EC3032, Encapsulated Precision Pt Temperature Sensor (e-Motor-Sensor)

Temperature range -50 °C to +200 °C, temporary up to +250 °C

- Robust semi-rigid protection
- Internal protection IP67 and IP68
- Pt1000 standard in F 0.3 (B)
- Wide operation range: -50 °C to 200 °C

The Encapsulated Precision Temperature Sensor EC3032 was originally designed as a precise, robust temperature sensor for high-end industrial e-motors. Its properties make it the ideal sensing solution in e-motors, industrial automation, analytical equipment, or EV charging plugs. The EC3032 is a standard product.

In principle, the products can also be used in automotive applications, in this case Heraeus will check upon the request of the customer, whether additional requirements can be met (e.g. IMDS, PPAP).

Nominal Resistance R_0 [Ω]	Tolerance Class	Order Number	Packaging
Pt1000	F 0.3 (B) according to DIN EN 60751	5016951	Plastic bag

Temperature Range of Tolerance Class
Tolerance Class F 0.3 (B)   -50 °C to +200 °C
Temporary up to 250 °C (up to 50 hours)

Temperature Coefficient
TCR = 3850 ppm/K

Response Time (Water v = 0.3 m/s)
Typical response time $t_{0.5}$ = 3.1 s
          $t_{0.9}$ = 8.1 s

Measuring Current
Pt1000 Ω: 0.1 to 0.3 mA
(self-heating has to be considered)

Long-Term Stability of the Sensor Element
The drift of the resistance value at 0 °C after a storage for 1000 hours in air at the declared upper temperature limit is not more than the tolerance value of the declared tolerance class according DIN EN 60751.

Self-Heating of the Sensor Element
0.4 K/mW at 0 °C

Connection Technology
Crimping, Welding, Soft Soldering, Brazing, Clamping

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Page 1 of 2

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Housing

Semi-rigid fluorocarbon
Diameter = 3.2 +0.2/-0.4 mm
Length LH = 30 ±5 mm

Internal Protection

IP67 and IP68 according to DIN EN 60529

Cable

PTFE insulated, 24AWG (0.24 mm²) stranded Ni plated Cu
Total Length L = 410 ±10 mm

Cable Resistance

0.081 Ω/m (0.025 Ω/ft) per strand

Cable Pull Force

Approximately 100 N, measured between cables and sensor housing at room temperature

Dielectric Strength of the Sensor Head

6KV AC, 60 sec

Customized Options available for High Volume Application

- Wire length L
- Sensor housing length LH
- Sensor housing diameter D
- Sensor resistance
- Sensor tolerances
- Connectors

Application Examples

- E-motor and stator protection
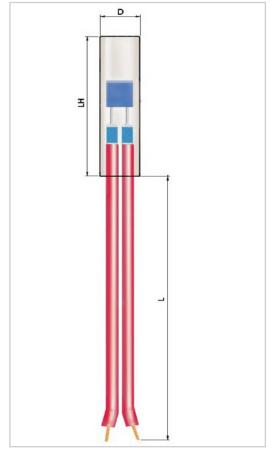- Industrial automation
- Analytic equipment
- Charging connectors

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