# Temperature transmitter

**Committed to process automation solutions**

# Datasheet


## SUP-ST500

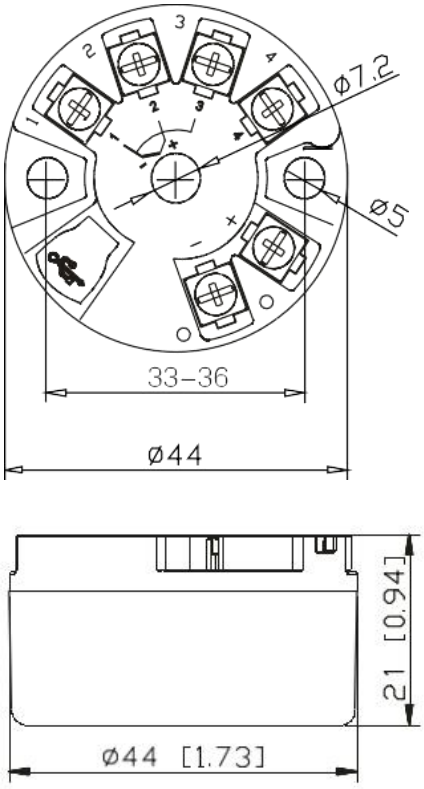


Add: No.600,No.21 Street, Hangzhou
Economic&Technological Development Area,
Zhejiang,China

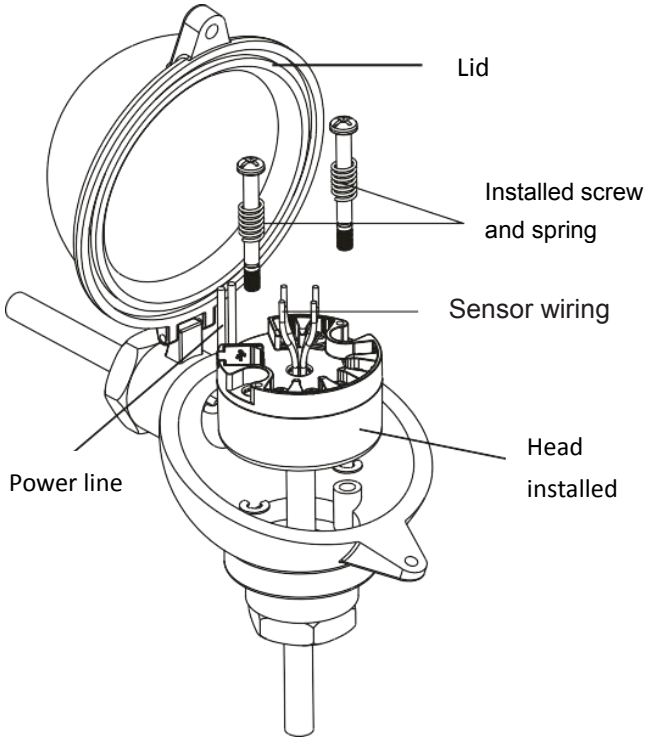
Intelligent temperature transmitter (round card) is used for the signal input of resistance temperature detector (RTD) and thermocouple (TC)， and 4 - 20mA analog output of the two-wire system. It is installed inside the sensor(Form B).

## Dimension

Unit：mm(in)




## Installation





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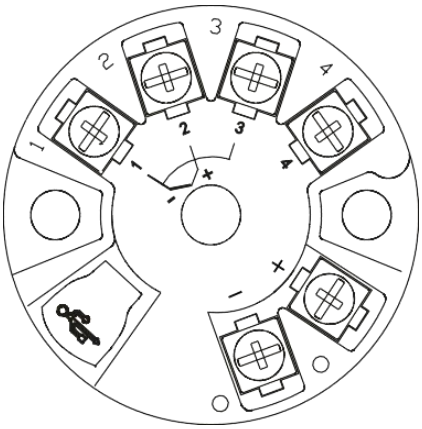
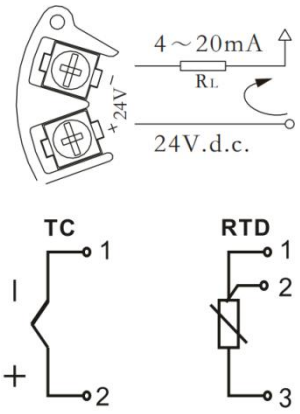
## Wiring Diagram




Note: RTD (platinum resistance) input: three wire resistance value must be equal, each wire resistance is no more than 10 Ω

## Configuration Schematic

### Standard

V1 or V8 serial port programming line


Note: no 24V power supply is required when using the V8 serial

### Isolated

V1 serial port programming line

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# Parameter

| | |
|---|---|
| **Input** | |
| Input signal | Resistance temperature detector(RTD), thermocouple (TC), and linear resistance. |
| Cold-junction compensation temperature scope | -20～60℃ |
| Compensation precision | ±1℃ |
| **Output** | |
| Output signal | 4-20mA |
| Load resistance | RL≤(Ue-12)/0.021 |
| Output current of upper and lower limit overflow alarm | IH=21mA、IL=3.8mA |
| **Power supply** | |
| Supply voltage | DC12-40V |
| **Other parameters** | |
| Temperature drift | 0.02%FS/℃ （Standard） |
| | 0.0075%FS/℃ （Isolated） |
| Response time | Reach to 90% of the final value for 1s |
| Used environmental temperature | -40～80℃ |
| Storage temperature | -40～100℃ |
| Aseismicity | 4g/2～150Hz |
| Installation angle | Unlimited |
| Installation area | B-type top cassette installation |
| Electromagnetic compatibility | Conform to GB/T18268 industrial equipment application requirements (IEC 61326-1) |
| **Isolated type** | |
| Insulation strength (between input and output) | 1500Vrms (1 min, without spark) |
| Insulation resistance (between input and output) | ≥100MΩ(under the 500 VDC) |

**Input type and transmission accuracy(standard):**

| Model | Type | Measurement scope | Minimum measurement scope | Scale range | Conversion accuracy |
|---|---|---|---|---|---|
| Resistance temperature detector (RTD) | Pt100 | -200.0～850.0℃ | 10℃ | ≤100℃ | 0.20% |
| | | | | >100℃ | 0.10% |
| | Cu50 | -50.0～150.0℃ | 10℃ | ≤100℃ | 0.20% |
| | | | | >100℃ | 0.10% |
| Thermocouple (TC) | B | 400～1800℃ | 500℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |


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| | | | | | |
|---|---|---|---|---|---|
| | E | -100～1000℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | J | -100～1200℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | K | -180～1372℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | N | -180～1300℃ | 50℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | R | -50～1768℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | S | -50～1768℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | T | -200～400℃ | 50℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | Wre3-25 | 0～2315℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | Wre5-26 | 0～2310℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |

**Input type and transmission accuracy(Isolated):**

| Model | Type | Measurement scope | Minimum measurement scope | Scale range | Conversion accuracy |
|---|---|---|---|---|---|
| Resistance temperature detector (RTD) | Pt100 | -200.0～850.0℃ | 20℃ | ≤100℃ | 0.20% |
| | | | | >100℃ | 0.10% |
| | Cu50 | -50.0～150.0℃ | 20℃ | ≤100℃ | 0.20% |
| | | | | >100℃ | 0.10% |
| Thermocouple (TC) | B | 400～1800℃ | 500℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | E | -100～1000℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | J | -100～1200℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | K | -180～1372℃ | 50℃ | ≤300℃ | 0.20% |
| | | | | >300℃ | 0.10% |
| | N | -180～1300℃ | 50℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | R | -50～1768℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |


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| | | | | | |
|---|---|---|---|---|---|
| | S | -50～1768℃ | 500℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |
| | T | -200～400℃ | 50℃ | ≤500℃ | 0.20% |
| | | | | >500℃ | 0.10% |

Notes:

1. The above accuracy data was obtained by testing at an ambient temperature of 20℃ ± 2℃
2. The output precision “%” is relative to the set range.
3. The cold end compensation error needs to be added to the thermocouple measurement, and the internal cold end compensation error is ≤±1° C.


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