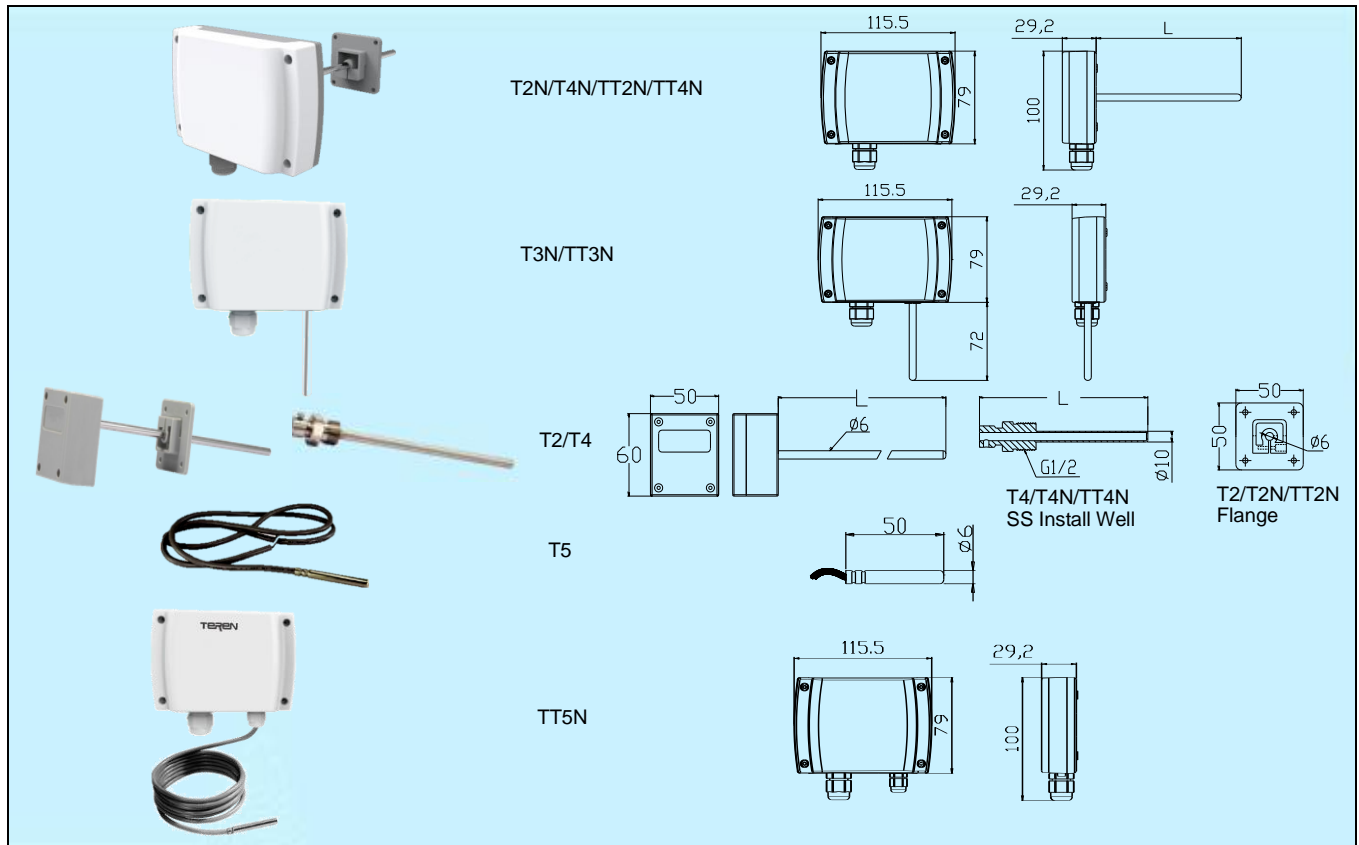


# T/TT2, 3, 4N, T5, TT5N Series Temperature Sensor/Transmitter



## Applications & Features

- These sensors/transmitters can be used for temperature measurement in duct air(T2/T2N/TT2N), water and steam pipe(T4/T4N/TT4N) , outside air(T3N/TT3N) and surface/ strap(T5/TT5N)
- High performance thermistor & RTD, ensure accurate temperature measurement
- Multiple output optional, Light and state of art housing, easy installation
- Over voltage and reverse polarity protection, high reliability and anti-interference capability
- Wide temperature range and fast response
- High protection rate up to IP65

## Specifications

### T2/T4/T5, T2/3/4N series temperature sensor

**Sensor:** High accuracy thermistor or RTD, see models  
**Output:** thermistor or RTD, see models and resistance table  
**Accuracy:** typical  $\pm 0.2\sim 0.4^{\circ}\text{C}@25^{\circ}\text{C}$ , see models  
**Wiring:** 2 wires or 3 wires (RTD)  
 (3 wires connection could obtain better accuracy)

**Work Temp.(Whole product):**  $-40\sim 70^{\circ}\text{C}$ , 0~95%RH (Non cond.)

**Medium Temperature(Probe):**  $-40\sim 100^{\circ}\text{C}$

**Cable(T5/TT5N):** Black, silicone,  $2*0.3\text{mm}^2$ , 1m length,  $-60\sim 180^{\circ}\text{C}$ ,  $R_{\text{conductor}}=0.069\Omega/\text{m}$ ,  $R_{\text{insulation}} > 100\text{M}\Omega (25^{\circ}\text{C})$

### TT2/3/4/5N series temperature transmitter

**Sensor:** PT1000, class A

**Range:** see models

**Output:**  $4\sim 20\text{mA}$  (2 wires) or  $0\sim 10\text{VDC}, 0\sim 5\text{VDC}$

**Output Load:**  $\leq 500\Omega$  (current),  $\geq 3\text{k}\Omega (0\sim 10\text{VDC})$ ,  $\geq 2\text{k}\Omega (0\sim 5\text{VDC})$

**Total accuracy:**  $\pm 0.5^{\circ}\text{C}@0\sim 50^{\circ}\text{C}$ , see accuracy curve

**Power:** Current  $18.5\sim 35\text{VDC}$  ( $R_L=500\Omega$ )  $8.5\sim 35\text{VDC}$  ( $R_L=0\Omega$ )  
 Voltage  $16\sim 35\text{VDC}, 16\sim 28\text{VAC}$

**Work Temp.(Whole product):**  $-30\sim 70^{\circ}\text{C}$ , 0~95%RH(Non cond.)

**Medium Temperature(Probe):**  $-40\sim 100^{\circ}\text{C}$

**Storage Temperature:**  $-30\sim 70^{\circ}\text{C}$

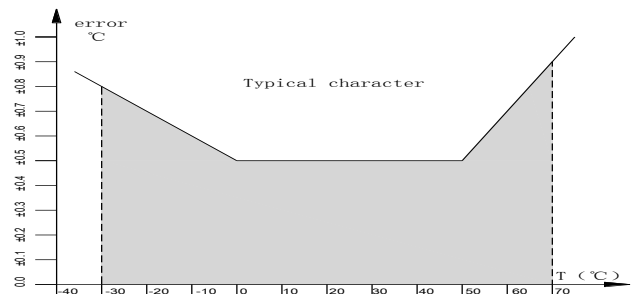
**Housing:** fireproof ABS, SS probe( $\phi 6\text{mm}$ ), SS Well

**Protection:** IP65 (IP68 for T5/TT5N probe, 1m water depth)

**Weight:** T2:161g; T4:340g; T5:36g; T2N: 268g; T3N: 222g; T4N:477g; TT2N:282g; TT3N:190g; TT4N:464g; TT5N: 205g

**Approval:** CE

**Accuracy curve:**



## Models

### T2/T4, T5 T2/3/4N temperature sensors

Model	T2/T2N T3N T4/T4N T5		Duct mount temperature sensor Outside air temperature sensor Immersion temperature sensor Cable temperature sensor
Thermistor or RTD*	3		PT1000, $\pm 0.2^{\circ}\text{C}@25^{\circ}\text{C}$
	4		PT100, $\pm 0.2^{\circ}\text{C}@25^{\circ}\text{C}$
	5		NTC20K, $\pm 0.4^{\circ}\text{C}@25^{\circ}\text{C}$
	6		Ni 1000, $\pm 0.4^{\circ}\text{C}@25^{\circ}\text{C}$
	7		NTC10K-II, $\pm 0.4^{\circ}\text{C}@25^{\circ}\text{C}$
	9		NTC10K-III, $\pm 0.4^{\circ}\text{C}@25^{\circ}\text{C}$
	A		NTC10K-A, $\pm 0.4^{\circ}\text{C}@25^{\circ}\text{C}$
Length (T2/T2N/T4/T4N)	0		75mm
	1		125mm
	2		200mm
	7		Others

\* See resistance table on page 1 of catalog.

\*The default cable length of T5 is 1m. It can be ordered for other length of integer meters, such as T53-2, which means the cable length is 2 m.

**TT2/3/4/5N series temperature transmitter**

<b>Model</b>	TT2N			Duct mount temperature transmitter
	TT3N			Outside air temperature transmitter
	TT4N			Immersion temperature transmitter
	TT5N			Remote temperature transmitter
<b>Output</b>		1		0~10V
		2		4-20mA(2 wires)
		E		0~5V
<b>Range</b>		1		0-50°C
		2		0-100°C
		3		-40-60°C
		7		others
<b>Probe Length (TT2/4N)</b>			0	75mm
			1	125mm
			2	200mm
			7	Others

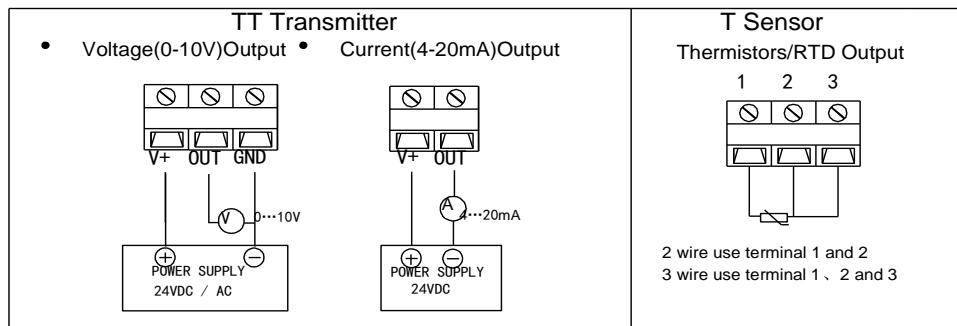
**T4/T4N/TT4N Install Well**

<b>Model</b>	A-T		Stainless Steel Well
<b>Probe Length</b>		0	75mm
		1	125mm
		2	200mm

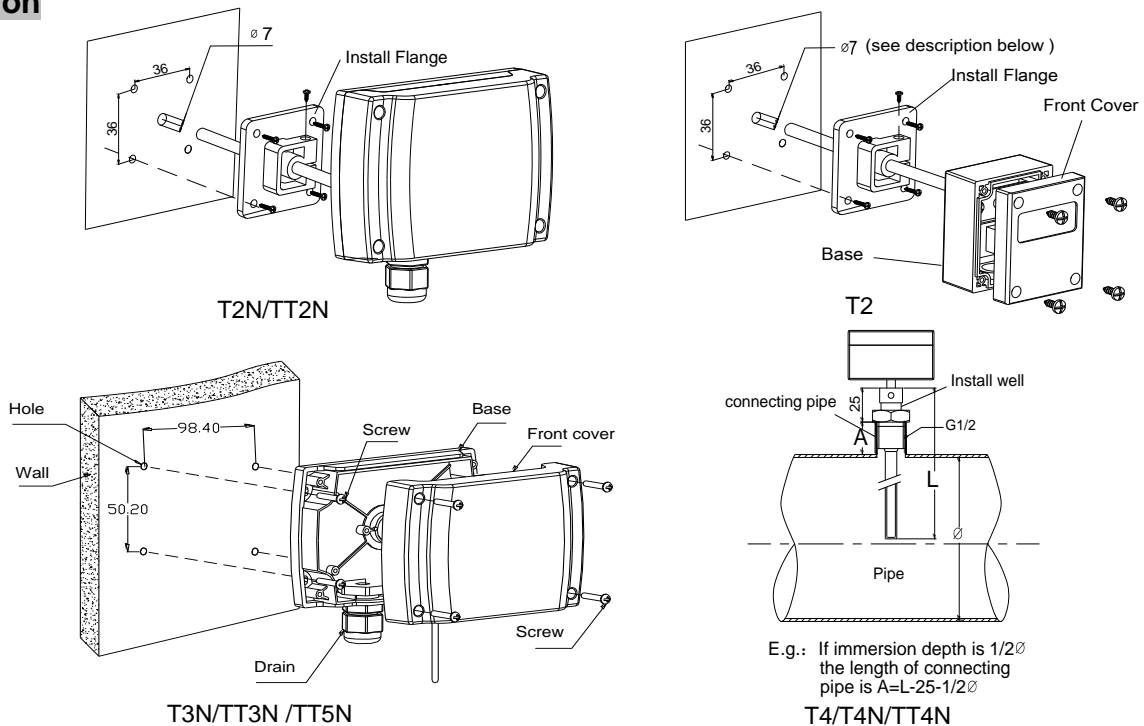
\*The default cable length of TT5N is 1m. It can be ordered for other length of integer meters, such as TT5N11-2, which means the cable length is 2 m.

**Connection**

Different models have different electrical terminals. Please wire according to the wiring diagram on specific product.



**Installation**



• The install flange is recommended for installing the T2/T2N/TT2N. The depth being inserted is adjustable. Open a hole of  $\Phi 7$ mm on the duct. Install the flange with the duct using 4 screws, and use another screw on it to tighten the probe and the whole T2/T2N/TT2N. Last, the duct hole should be air-tight after installation.

• T3N/TT3N housing should be installed vertically on the wall, with the sensor downward. The suitable place should be far away from any heat or cool sources. If needed, there should be a shield to prevent the sensor from direct sun light and rain. Drill 4 holes on the wall according to the dimensions. Install the base with the 4 screws after removing the front cover.

- T4/T4N/TT4N should be installed with the well. The connecting pipe is G1/2 according to the above picture and should be welded onto the installed pipe. Then screw in the well and tighten it to ensure the pressure of piping system. Last, put in the T4/TT4 to the bottom of the well and tighten it.
- Remove the front cover. Install the drain on the base and ensure it is completely air-tighten. Then wire according to the diagram inside the cover. Restore the front cover. Make sure to install the cover completely air-tight with the base (there is a seal ring between the cover and the base) so that the whole housing could meet up to IP65 protection.
- T5/TT5N can be inserted in or strap on the measured objectives.

### Attention

It should be power OFF during installing and wiring. When using 24VAC, it is strongly recommended to power the unit with independent transformer. If sharing a 24VAC transformer with other equipments such as controllers, transmitters or actuators, please make sure the terminals 24V and GND are connected correctly. Otherwise, it will perhaps reduce serious damages. The temperature sensor (T2/3/4N) can only be powered less than 100mW@25°C. If exceed, the thermistor/RTD will be damaged.

### Warranty

- It has limited warranty for eighteen (18) months after the production date.
- It does not extend to any unit that has been subjected to misuse or accident.
- It is, in any event, strictly limited to the replacement or repair of the product itself.



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