§Small-sized plug-in transducer§

2-output type *Resistance temperature transducer*

FWRH

■ Application

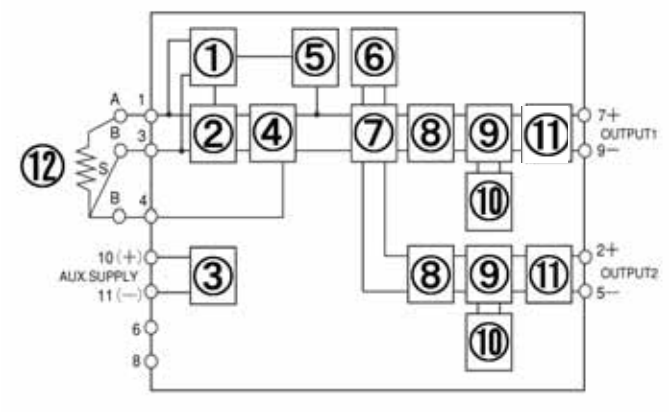
By inputting resistance value of a 3 conducting wire thermal resistance based on the JIS, the device insulates input and output, and then converts thermal electromotive forces into an output proportional to temperature. Because this transducer can extract two insulated outputs, control and monitor can be done by a single unit. Up to 16 units can be housed in an installation base.

■ Feature

29.5×76×125mm/180g

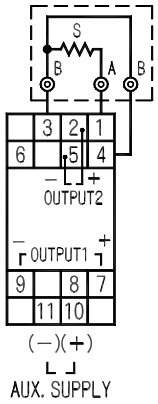
1. Compact and high withstand voltage.
2. Withstand voltage between input/output/auxiliary supply/outer case is AC2, 000V (50/60Hz) for 1 min..
3. Withstand voltage between outputs is AC500V (50/60Hz) for 1 min..
4. Constant voltage/current output type. No need to adjust the product if it operates within load resistance range.
5. A LED can confirm status of electric power applied.
6. Zero/span of 1st and 2nd output can be adjusted individually. (±2% adjustable)
7. Plus (+) or minus (-) burnout can be specified.
8. 3-conducting wire type

■ Block Diagram



① Specified current configuration circuit
② Burnout detecting circuit
③ Insulated power source circuit
④ Differential amplifying circuit
⑤ Linearized circuit
⑥ Oscillating circuit
⑦ Pulse width modulation circuit
⑧ Photo coupler insulation
⑨ Pulse width demodulation circuit
⑩ Reference voltage
⑪ Output circuit
⑫ thermal resistance

■ Connection diagram (socket)



●Specified current

Specified current is a current flowing into a thermal resistance. Change of resistance value can be measured by voltage drop caused by the specified current. Standard specified current is 2mA.

●External conducting wire resistance range

External conducting wire resistance is the conducting wire resistance value which is the result of subtracting the resistance value of objective resistance element. As an influence of external conducting wire resistance, it compensates when resistance values of all conducting wires are equivalent, but it becomes error if resistance values of all conducting wires are different. Taking the variousness of conducting wires into consideration, Use it in a range less than or equal to 50 Ω per 1 line.

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2-output type *Resistance temperature transducer*

■ Specification

● How to specify

Type name **FWRH** - Specification code □□□ □ □ □ □ □

Kind of thermal resistance	Input	1st Output (load resistant)	2nd Output (load resistant)	Auxiliary supply	Power fuse	Burn out	Common specification
1: Pt100Ω at 0℃ Temperature span ≧50℃ Specified current: 2mA 2: Pt50Ω at 0℃ Temperature span ≧100℃ Specified current: 2mA 3: JPt100Ω at 0℃ Temperature span ≧50℃ Specified current: 2mA Z: other than those above *1 (See product range)	A1 :0-50℃ A2 :0-60℃ A3 :0-80℃ A4 :0-100℃ A5 :0-120℃ A6 :0-150℃ A7 :0-200℃ A8 :0-300℃ B1 :-10-+40℃ B2 :-10- +50℃ B3 :-10- +60℃ C1 :-20-+40℃ C2 :-20-+50℃ C3 :-20-+60℃ C4 :-20-+80℃ C5 :-20-+100℃ C6 :-20-+120℃ D1 :-30-+50℃ D2 :-30- +60℃ D3 :-30- +80℃ E1 :-50-+50℃ E2 :-50-+60℃ E3 :-50-+80℃ E4 :-50-+100℃ E5 :-50-+120℃ E6 :-50-+150℃ F1 :-70-+30℃ G1 :-100-+100℃ ZZ :other than those above *1 (See product range)	1:DC0-100mV (≧200Ω) 2:DC0-1V (≧200Ω) 3:DC0-5V (≧600Ω) 4:DC0-10V (≧2kΩ) 5:DC1-5V (≧600Ω) A:DC0-1mA (≦10kΩ) B:DC0-5mA (≦2kΩ) C:DC0-10mA (≦1kΩ) D:DC0-16mA (≦600Ω) E:DC1-5mA (≦3kΩ) F:DC4-20mA (≦750Ω) Z :other than those above *1 (See product range)	1:DC0-100mV (≧200Ω) 2:DC0-1V (≧200Ω) 3:DC0-5V (≧1kΩ) 5:DC1-5V (≧1kΩ) A:DC0-1mA (≦7kΩ) B:DC0-5mA (≦1.4kΩ) C:DC0-10mA (≦700Ω) D:DC0-16mA (≦430Ω) E:DC1-5mA (≦1.4kΩ) F:DC4-20mA (≦350Ω) Z :other than those above *2 (See product range)	F : AC/DC80-264V Rated Voltage AC100/110V 50/60Hz AC200/220V 50/60Hz DC100/110V 5 :DC24V (DC19-30V)	1: With-out fuse 2: with fuse	1: plus 2: minus	Conversion accuracy: ±0.3% Temperature characteristics: 0.3%/10℃ Response time: ≦0.5s/90% Burnout time: ≦5s Allowable conducting wire resistance: ≦50Ω/line Consumption VA: At AC110V: 4.5VA At AC220V: 5.5VA At DC110V: 2.5W At DC24V: 2.5W Weight: Without socket: approx.130g With socket: approx.180g

***1** Consult with us for specification other than those indicated in the table above.

Product Range (including special handling)

Input		1st Output	2nd Output
Ni 508.4Ω: ≧50℃ specified current: 1mA) Cu 100Ω : ≧50℃ (specified current: 2mA) Cu 50Ω : ≧100℃ (specified current: 2mA)	Pt: to 850℃ JPt: to 500℃	Current output: 1mA-20mA Voltage output: 10mV-10V *3	Current output: 1mA-20mA Voltage output: 10mV-10V *2 *3

*2 2nd output: output more than 5.1V but less than 10V is subject to special handling. (Load current 2mA).
*3 Plus/minus output is not manufacturable.