| NEWINS | NT5400T |
|---|---|
| 2선식 온도 전송기 | 2 Wire Temperature Transmitter |

## 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.

◉ Isolation voltage AC1000V between sensor / current loop.

◉ IP-67

## SPECIFICATIONS

▷ **Measuring and displaying interval :** 400ms
▷ **Input resistance :**
  Volt (T/C) 400k$\Omega$, Other type 1M$\Omega$
▷ **Signal source resistance :**
  PT100$\Omega$..30$\Omega$/Line,
  Volt (T/C)  300$\Omega$/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$0.25% FS
▷ **Output :**
  2wire DC4.0~20.0mA
  Low limit : 3.80mA
  upper limit : 20.80mA
▷ **Power supply :**
  DC 9~35V
  Load limit (vsp9V) / 0.021÷R$\Omega$
▷ **Direction strength :**
  1000VAC 1minute (input to output)
▷ **Operating condition**
  Operating Temp/Humidity : -20~60℃, 0~100% RH
  Storage Temp/Humidity   : -20~70℃, 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)

## INPUT TYPE

▷ **Multi range input**
  Free input selection by code

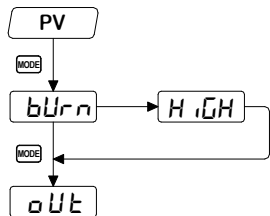| Sensor Type | | Range | Scale | Symbol |
|---|---|---|---|---|
| TC | B(PR 30%) | 0 ~ 1800℃ | - | tC-b |
| | R(PR 13%) | 0 ~ 1750℃ | - | tC-r |
| | S(PR 10%) | 0 ~ 1750℃ | - | tC-5 |
| | K(CA) | -200 ~ 1350℃ | - | tC-K |
| | E(CRC) | -200.0 ~ 700.0℃ | - | tC-E |
| | J(IC) | -199.9 ~ 800.0℃ | - | tC-J |
| | T(CC) | -199.9 ~ 400.0℃ | - | tC-t |
| Volt | mV | -100.0 ~ 100.0mV | -1999 ~ 9999 | mu |
| | Volt | -10.0 ~ 10.0V | -1999 ~ 9999 | u |
| mA | mA | 4.00 ~ 20.00mA | -1999 ~ 9999 | mA |
| PT | Pt100$\Omega$ | -199.9 ~ 800.0℃ | - | d-Pt |
| | JPt100$\Omega$ | -199.9 ~ 800.0℃ | - | J-Pt |

mA input needs 20$\Omega$ 0.05% 25ppm resistance spiral on outside.

▷ **Minium measuring span**
  **TC :** K , E, J, T : 50℃ or 2mV whichever is greater
     R, S, B : 200℃
  **mV :** 4mV
  **RTD :** 20℃ or 4.0$\Omega$ whichever is greater
     sensor current : max 0.3mA

Z

## MAJOR FUNCTIONS

▷ **Burn-out select function**
Sensor burnout when output select function.



```
      PV
      │
    [MODE]
      │
      ▼
   bUrn ──→ HiGH
      │        │
    [MODE]     │
      │ ◄──────┘
      ▼
    oUt
```
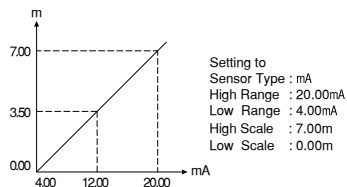
High : 20.80mA keeping
Low : 3.80mA keeping

▷ **Display scaling function (mV, Volt, mA only)**
This function changes and sets the display value according to scale and input range.
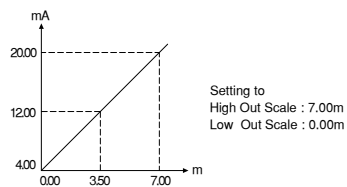
Ex) In case of input range 4.00~20.00mA,
Level 0.00~7.00m



Setting to
Sensor Type : mA
High Range : 20.00mA
Low Range : 4.00mA
High Scale : 7.00m
Low Scale : 0.00m

▷ **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



Setting to
High Out Scale : 7.00m
Low Out Scale : 0.00m

▷ **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
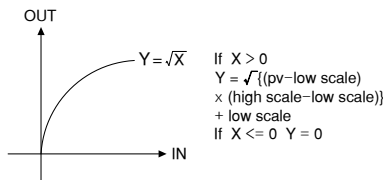= measured value + compensated value
= 510 - 10
= 500℃



| Before | After |
|--------|-------|
| 510 | 510-10=500 |

-10
Compensated Value

▷ **Function(mV, Volt, mA type only)**

$\boxed{\text{L in}}$
Pass the input as it is.
Used for general input type and linearity input.

$\boxed{\text{5-rt}}$
Pass the input after $\sqrt{\phantom{x}}$.
Used for flow rate by orifice.



$Y=\sqrt{X}$
If X > 0
$Y = \sqrt{\{(pv-low\ scale) \times (high\ scale-low\ scale)\}} + low\ scale$
If X <= 0  Y = 0

$\boxed{\text{L int}}$
Like level measuring, when it does not display measuring under zero, it always can display zero by using limit function.
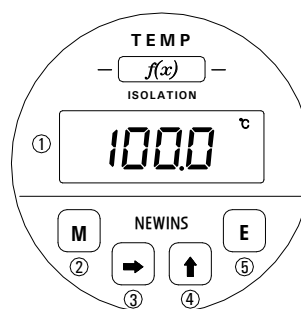
▷ **Filter function**
Filter is moving average filter. It has 4 kinds of function.

$\boxed{\text{nonE}}$ : It displays the change of input without filter.
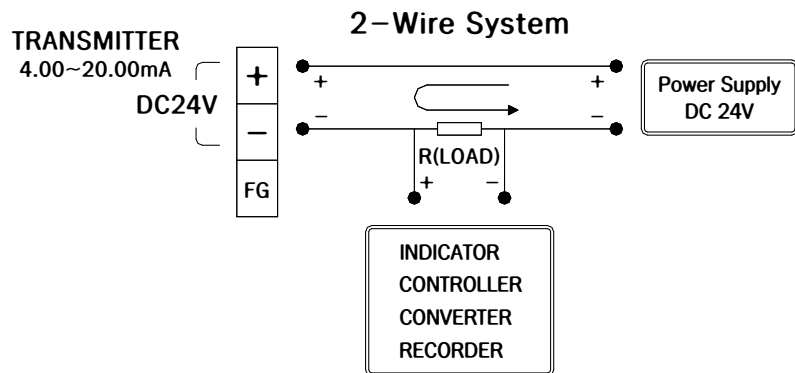
$\boxed{\text{Au 4, 8, 16}}$ : It displays in recent input No 4,8,16 sample average. Setting filter function delays response. Do not use filter when high speed response is needed. When output and display value are changed by irregular input, it is possible to get regular input and display value by using 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
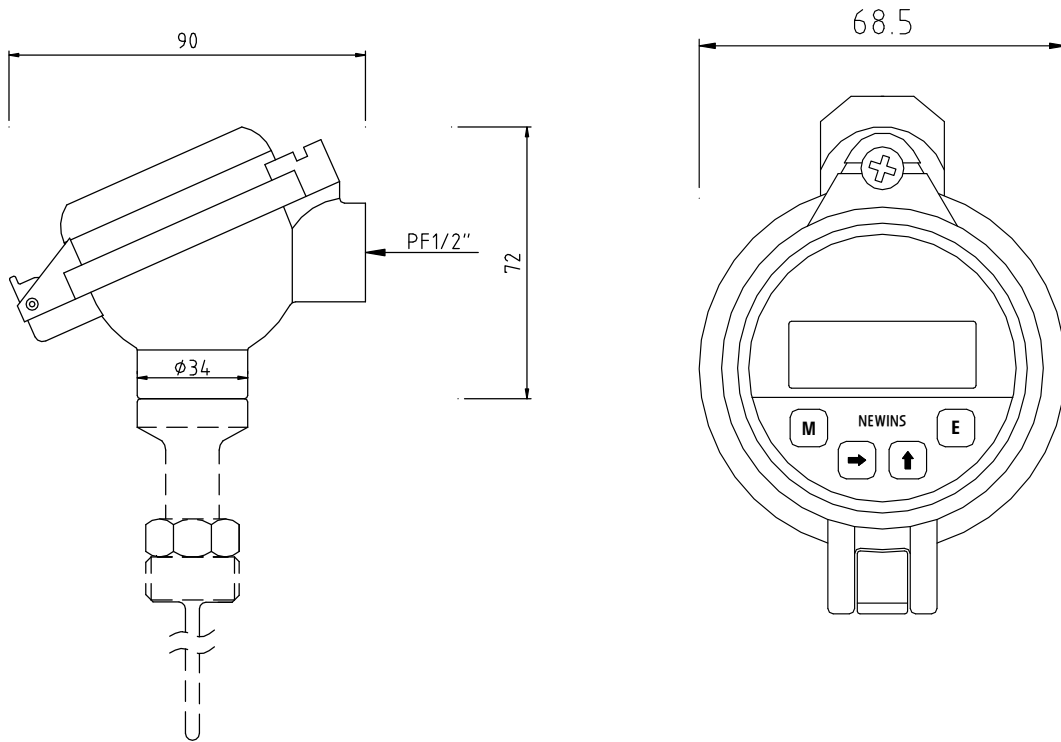⑤ [EXIT] : Out of mode

## TERMINAL DIAGRAM



## 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 (at 0℃) |
| | P | 2 | | JPt100Ω (at 0℃) |
| | Z | 0 | | Others element |
| Sensor | | | | Consult |

## DIMENSION

※ **Electric connection**



Unit:mm