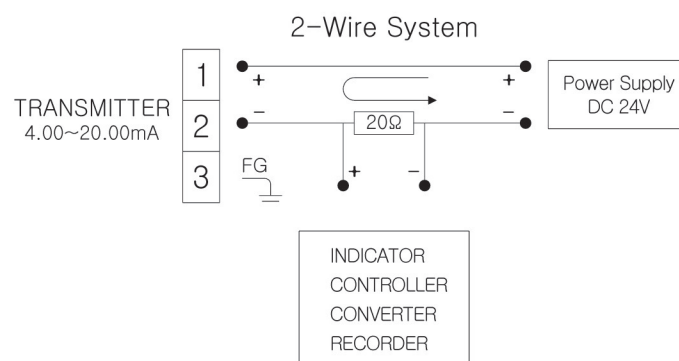
EXPLOSION PROOF 2-WIRE TEMPERATURE TRANSMITTER WITH SENSOR

ORDERING CODE

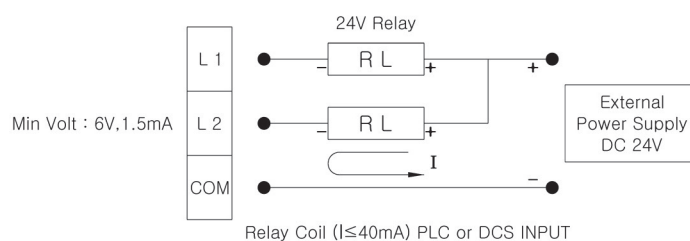
NT 54			E						Description
INDICATOR	1								FND Indicator
	2								LCD Indicator
SENSOR TYPE	B								B-TYPE
	R								R-TYPE
	S								S-TYPE
	K								K-TYPE
	J								J-TYPE
	T								T-TYPE
	E								E-TYPE
	P								Pt100Ω
			E						EX d II C T6
				0					PT(1/2")
				1					PT(3/8")
				2					PT(3/4")
SHEATH OUT DIA				3					OTHER
				1					2.3Ø
				2					3.2Ø
				3					4.8Ø
				4					6.4Ø
				5					8.0Ø
				1					316SS
				2					INCONEL 600
						A~J			100mm~1000mm (100mm간격)
							0		None
OPTION TYPE							1		Loop Type

TERMINAL DIAGRAM

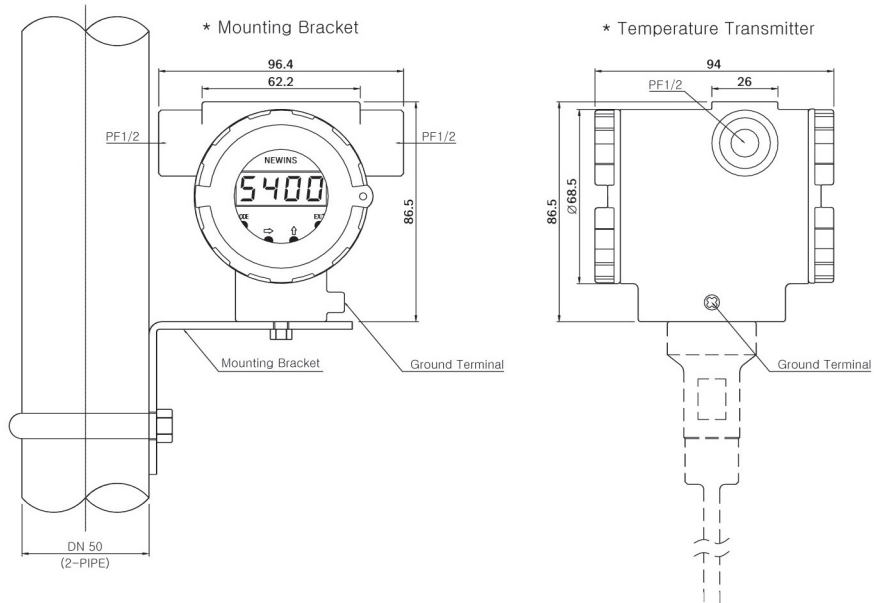
1. 2-Wire



2. Loop-Powered Switch



DIMENSION



2선식 온도 변환기

2-WIRE SMART TRANSMITTER(PANEL MOUNT TYPE)

FEATURES

- Multi-Range input(TC, RTD, Volt, mV, mA, Etc)
- High accuracy 16bit A/D converter
- Selectable moving average filter
- Built-in multiple function
- Isolation current output (2-wire 4.00~20.00mA) & output scaling
- 4 Digit FND for parameter alteration and PV output on the spot



30(W) X 62(H) X 60(D)

SPECIFICATIONS

- Measuring and displaying interval :
200ms(mV, Volt, mA type)
400ms(TC, RTD type)
- Input resistance : Volt type 400k Ω , Other type 1M Ω
- Signal source resistance :
PT100 Ω ...30 Ω /Line, Other type 300 Ω /Line
- CMRR(Common Mode Rejection Ratio) : 140dB or more
- NMRR(Normal Mode Rejection Ratio) : 60dB or more
- Moving average filter : Selectable(None 4, 8, 16)
- Accuracy : $\pm 0.1\%$ FS
- Power : DC 9~35V
- Output : 2-wire DC 4.00~20.00mA
load limit(V_{sp9V})/0.022=R Ω
- Isolation resistance(Input-Output) : 100M Ω or more
(DC 500V)
- Operation condition
Operating Temp/Humidity : -10~60 $^{\circ}$ C, 10~90%
Storage Temp/Humidity : -20~70 $^{\circ}$ C, 5~95%
- Case material : ABS
- Etc
Weight : 180g
Mounting : Rail Mount

INPUT TYPE

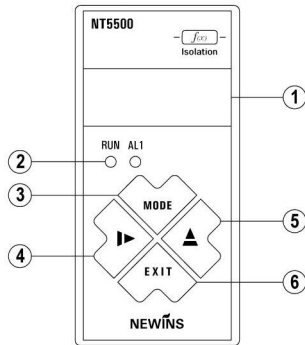
Sensor Type	Range	Scale	Symbol	Etc
TC	B(PR 30%)	0 ~ 1800 $^{\circ}$ C	-	TC-B
	R(PR 13%)	0 ~ 1750 $^{\circ}$ C	-	TC-R
	S(PR 10%)	0 ~ 1750 $^{\circ}$ C	-	TC-S
	K(CA)	-200 ~ 1350 $^{\circ}$ C	-	TC-K
	E(CRC)	-200.0 ~ 700.0 $^{\circ}$ C	-	TC-E
	J(IC)	-199.9 ~ 800.0 $^{\circ}$ C	-	TC-J
	T(CC)	-199.9 ~ 400.0 $^{\circ}$ C	-	TC-T
	N	0 ~ 1300.0 $^{\circ}$ C	-	TC-N
mV	mV	-100.0 ~ 100.0mV	-1999 ~ 9999	MV
PT	PT100 Ω	-200 ~ 630 $^{\circ}$ C	-	D-PT1
		-199.9 ~ 630.0 $^{\circ}$ C	-	D-PT2
	JPT100 Ω	-199.9 ~ 800.0 $^{\circ}$ C	-	J-PT
Volt	Volt	-10.0 ~ 10.0V	-1999 ~ 9999	V
mA	mA	4.00 ~ 20.00mA	-1999 ~ 9999	MA

※ mA input needs 250 Ω ($\pm 0.1\%$ 25PPM) resistance spiral on outside

2선식 온도 변환기

2-WIRE SMART TRANSMITTER(PANEL MOUNT TYPE)

PARTS NAME



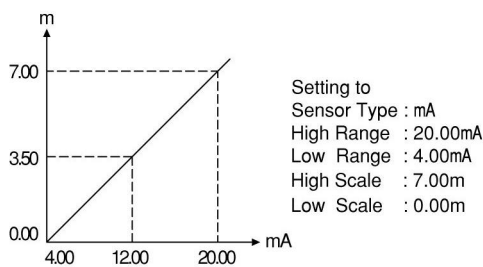
- ① Measured value display
- ② Communication lamp
- ③ **MODE** Key :
Storage the set data and change the operation menu
- ④ **Key** :
Enter into the data setting mode and modify the changed location
- ⑤ **Key** :
Change the data value
- ⑥ **EXIT** Key :
Out of mode

MAJOR FUNCTIONS

▷ Display scaling function(mV, Volt, mA only)

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

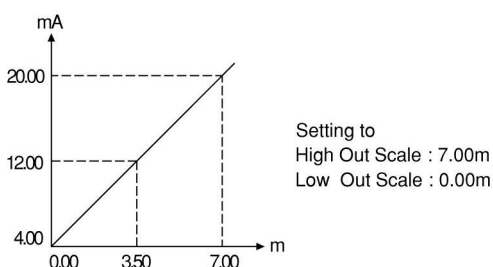
Ex) In case of input range 4.00~20.00mA and Level 0.00~7.00m



▷ Output scaling function

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

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



▷ Sensor compensation function

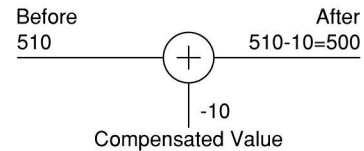
The function is useful for compensating error by long sensor line or changed zero point by aged sensor.

Ex) Before sensor adjust = 510℃

After sensor adjust

= measured value + compensated value

= 510 - 10 = 500℃



▷ Function(mV, Volt, mA type)

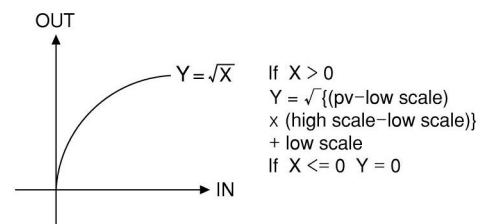
Lin

Pass the input as it is.

Used for general input type and linearity input.

rat

Pass the input after $\sqrt{\quad}$. Used for flow rate by orifice.



▷ Filter function

▷ Filter

This function is moving average filter.

0001 ~ 0099

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

Setting filter function delays response.

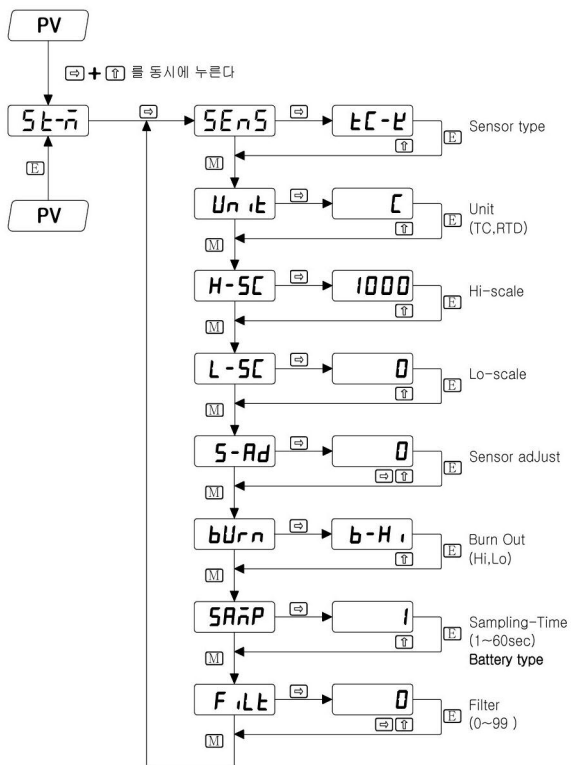
Do not use filter when high speed response is needed.

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

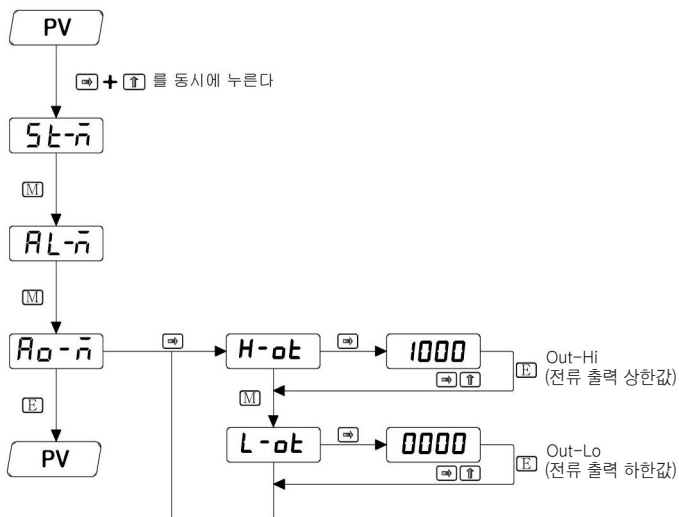
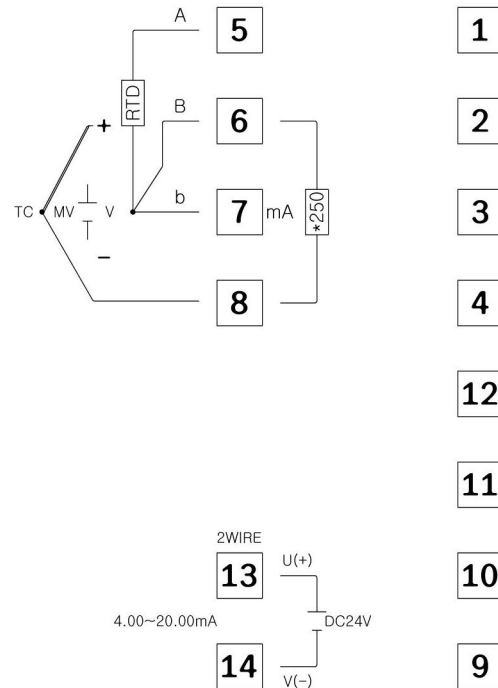
2선식 온도 변환기

2-WIRE SMART TRANSMITTER(PANEL MOUNT TYPE)

SET UP MODE

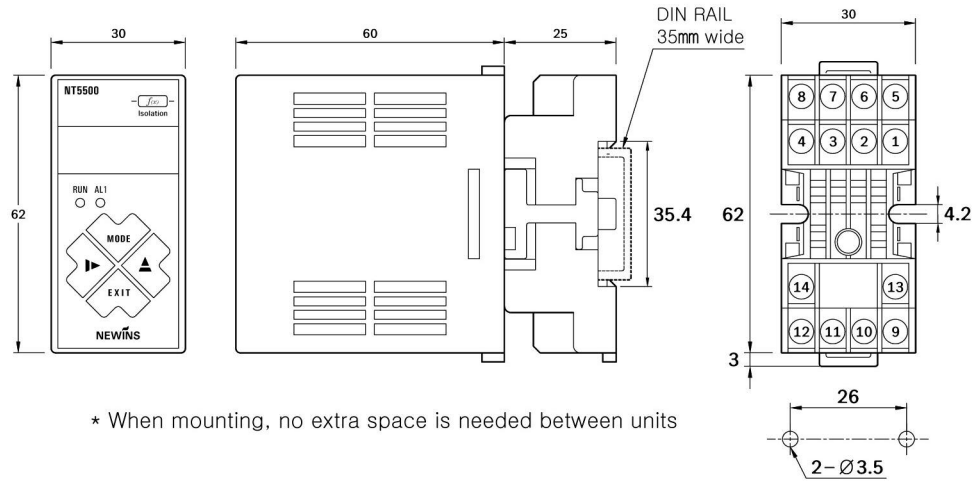


TERMINAL DIAGRAM



DIMENSION & PANEL CUT

▶ Single Mounting (unit:mm)



* When mounting, no extra space is needed between units

▶ Multi Mounting (unit:mm)

※ To avoid a shock between the home and the home oh the socket, insert the adhesion

