

TR210/220 SERIES TEMPERATURE TRANSMITTER OPERATION MANUAL



Thank you for purchasing this Fine-Tek product. Please read the user's manual first and be familiar with the product performance and each function before use. Please keep the user's manual for reference in future.

FEATURES

- 2-wire Loop Power 4~20mA output
- Support full-range RTD, TC or Ohm input.
- RTD supports 2-wire, 3-wire and 4-wire input.
- Input or output Isolated type (optional)
- High accuracy, measuring range $\leq \pm 0.1\%$

General VALUES

Input Type	Range	Accuracy
All Type	By Type	$\leq \pm 0.1\%$

Warning

1. Make sure the screw terminals are properly tightened. If the screws drop out, it could cause fire or mechanical breakdown.
2. Don't use this product in explosive or flammable gas environment; due to risk of explosion.
3. Only use the relay within specified load rating. Failure to do so may reduce the life expectancy of the relay or it.
4. Don't disassemble, repair or modify the product without authorization, this may cause short circuit, fire or malfunction.
5. Avoid dropping metal fragments or lead wire scraps inside the product. This may cause short circuit, fire or malfunction.

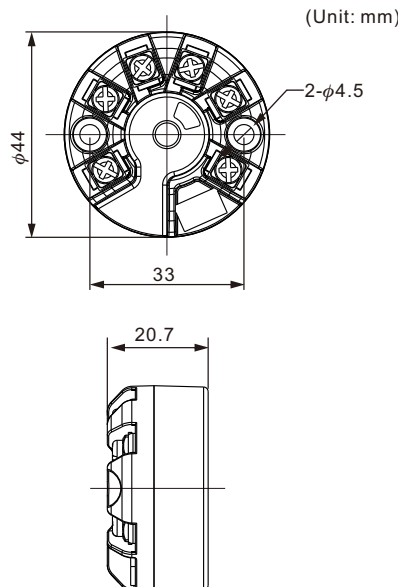
ENVIRONMENTAL CONDITIONS

- a) Indoor use
- b) Altitude up to 2 000 m
- c) Temperature 5°C to 40°C
- d) Maximum relative humidity 80 % for temperatures up to 31°C decreasing linearly to 50 % relative humidity at 40 °C;
- e) Over voltages category II
- f) Pollution degree II.

SPECIFICATIONS

- Supply Voltage: Non-Isolation 12~36Vdc
Isolation 24Vdc $\pm 20\%$
- Thermocouple Input: K / J / T / E / R / S / B / N
- RTD Input: PT100/PT1000
- Resistance Input: 0~400 Ω / 0~4000 Ω
- Output: 4~20mA (Loop Power)
- Accuracy: 12 bits
- Ambient Temperature: -40~85°C
- Communication: N/A
- Galvanic Isolation (ch.1/ch.2): 1500 Vac
- Degree of Protection (IEC 60529): IP00
- Warm Up Time: ≤ 3 minutes

DIMENSIONS



Highly recommend using M4X25L screw for fixing.

BASIC VALUES

Input Type		Range	Accuracy*	Temperature coefficient (% / °C)
Thermocouple	B	250~1820°C	≤ ± 2°C	≤ ± 0.2%
	E	-200~1000°C	≤ ± 1.5°C	≤ ± 0.2%
	J	-210~1200°C	≤ ± 1.5°C	≤ ± 0.2%
	K	-200~1370°C	≤ ± 1.5°C	≤ ± 0.2%
	N	-200~1300°C	≤ ± 1.5°C	≤ ± 0.2%
	R	-50~1200°C	≤ ± 1.5°C	≤ ± 0.2%
	S	-50~1200°C	≤ ± 1.5°C	≤ ± 0.2%
	T	-200~400°C	≤ ± 1°C	≤ ± 0.2%
PT100 /PT1000 2-Wire		-200~850°C	≤ ± 1°C	≤ ± 0.2%
PT100 /PT1000 3-Wire		-200~850°C	≤ ± 0.5°C	≤ ± 0.1%
PT100 /PT1000 4-Wire		-200~850°C	≤ ± 0.5°C	≤ ± 0.1%

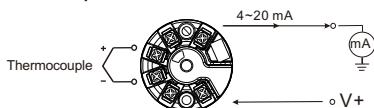
Cold junction compensation : $\leq \pm 1^\circ\text{C}$

*Accuracy at 25°C

*RTD: Over 5 meter measuring distance will recommend to use 3-wire or 4-wire

TERMINAL CONNECTION

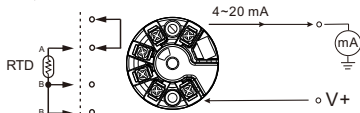
1. Thermocouple to 4~20 mA



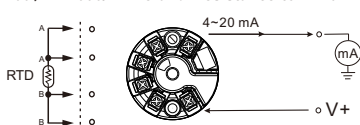
2. PT100, PT1000/2-wire and Resistance to 4~20 mA



3. PT100, PT1000/3-wire and Resistance to 4~20 mA



4. PT100, PT1000/4-wire and Resistance to 4~20 mA



TROUBLESHOOTING

Abnormal Status	Failure Reason	Solution
Indicator shows incorrect parameter = -25%	Signal circuit disconnection.	Check and repair the circuit and the terminal.
	Loop power pin (+/-) wrong connection.	
Indicator shows changeless parameter	The indicator is broken and no power supply to signal terminal.	Check and repair the terminal of indicator.
Analog output mA	Signal transmitter may broken.	Please contact FineTek sales representative for further assistances.
Analog output keeps 21.3mA	RTD or RC or Ohm disconnecting.	Check and repair the circuit and the terminal.
Analog output up to 21.3mA or change irregularly	RTD or RC or Ohm input pin might damage.	Check the sensor and replace defective sensor.
	Wrong connection port of RTD or RC or Ohm input.	Check the wiring and terminal then re-connect.
Unstable signal output	Effect by external disturbance.	Please contact FineTek sales representative for further assistances.
Parameter keeps lower than actual value	Connection wiring is too long to receive the signal.	Please contact FineTek sales representative or further assistances.

