

THERMOELECTRIC TEMPERATURE TRANSDUCER

WHTP2 – □□□□□

Use

By inputting thermal electromotive forces of various kinds of thermocouples based on the JIS, this device insulates and converts thermal electromotive forces into outputs proportional to temperature.

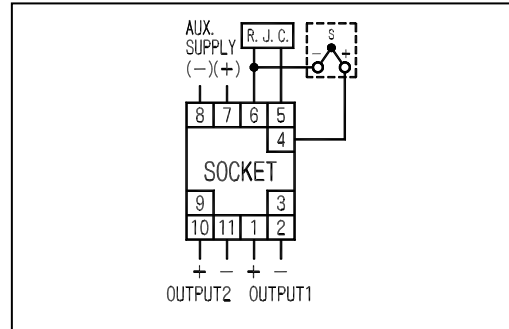


WHTP2-J1H51
(80 × 50 × 133mm/500g)

Features

1. Constant voltage/current output.
2. Withstand voltage between input, output, auxiliary supply and outer case is AC2, 000V (50/60Hz), complete insulation for 1 min..
3. Withstand voltage between 1st output and 2nd output is AC1, 000V.
4. Impulse withstands voltage 5kV, 1.2/50µs (between electric circuit and outer case) positive/ negative polarity 3 times each is guaranteed.

Connection diagram



Specification

Kind of thermo-couple	Standard input range	Input	1 st Output (load resistance)	2 nd Output (load resistance)	Auxiliary supply	Common specification
B	① - ⑨	① : 0-200 ② : 0-300	① : DC0-100mV (200Ω)	① : DC0-100mV (200Ω)	① : AC100V±10%, 50/60Hz ② : AC110V±10%, 50/60Hz	Tolerance: ±0.5% Response time: 0.5sec./90% Consumption VA: AC power source:3VA DC power source:3.5W Weight: AC power source:500g DC power source:400g
			② : DC0-1V (200Ω)	② : DC0-1V (200Ω)		
R	① - ⑨	③ : 0-400 ④ : 0-500	③ : DC0-5V (1kΩ)	③ : DC0-5V (1kΩ)	③ : AC200V±10%, 50/60Hz ④ : AC220V±10%, 50/60Hz	
			④ : DC 0-10V (2kΩ)	④ : DC 0-10V (2kΩ)		
S	① - ⑨	⑤ : 0-600 ⑥ : 0-800	⑤ : DC1-5V (1kΩ)	⑤ : DC1-5V (1kΩ)	⑤ : DC24V±10% ⑥ : other than those above	
			⑥ : DC0-1mA (12kΩ)	⑥ : DC0-1mA (7kΩ)		
K	② - ⑤	⑦ : 0-1,000 ⑧ : 0-1,200	⑦ : DC0-5mA (2.4kΩ)	⑦ : DC0-5mA (1.4kΩ)	① : AC100V+10%, -15%, 50/60Hz ② : AC110V+10%, -15%, 50/60Hz ③ : AC200V+10%, -15%, 50/60Hz ④ : AC220V+10%, -15%, 50/60Hz ⑤ : DC24V+10%, -15%,	
			⑧ : DC0-10mA (1.2kΩ)	⑧ : DC0-10mA (700Ω)		
E	① - ⑤	⑨ : 0-1,400 ⑩ : other than those above	⑨ : DC0-16mA (750Ω)	⑨ : DC0-16mA (430Ω)		
			⑩ : DC1-5mA (2.4kΩ)	⑩ : DC1-5mA (1.4kΩ)		
J	① - ⑤	⑪ : DC4-20mA (600Ω) ⑫ : other than those above	⑪ : DC4-20mA (600Ω)	⑪ : DC4-20mA (350Ω)		
			⑫ : other than those above	⑫ : other than those above		
T	① - ②	⑪ : DC4-20mA (800Ω) ⑫ : DC1-5V(200kΩ) With output switching function	⑪ : DC4-20mA (800Ω)	⑪ : DC1-5V (1kΩ)		
			⑫ : DC1-5V(200kΩ)			

Open of current output: even if the current output terminal is used in a state of regular open, there is no problem. Also, a voltage of approx. 25V occurs on the output terminal. please consult with us for N thermocouple.

Built-in linearizer

Thermal electromotive force of a thermocouple is not proportional to temperature. It is the linearizer that converts thermal electromotive force into an output proportional to temperature.

Built-in burnout

The device detects disconnection of thermocouple and does scale-out of output to positive (+) side. Scale-out to negative (-) side is also manufacturable if specified.

Built-in cold junction compensation

In principle, a thermocouple and compensating wire generate a thermal electromotive force equivalent to $(T_1 - T_2) \cdot V$. A sensor for compensation RJC compensates for thermal electromotive force equivalent to $V(T_2)$. In addition, the sensor for compensation is connected to terminal part (5, 6), and compensates for the terminal temperature as the temperature of input terminal (4, 6).

Compensating lead wire

A compensating lead wire compensates temperature difference between thermocouple terminals and transducer terminals. Because color (material) of compensating wire varies according to thermocouple type, choose a compensating lead wire in accordance with thermocouple. Match positive and negative polarities when connecting.

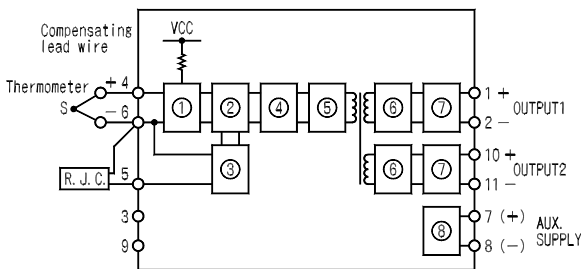
External resistance range

An External resistance range is the resistance value of a reciprocating circuit which consists of thermocouple connected to the transducer, compensating wire, connecting wires and so on. Use the product within an external resistance range less than or equal to 500Ω reciprocally.

Input wiring

Because signal of input wiring is very weak, try to make the wirings away from noise sources such as an electrical power line, a precipitous voltage or a line with current fluctuation.

Block diagram



- Burnout detecting circuit
- High input resistance amplifying circuit
- Ambient temperature correction circuit
- Linearizer circuit
- Pulse width modulation circuit
- Pulse width demodulation circuit
- Output circuit
- Insulated power source circuit

Purchase specifications

