

# In-Head Mounted Smart Temperature Transmitter

## 【Features】

### • Universal Input

TC Input: K, E, S, B, R, J, T, N

RTD Input: PT100, PT200, PT500, PT1000, Cu50

mV Input: -80 ~ +80 mV

R Input: 0 ~ 400 Ω ; 0 ~ 4000 Ω

Note: USBlinker is needed if the users want to program the input type by themselves:

### • TC/RTD Sensor Broken Alarm

When sensor broken happened, 2 alarming ways are offered at the same time.

1: The LED will blink.

2: Output a preset current to indicate the sensor broken happened.

### • Low temp. drift , auto calibrating Zero.

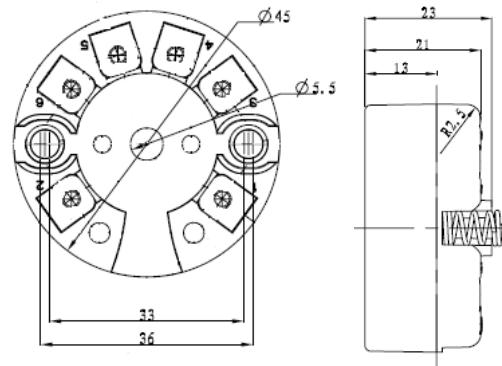
### • Enable opposite polarity output



## 【Main Usage】

- Linearize the TC/RTD input, convert into standard current output
- Convert mV voltage signal input into standard current output
- Convert resistance signal input into standard current output
- Convert 0 ~ 20mA (can be expanded to 40mA) current input into standard current output
- Convert 0 ~ 1V voltage output signal into standard current output
- Can feed the field two-wire system or three-wire system and convert the output voltage or the current signal of the field devices into standard current output
- Output two-way standard current signal

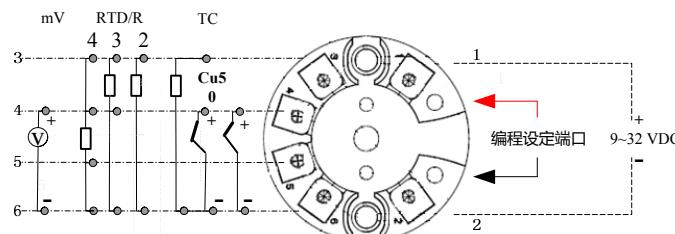
## 【Size】



## 【Tech Parameters】

Communication Interface	Double-Pin
Power supply	9 ~ 32 VDC
Response time(0-90%,100%-10%)	≤ 0.4S
Precision	±0.1%
Min working voltage	9V
Temperature drift	±0.01%/°C
Ambient Temperature	-40 ~ 85 °C
Ambient Humidity	≤95% RH (NA)
Input\Output\PS Isolate*	≥ 1500VAC: 1min
Input\output\ PS Insulation*	≥ 100MΩ/500V
Calibrating Ambient Temperature	25±2 °C
Input Loop Power (Terminal 5+、4-)	26V...18V (4 ~ 20mA)
Terminal Block Size	Max 2.5 mm <sup>2</sup>
Terminal Block Torsion	0.5Nm
IP Ranking : Casing/Terminal	IP50/IP20
Weight	≈150g

## 【Wiring Diagram】



## 【Convert Accuracy】

	Type	Meas. Range	Min. Span	A/D Acc.	Accuracy
T/C	K	- 270 ~ 1372 °C	100 °C	±0.3 °C	±1 °C or ±0.1 %
	E	- 270 ~ 1000 °C	100 °C	±0.25 °C	±1 °C or ±0.1 %
	S	- 50 ~ 1768 °C	500 °C	±1 °C	±2 °C or ±0.1 %
	B	400 ~ 1820 °C	500 °C	±2 °C	±2 °C or ±0.1 %
	R	- 50 ~ 1768 °C	500 °C	±1 °C	±2 °C or ±0.1 %
	J	- 210 ~ 1200 °C	100 °C	±0.25 °C	±1 °C or ±0.1 %
	T	- 270 ~ 400 °C	100 °C	±0.25 °C	±1 °C or ±0.1 %
	N	- 270 ~ 1300 °C	100 °C	±0.4 °C	±1 °C or ±0.1 %
RTD	PT100	- 200 ~ 850 °C	50 °C	±0.15 °C	±0.2 °C or ±0.1 %
	PT200				
	PT500				
	PT1000				
R Input	Cu50	- 50 ~ 150 °C	50 °C	±0.2 °C	±0.2 °C or ±0.1 %
	0 ~ 400 Ω				
	0 ~ 4000 Ω				
mV Input	+80 mv ~ -80mv	3mV	±12uV	±0.1%	

## 【Installation Dimensions】

Both 33mm and 36mm

## 【LED Indicator】

Solid red indicates working normally  
Blink indicates the sensor broken

## 【Comply with】

EN61326 : 1997+A1 : 1998+A2 :  
2001+A3 : 2003

Note: The % of the convert accuracy is the ratio to the relative measuring range.  
Deviation should use the absolute value or the relative bigger one.  
Pt100 reference standrd: IEC60751 «  
TC reference standard: IEC60584-1

## 【Input】

### ●RTD、R Input

RTD Short-Circuit Decision Condition:	$< 15 \Omega$
Allowed Wire Resistance for the RTD Detection	$< 50 \Omega$
Detect Current:	$\approx 0.2 \text{mA}$
Short/Broken Alarming:	Support
Detect Time for Short/Broken Alarming	$< 5\text{s}$

### ●TC Input

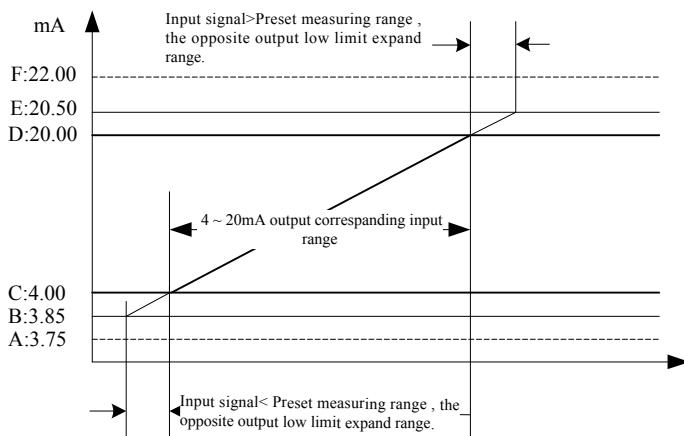
TC Sensor Broken Alarming:	Support
CJC Error	
Internal Temperature. Sensor:	$\leq \pm 1^\circ\text{C}$
External Cu50:	$\leq \pm 0.2^\circ\text{C}$
Detect Current Sensor Broken:	$\leq \pm 0.2\mu\text{A}$
Detect Time for Short/ Broken Alarming	$< 5\text{s}$
Input Impedance:	$\approx 10\text{M}\Omega$

Note: Input Impedance  $> 50\text{M}\Omega$ ; must be customized

### ●mV Input

Measuring Range for Voltage Input:	-80mV ~ 80mV
Programmable Input Measuring Range:	-80mV ~ 80mV
Input Impedance:	$\approx 10\text{M}\Omega$

## 【Current Output】



Note: 1: Output range B ~ E is linear with input signal.

2: when the broken alarming <low limit output, A will be 3.75mA it is the alarming current output.

3: When the broken alarming >high limit output, A will be 22mA it is the alarming current output.

4: The accuracy of C、D is 0.05%; the accuracy of A、B、E、F is

1%。 5: The linear deviation of B ~ E  $\leq 0.05\%$

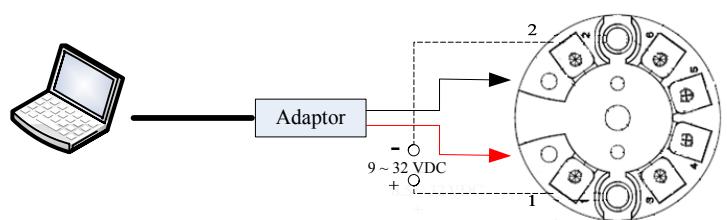
### ●Current Output Loading Capacity :

When the power supply voltage is 24V:  $\leq 700 \Omega$

When the power supply voltage is 32V:  $\leq 1060 \Omega$

(Max power supply voltage - Min working voltage) / Max current  $\approx$  Max loading  
Resistance ( $32V - 9V$ ) /  $0.022A \approx 1K \Omega$

## 【USB Programming Connection】



### Note:

1: MUST be powered with an external power supply (8.5V-30VDC) when programming.

2: Before running Config, make sure the USBLinker is connected with Config will identify the com port automatically and upload the preset data to the computer.