



## TI Temperature transmitter

TI (Z) Integral Temperature Transmitter with thermal couple(resistance) is an on-site installation type temperature transmitter of temperature series instruments. It consists of thermocouple, thermal resistance and temperature transmitter module, adopting two-wire system, with nonlinear calibration circuit, and can be used to directly measurement the temperature of liquid, gas media and special matter within  $-200^{\circ}\text{C}\sim+1600^{\circ}\text{C}$  during industrial process, converting temperature signal into current output signal of 4-20mA DC which is linear to temperature signal, and sending to display, adjusting recorder or computer for total distributed control.

This product is widely applied in petroleum, chemical, metallurgy, power, light industry and textile, food industries etc; it could be used as a supporting device with coil instrument, digital instrument, recording instrument, regulators and computer etc. To constitute a measurement control system of various temperatures.

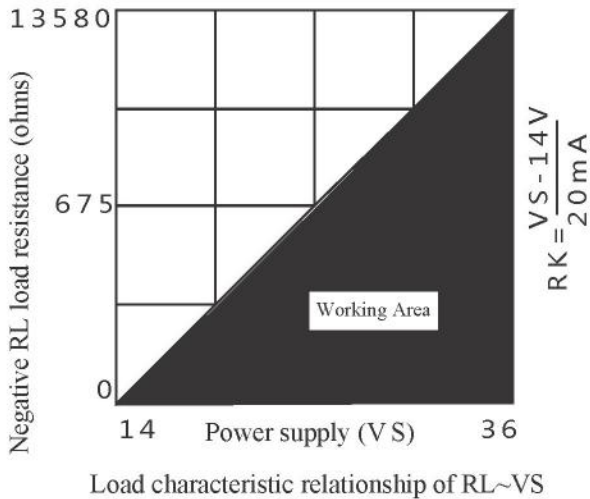
### Types



Product Features

With high precision of compensation circuit for cold terminal, compensation accuracy within full temperature range is  $\pm 0.5^{\circ}\text{C}$ ; Unique nonlinear calibration circuit, output signal is in linear relationship with the measured temperature; With drift self-calibrating system, ensuring the precision within the whole range of operating temperature.

Technical parameter



Elementary Error	$\pm 0.2\%$ $\pm 0.5\%$ $\pm 1\%$
Influenced by Ambient Temp. Change	for 0.2 level: 0.02%F.S/ $^{\circ}\text{C}$ for 0.5 level: 0.05%F.S/ $^{\circ}\text{C}$ for 1.0 level: 0.05%F.S/ $^{\circ}\text{C}$
Output signal	4-20mA DC, two wire system
Power Supply	Rated voltage 24VDC
Load Capacity	please refer to the left RL~Vs relationship picture When the voltage is 24VDC, the load capacity is 0-500 $^{\circ}\text{C}$
Compensation Error of Thermocouple for cold terminal	<1 $^{\circ}\text{C}$ within temperature range
Working temperature range	-25~85 $^{\circ}\text{C}$
Relative Humidity	5~95%, no condensation
Local display header precision	Analog pointer indicator: $\pm 2.5\%$ Digital display indicator: $\pm 1.0\%$
Power Consumption	< 0.5W

Selection table

Temperature Transmitter

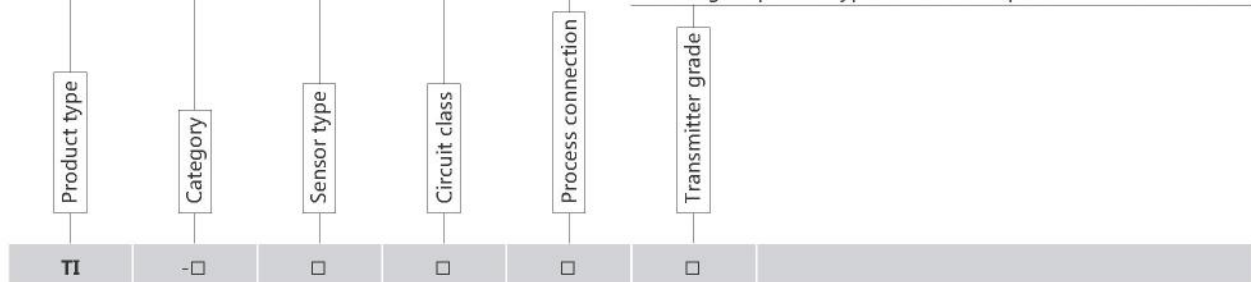
R: Thermocouple; Z: Thermal resistance

1: Adapter K thermocouple/adaptation Pt100 thermal resistance; 2: Adapter E thermocouple/adaptation Cu100 thermal resistance; 3: Adapter J thermocouple/adaptation Cu50 thermal resistance; 4: Adapter B thermocouple; 5: Adapter S thermocouple; 6: Adapter T thermocouple; 7: Adapter N thermocouple; 8: Customize

0: Seclusion type; 1: Non Seclusion type

0: Conventional; 1: Tailored version; 2: LCD ARM; 3: Guideway

0: Conventional; 1: Intelligent type; 2: Numeric display; 3: Pointer type; 4: Intelligent Numeric display; 5: Intelligent pointer type; 6: With Hart protocol; 7: Customize



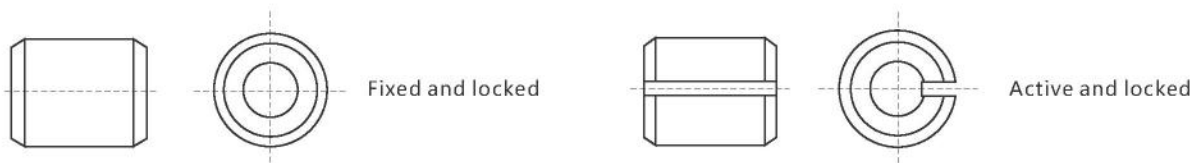
Measuring range

Category	Material	Graduation	Measuring range
Thermocouple	Ni-Cr, BR	E	0~1000°C
	Ni-Cr, Nisil	K	0~1300°C
	Ni-Cr-Si, Nisil	N	0~1300°C
	Pt-Rh10, Pt-Rh	S	0~1600°C
	Pt-Rh30, Pt-Rh6	B	0~1800°C
	Cu, Br	T	0~400°C
	Fe, Br	J	0~800°C
Thermal resistance	Copper thermal resistance	Cu50	-50~150°C
	Copper thermal resistance	Cu100	-50~150°C
	Platinum thermal resistance	Pt100	-200~600°C

Assembly Type Installation Specification

Fixed Thread		d	M	H	S	D0		Nominal Pressure	
		Φ12 Φ16	M27×2	32	32	Φ40		10	
Active Thread		d	D2	D1		d0		Nominal Pressure	
		Φ12 Φ16 Φ20	Φ70	Φ54		Φ6		Normal Pressure	
Fixed Flange		dD2	D2	D1	D0	d0	H	h	Nominal Pressure
		Φ12 Φ16 Φ20	Φ95	Φ65	Φ45	Φ14	19	3	6.4
Cone-Protective tube for Fixed Thread		d	M	h	S	D0		Nominal Pressure	
		Cone-shape	M33×2	32	36	Φ48		30	

Armored Type Installation Specification



Type	Graphic	Basic Parameter	Φ8	Φ6	Φ5	Φ4	Φ3	Φ2		
Locked Thread		M	M16×15			M12×15				
		S	22			19				
		H	15							
		Fixed and Locked Nominal Pressure	26MPa							
		Active and Locked Nominal Pressure	Normal Pressure							
Locked Flange		D	Φ60			Φ50				
		D0	Φ42			Φ36				
		D1	Φ24			Φ20				
		d0	Φ9			Φ7				
		S	Φ22			Φ19				
		Fixed and Locked Nominal Pressure	25MPa							
		Active and Locked Nominal Pressure	Normal Pressure							

### Assembly Type Working Temp. & Response Time Table

Diameter of Protective Tube	Material of Protecting Tube	Operating Temperature (°C)		Response Time
		Long Term	Short Term	
Φ16	Corundum Tube	1600	1800	<150
	High Aluminum Tube	1300	1600	
	1Cr18Ni8Ti	-200~+800	900	<90
	Cr25Ti	1000	1100	
	Carbon Steel 20#	-200~+600	800	
Φ20	Corundum Tube	1600	1800	<240
	High Aluminum Tube	1300	1600	
	1Cr18Ni8Ti	-200~+800	900	<90
	Cr25Ti	1000	1100	
	Carbon Steel 20#	-200~+600	800	
Φ25	Corundum Tube	1600	1800	<360
	High Aluminum Tube	1300	1600	
	1Cr18Ni8Ti	-200~+800	900	<90
	Cr25Ti	1000	1100	
	Carbon Steel 20#	-200~+600	800	

### Armored Type Working Temp. & Response Time Table

Casing Diameter	Φ2	Φ3	Φ4	Φ5	Φ6	Φ8
Thermocouple Response Time(S)	<0.5	<1.2	<2.5	<4	<6	<8
Thermoresistance Response Time(S)	•	<3	<5	<8	<12	<15

## Notes

The following details should be indicated when ordering:

1. Product name
2. Type
3. Graduation
4. Temperature measuring range
5. Overall accuracy and protective tube material, diameter, length, inserting depth
6. Installation and connection mode
7. Ambient temperature
8. Mark of Explosion-proof products
9. Quantity
10. Delivery Time

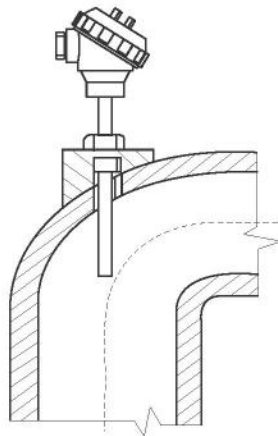
If the precision is not indicated, the 1st Grade would be provided for TI Temperature Transmitter with thermocouple; the 0.5 Grade would be provided for TI Temperature Transmitter with thermoresistance; The overall length of protective tube of integral temperature transmitter with industrial assembled thermocouple(thermal resistance)=inserting depth+150mm.

Order the special specification can be determined in consultation by both parties.

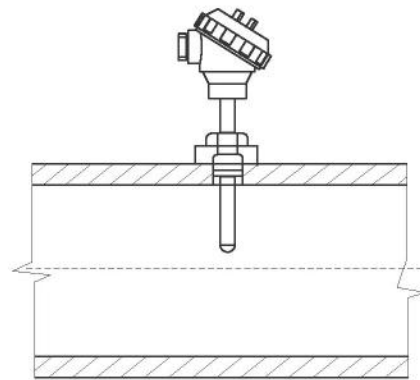
## TI Integral Temperature Transmitter Installation

TI integrated temperature transmitter common form summary image number: for example: TI-A1, TI-A2..TI-A9 and Provide medium with orders, process connection,range specifications and insertion depth and other parameters

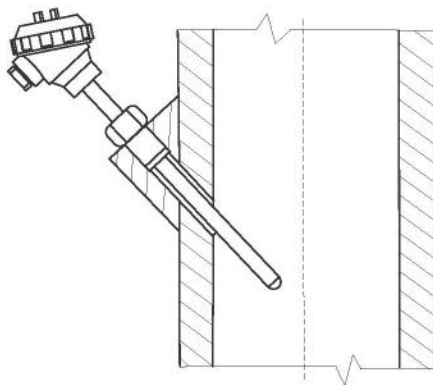
Installation method:



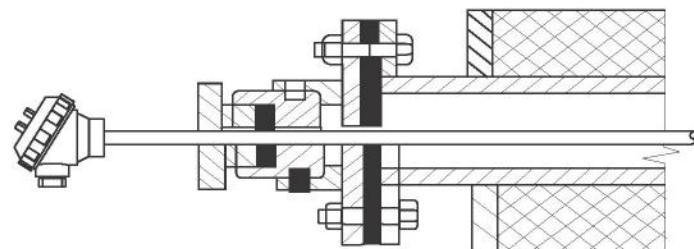
Installation method of On the bend pipe



In a horizontal pipe installation method



In the vertical piping installation method



Boiler flue apertures seal installation method