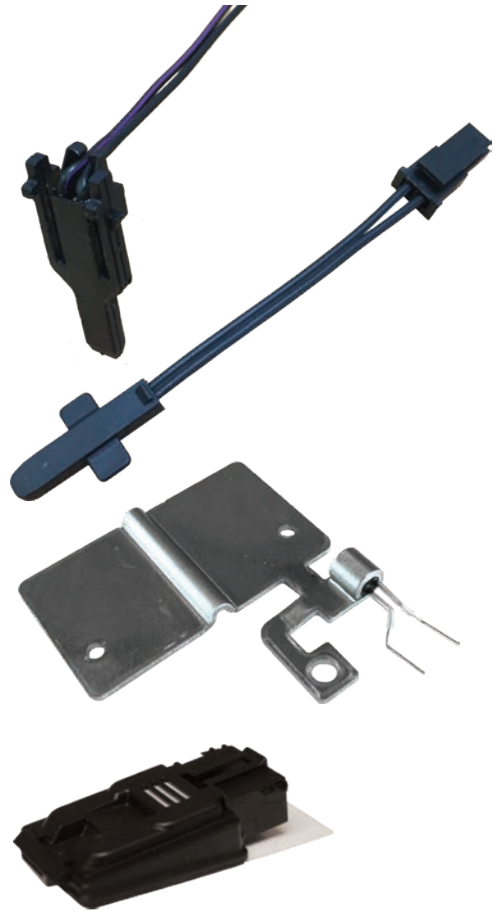
THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Application Spotlight

Thermistor Stability Benchmarking (3)



Battery Temperature Sensing - EV/HEV/PHEV

Typical Tolerance: ±0.4°C at 45°C

Accuracy/stability is essential for battery protection.

- Unstable thermistors may not detect over-temperature when the battery pack is charging. The Battery Management System (BMS) may not deliver sufficient charge, or the battery may suffer permanent damage.
- Unstable thermistors may diminish efficiency through partial charging. Partial battery power causes reduced vehicle performance, lifetime and mileage.

Defog Temperature Sensor

Typical Tolerance: ± 0.23°C at 25°C

Accuracy/stability is essential to avoid cabin moisture condensation.

- Thermistor in defog sensor detects windshield temperature (Tg). Inaccurate Tg detection will cause the HVAC system to incorrectly calculate the dew point temperature of the windshield.
- A fogged windshield reduces visibility for the driver, especially under limited light and poor weather conditions.

AAS Advantage

- Amphenol component accuracy supplied at typical EV battery tolerance of ±0.4°C at 45°C, and typical defog temperature sensors of ±0.23°C at 25°C.
- Amphenol resin-coated devices have excellent stability performance at elevated temperature 100°C, showing higher NTC stability at 45°C operational temperature and 25°C cabin temperature.

Temperature Stability of Resin-Coated Thermistors

Supplier	100°C @ 1000 hours		Performance Ranking
	Δ R25 %	Δ °C	
Amphenol	**0.08**	**0.018**	**1**
A	0.16	0.036	2
B	0.22	0.050	3
C	0.24	0.055	4
D	0.30	0.068	5
E	0.62	0.141	6

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