

Thermistor Temperature Sensors

Type: **ERTW**
ERTS
ERTA



This is used as a temperature detector for temperature control or temperature indication of heating parts for automobiles and industrial equipment. Owing to its sealed construction and high vibration resistance, it has high precision in temperature detection. Various types are available in accordance with application.

■ Features

- Superiorly high precision in temperature detecting
- Highly reliable sealed construction
- High vibration resistance and easy installation



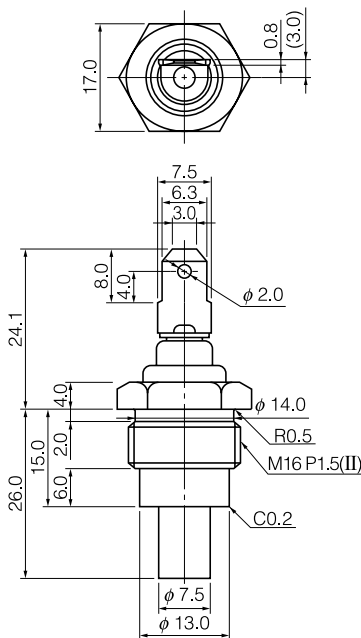
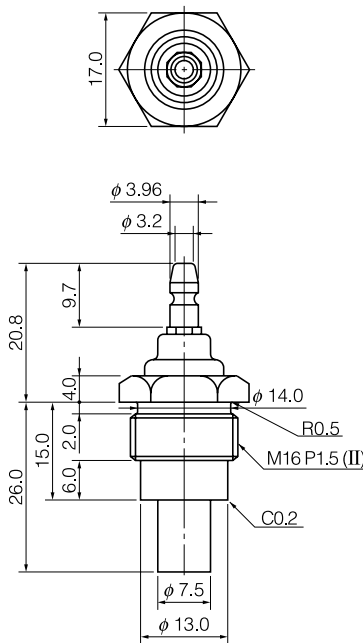
■ Recommended Applications

- Automobiles
- Boats
- Agricultural machines
- Boilers



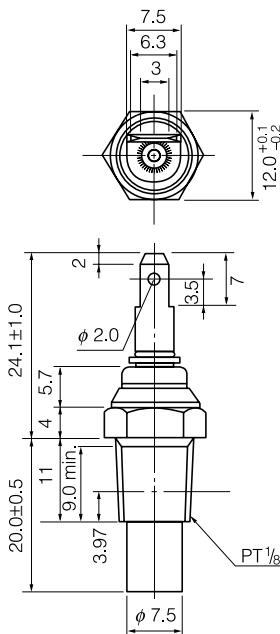
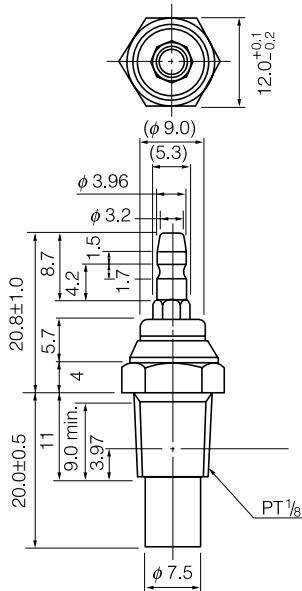
■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11	12
E	R	T									
Product Code			Product Type		Shape/ Construction		Terminal	Resistance R ₂₅ (Ω)		Option	



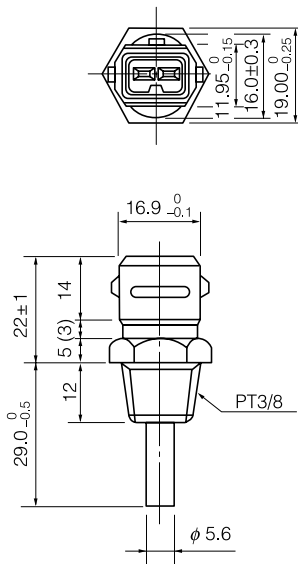
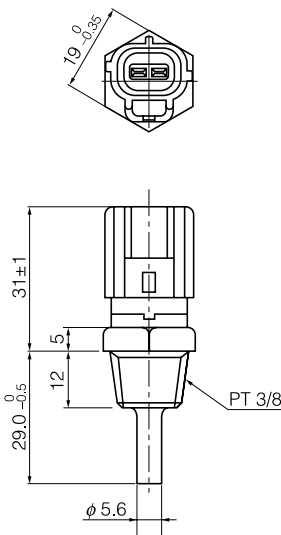
■ Ratings and Characteristics

Type	W208P Series	W208G Series												
Item	ERTW208P Type	ERTW208G Type												
Appearance														
Dimensions in mm (not to scale)														
Resistance	<table><tr><th>Temperature (°C)</th><th>Resistance (Ω)</th></tr><tr><td>80.0±0.2</td><td>118±6</td></tr><tr><td>105.0±0.3</td><td>42.0±2.5</td></tr></table>	Temperature (°C)	Resistance (Ω)	80.0±0.2	118±6	105.0±0.3	42.0±2.5	<table><tr><th>Temperature (°C)</th><th>Resistance (Ω)</th></tr><tr><td>80.0±0.2</td><td>118±6</td></tr><tr><td>105.0±0.3</td><td>42.0±2.5</td></tr></table>	Temperature (°C)	Resistance (Ω)	80.0±0.2	118±6	105.0±0.3	42.0±2.5
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80.0±0.2	118±6													
105.0±0.3	42.0±2.5													
Heat Dissipation Constant	60 mW/°C	60 mW/°C												
Maximum Permissible Power	300 mW	300 mW												
Operating Temperature Range	-30 to +130 °C	-30 to +130 °C												

■ Ratings and Characteristics



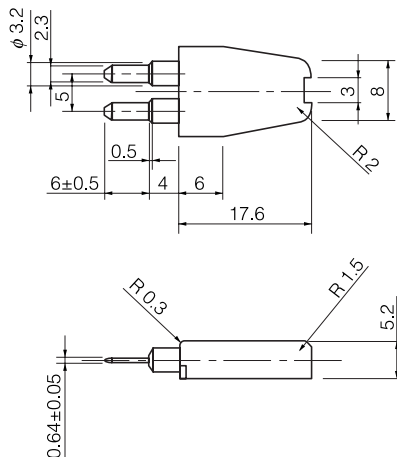
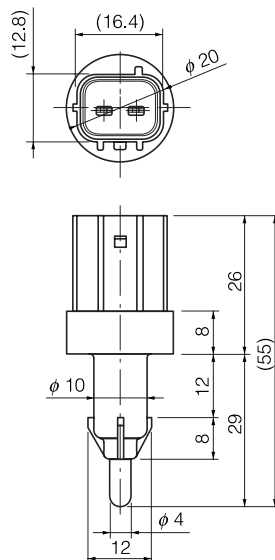
Type		W101 Series													
Item		ERTW101P Type	ERTW101G Type												
Appearance															
Dimensions in mm (not to scale)															
Resistance		<div>ERTW101P801</div> <table><tr><th>Temperature (°C)</th><th>Resistance (Ω)</th></tr><tr><td>50.0±0.2</td><td>226.0^{+33.6}_{-36.6}</td></tr><tr><td>115.0±0.3</td><td>26.40^{+1.71}_{-2.21}</td></tr></table>	Temperature (°C)	Resistance (Ω)	50.0±0.2	226.0 ^{+33.6} _{-36.6}	115.0±0.3	26.40 ^{+1.71} _{-2.21}	<div>ERTW101G461</div> <table><tr><th>Temperature (°C)</th><th>Resistance (Ω)</th></tr><tr><td>80.0±0.2</td><td>51.9^{+4.9}_{-4.4}</td></tr><tr><td>100.0±0.3</td><td>27.4^{+1.9}_{-1.2}</td></tr></table>	Temperature (°C)	Resistance (Ω)	80.0±0.2	51.9 ^{+4.9} _{-4.4}	100.0±0.3	27.4 ^{+1.9} _{-1.2}
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Maximum Permissible Power		300 mW	300 mW												
Operating Temperature Range		-30 to +130 °C	-30 to +130 °C												

■ Ratings and Characteristics

Item	Type	S07 Series	S08 Series																
		ERTS07D202C	ERTS08D202B																
Appearance																			
Dimensions in mm (not to scale)																			
Resistance		<table><tr><th>Temperature (°C)</th><th>Resistance (kΩ)</th></tr><tr><td>-20.0±0.2</td><td>16.1±1.6</td></tr><tr><td>20.0±0.2</td><td>2.37±0.24</td></tr><tr><td>80.0±0.2</td><td>0.290±0.032</td></tr></table>	Temperature (°C)	Resistance (kΩ)	-20.0±0.2	16.1±1.6	20.0±0.2	2.37±0.24	80.0±0.2	0.290±0.032	<table><tr><th>Temperature (°C)</th><th>Resistance (kΩ)</th></tr><tr><td>-20.0±0.2</td><td>15.48±1.35</td></tr><tr><td>20.0±0.2</td><td>2.45±0.14</td></tr><tr><td>110.0±0.2</td><td>0.1471±0.002</td></tr></table>	Temperature (°C)	Resistance (kΩ)	-20.0±0.2	15.48±1.35	20.0±0.2	2.45±0.14	110.0±0.2	0.1471±0.002
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Heat Dissipation Constant		—	—																
Maximum Permissible Power		10 mW	10 mW																
Operating Temperature Range		-30 to +120 °C	-30 to +120 °C																

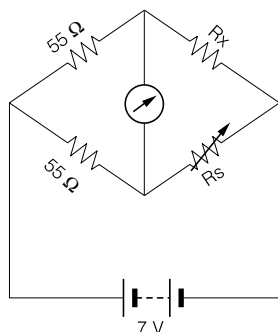
Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Ratings and Characteristics

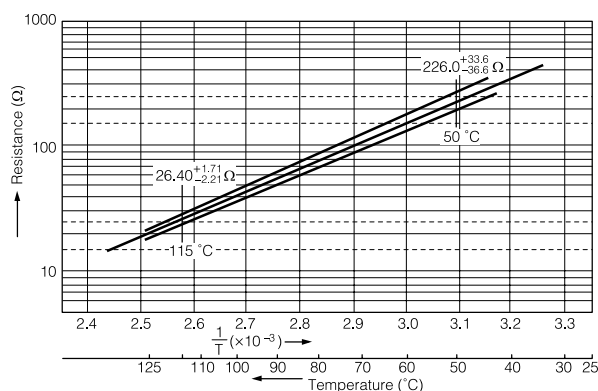
Item \ Type	A57 Series	A59 Series														
	ERTA57D202	ERTA59D202														
Appearance																
Dimensions in mm (not to scale)																
Resistance	<table><tr><th>Temperature (°C)</th><th>Resistance (kΩ)</th></tr><tr><td>20.0±0.2</td><td>2.5±0.075</td></tr><tr><td>80.0±0.2</td><td>0.325^{+0.023}_{-0.022}</td></tr></table>	Temperature (°C)	Resistance (kΩ)	20.0±0.2	2.5±0.075	80.0±0.2	0.325 ^{+0.023} _{-0.022}	<table><tr><th>Temperature (°C)</th><th>Resistance (kΩ)</th></tr><tr><td>-20.0±0.2</td><td>17.9±2.7</td></tr><tr><td>40.0±0.2</td><td>1.16±0.12</td></tr><tr><td>100.0±0.2</td><td>0.156±0.008</td></tr></table>	Temperature (°C)	Resistance (kΩ)	-20.0±0.2	17.9±2.7	40.0±0.2	1.16±0.12	100.0±0.2	0.156±0.008
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40.0±0.2	1.16±0.12															
100.0±0.2	0.156±0.008															
Heat Dissipation Constant	—	—														
Maximum Permissible Power	10 mW	10 mW														
Operating Temperature Range	-30 to +150 °C	-30 to +120 °C														

■ Test Circuit Diagram and Resistance vs. Temperature

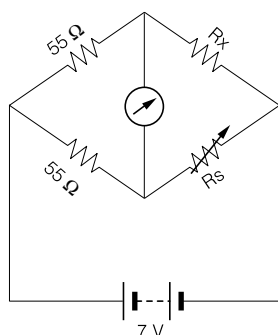
ERTW101P801



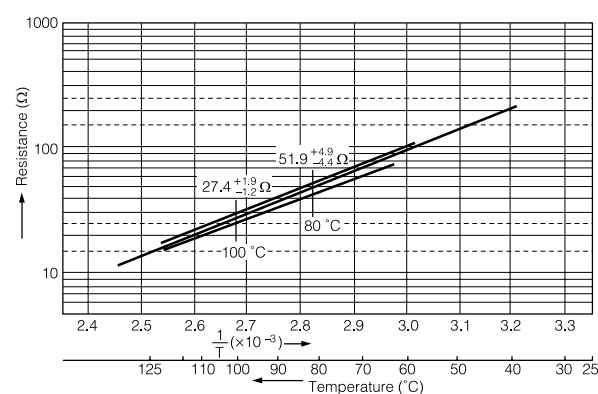
Test Circuit Diagram



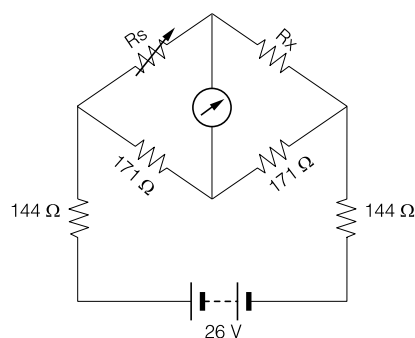
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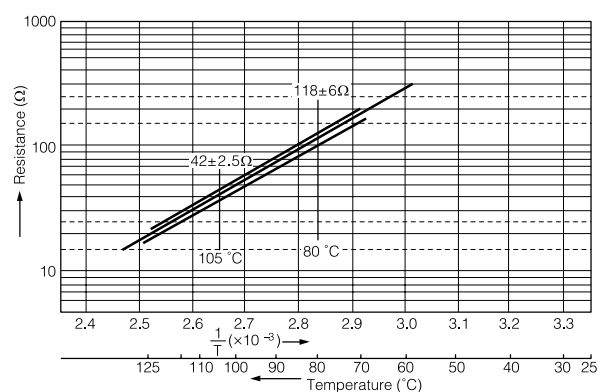
Test Circuit Diagram



ERTW208P(G)112



Test Circuit Diagram



■ Application Notes

- Operate the sensor under the specified maximum permissible electric power. Otherwise, it generates heat, which may cause malfunction and deterioration in the characteristics.
- Resistance values of the sensor shall be measured by the specified measuring circuit, described in the individual specification.
- Do not operate the sensor above the Operating Temperature Range.
- When attaching the sensor with a screw, do not touch the terminal area. Do not apply excessive torque and pressure when screwing, otherwise they will damage the product and malfunction.
- The sensor may be damaged or deteriorated when dropped or exposed to a large impact. Excessive shock and impact shall not be applied.