

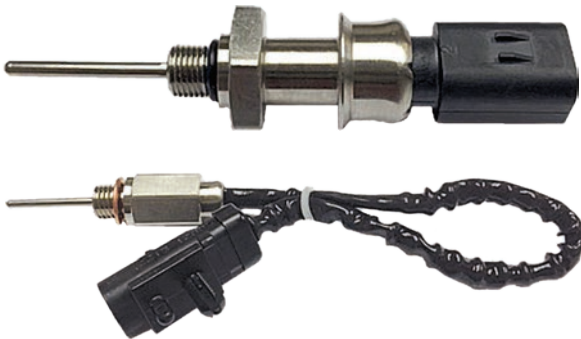


Application Spotlight

Thermistor Stability Benchmarking (2)

Exhaust Gas Recirculation (EGR) Applications

- ❖ Typical Tolerance: $\pm 5^{\circ}\text{C}$ at 300°C
- ❖ Typical Tolerance: $\pm 1^{\circ}\text{C}$ at 150°C
- ❖ Accuracy/stability is essential for efficient combustion control.
- Emission Concerns – Sensor interprets air temperature incorrectly, creating a difference between the actual control temperature and the engine design temperature emission mapping value.
- Engine Performance – Sensor interprets air temperature incorrectly, causing the engine to operate to a condition not optimized for peak performance and efficiency.
- Engine Life – Sensor interprets air temperature incorrectly, resulting in excessive engine temperature, which would decrease engine components and fluid life.



Resin-Coated Thermistor Elevated Temperature Stability

Supplier	300°C @ 1000 hours		250°C @ 1000 hours		Performance Ranking
	Δ R25 %	Δ °C	Δ R25 %	Δ °C	
Amphenol	0.27	0.062	0.35	0.080	1
E	0.40	0.091	-0.46	0.105	2
S	-0.64	0.146	-0.64	0.146	3
K	0.69	0.157	1.26	0.287	4
V	-2.58	0.588	-2.5	0.57	5
K	64.8	14.77	72.7	16.57	6

AAS Advantage

- Amphenol supplies both glass-encapsulated and resin-coated thermistors for EGR systems, based on temperature applications. i.e. $\pm 5^{\circ}\text{C}$ at $250^{\circ}\text{C}/300^{\circ}\text{C}$ and $\pm 1^{\circ}\text{C}$ at 150°C , typical high temperature EGR tolerances.
- Amphenol thermistors have excellent stability. The glass-encapsulated components show 0.062°C measurement accuracy at 300°C and 0.080°C at 250°C after 1000 hours. The resin-coated parts show 0.043°C accuracy at 170°C after 1000 hours.

Resin-Coated Thermistor Elevated Temperature Stability

Supplier	170°C @ 1000 hours		Performance Ranking
	Δ R25 %	Δ °C	
Amphenol	-0.19	0.043	1
V	-0.21	0.048	2
A	1.57	0.358	3
E	1.85	0.422	4
B	2.65	0.604	5
S	4.6	1.049	6
K	5.54	1.263	7

Amphenol
Advanced Sensors

www.amphenol-sensors.com

© 2018 Amphenol Corporation. All Rights Reserved. Specifications are subject to change without notice. Other company names and product names used in this document are the registered trademarks or trademarks of their respective owners.