Panasonic
INDUSTRY

Thermistor Temperature Sensors (Automobile use)

ERTSW, ERTSA type

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

Features

- Superior, high precision, temperature detection
- Highly reliable sealed construction
- High vibration resistance and easy installation
- ELV compliant

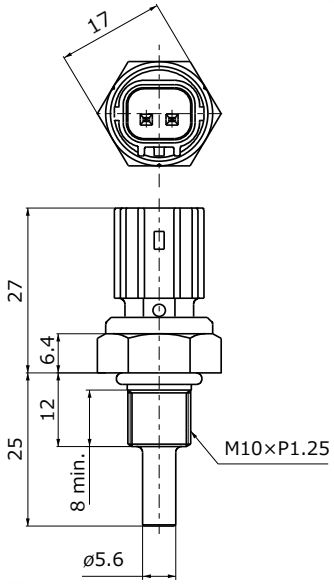
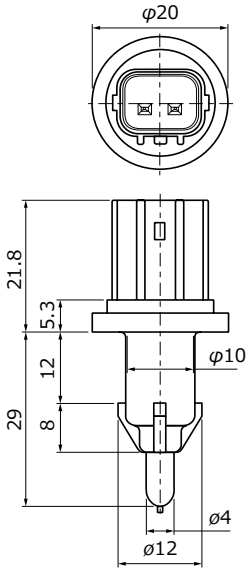
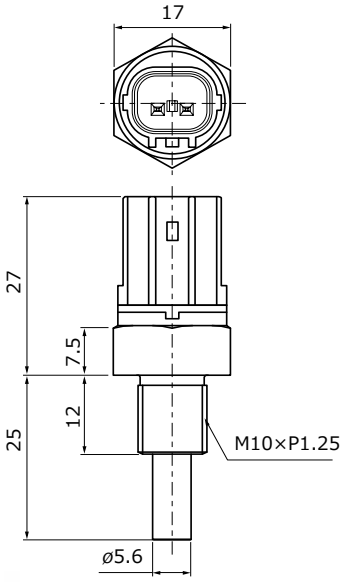
Recommended applications

- Automobiles
- Boats
- Agricultural machines
- Boilers

Explanation of part numbers

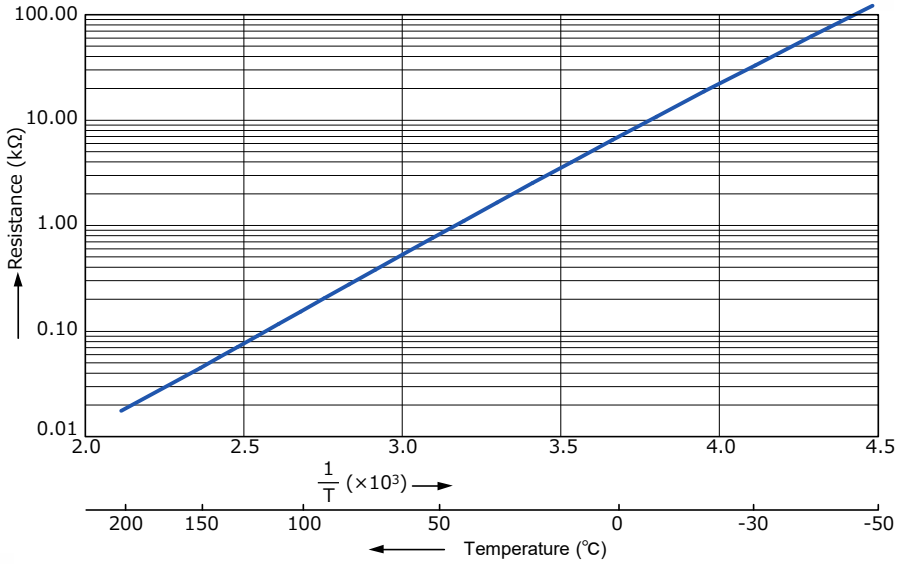
1	2	3	4	5	6	7	8	9	10	11	12
E	R	T									
Product code			Product type		Shape/ construction		Terminal	Resistance R_{25} (Ω)			Option

Ratings and characteristics

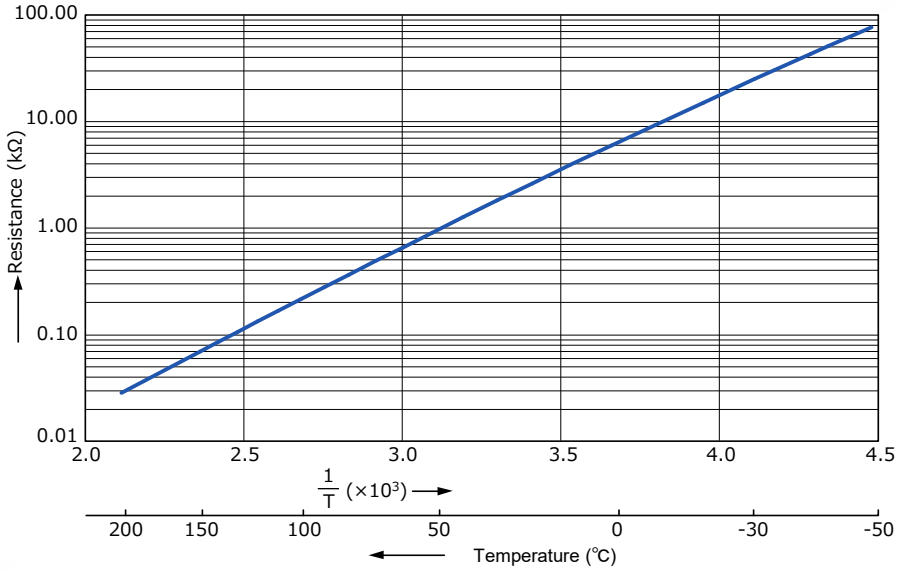
Part No.	Water temperature sensor	Intake-air temperature sensor	Oil temperature sensor
	ERTSW06D□□□	ERTSA11D□□□	ERTSW04D□□□
Appearance			
Dimensions in mm (not to scale)			
Resistance	(Example) ERTSW06D202 Temperature (°C) / Resistance (kΩ) –20±0.2 / 17.9±2.7 40±0.2 / 1.16±0.12 100±0.2 / 0.156±0.008	(Example) ERTSA11D202 Temperature (°C) / Resistance (kΩ) –20±0.2 / 17.9±2.7 40±0.2 / 1.16±0.12 100±0.2 / 0.156±0.008	(Example) ERTSW04D222 Temperature (°C) / Resistance (kΩ) –20±0.1 / 15.13±1.21 20±0.1 / 2.645±0.133 100±0.1 / 0.2156±0.0054 200±0.2 / 0.0283±0.0020
Heat dissipation constant	—	—	—
Maximum permissible power	10 mW	10 mW	10 mW
Operating temperature range	–30 to +120 ℃	–30 to +120 ℃	–30 to +200 ℃

Resistance vs. Temperature

(Example) ERTSW06D202, ERTSA11D202



(Example) ERTSW04D222



Application notes

- Using the sensor beyond the Maximum Permissible Power may generate excessive heat and deteriorate the performance and characteristics of the sensor.
- The rated Resistance Values are measured using specifi c testing circuits. Characteristics of the sensor vary when using other testing circuits in different conditions.
- Do not use the sensor beyond the Operating Temperature Range.
- Do not touch the terminal area when screwing the sensor. Impressing a strong force upon screws can damage the sensor and deteriorates its performance.
- Dropping or impressing a strong force may damage the sensor. Do not use the sensor if once dropped.

Safety and Legal Matters to Be Observed

Product specifications and applications

■ Please be advised that this product and product specifications are subject to change without notice for improvement purposes. Therefore, please request and confirm the latest delivery specifications that explain the specifications in detail before the final design, or purchase or use of the product, regardless of the application. In addition, do not use this product in any way that deviates from the contents of the company's delivery specifications.

■ Unless otherwise specified in this catalog or the product specifications, this product is intended for use in general electronic equipment (AV products, home appliances, commercial equipment, office equipment, information and communication equipment, etc.).
When this product is used for the following special cases, the specification document suited to each application shall be signed/sealed (with Panasonic and the user) in advance..These include applications requiring special quality and reliability, wherein their failures or malfunctions may directly threaten human life or cause harm to the human body (e.g.: space/aircraft equipment, transportation/traffic equipment, combustion equipment, medical equipment, disaster prevention/crime prevention equipment, safety equipment, etc.).

Safety design and product evaluation

■ Please ensure safety through protection circuits, redundant circuits, etc., in the customer's system design so that a defect in our company's product will not endanger human life or cause other serious damage.

■ This catalog shows the quality and performance of individual parts. The durability of parts varies depending on the usage environment and conditions. Therefore, please ensure to evaluate and confirm the state of each part after it has been mounted in your product in the actual operating environment before use.
If you have any doubts about the safety of this product, then please notify us immediately, and be sure to conduct a technical review including the above protection circuits and redundant circuits at your company.

Laws / Regulations / Intellectual property

■ The transportation of dangerous goods as designated by UN numbers, UN classifications, etc., does not apply to this product. In addition, when exporting products, product specifications, and technical information described in this catalog, please comply with the laws and regulations of the countries to which the products are exported, especially those concerning security export control.

■ Each model of this product complies with the RoHS Directive (Restriction of the use of hazardous substances in electrical and electronic equipment) (2011/65/EU and (EU) 2015/863). The date of compliance with the RoHS Directive and REACH Regulation varies depending on the product model.
Further, if you are using product models in stock and are not sure whether or not they comply with the RoHS Directive or REACH Regulation, please contact us by selecting "Sales Inquiry" from the inquiry form.

■ During the manufacturing process of this product and any of its components and materials to be used, Panasonic does not intentionally use ozone-depleting substances stipulated in the Montreal Protocol and specific bromine-based flame retardants such as PBBs (Poly-Brominated Biphenyls) / PBDEs (Poly-Brominated Diphenyl Ethers). In addition, the materials used in this product are all listed as existing chemical substances based on the Act on the Regulation of Manufacture and Evaluation of Chemical Substances.

■ With regard to the disposal of this product, please confirm the disposal method in each country and region where it is incorporated into your company's product and used.

■ The technical information contained in this catalog is intended to show only typical operation and application circuit examples of this product. This catalog does not guarantee that such information does not infringe upon the intellectual property rights of Panasonic or any third party, nor imply that the license of such rights has been granted.

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