



Relative Humidity and Temperature (RHS) Sensor

AUTOMATIC CABIN HUMIDITY AND TEMPERATURE MONITORING

A Relative Humidity Sensor (RHS) makes vehicles more comfortable, saves fuel and promotes safer driving by automatically signaling the Climate Control System to optimize compressor usage and to prevent windshield fogging.

Sensata Technologies has been a leading global supplier of HVAC sensors for over 15 years.

Sensata Technologies offers a relative humidity sensor with an integrated temperature function. By utilizing innovative thin-film technology, Sensata sets the standard for accurate RH sensing, with fast response time, and durability needed in automotive applications. The sensor outputs an accurate temperature and relative humidity measurement to the HVAC control module to optimize the efficiency of a vehicle's climate control system. This optimization results in improved customer comfort within the cabin improved vehicle fuel economy, and anti-fogging strategies. Sensata offers flexible packaging options for mounting locations in the instrument panel or the windshield.

Features & Benefits	Benefits	Applications
Customized sensor output	Linear voltage output (0-5 V) 0-98% RH scale Temperature compensated Proven automotive EMC performance 15+ years of proven & reliable electronics	Safety • Anti-fogging HVAC system optimization
Thin film polymer technology	High accuracy Fast response time Long term stability Ability to recover quickly from condensation	• Tighter compressor control for lower emissions • Reduced heater core usage for Hybrid vehicles • Fuel economy Customer comfort
Robust custom packaging	Flexible packaging, easy integration Resistance to chemical & physical contaminants	• Cabin RH control (dry skin/eyes)

Technical Specifications

Performance	Electrical
Operating Range 0-98% RH	Supply Voltage 5 ±0.25 V
Operating Temp -40°C to +85°C	Current Draw 10 mA max.
Initial Accuracy ±4.0 RH*	Output Range 0-5 V
Drift over 10 year life ±4% RH*	Transfer function configurable to customer requirements
Response Time (tau) <10 seconds	
	Temp Sensor
	NTC Thermistor
	Accuracy to ± .5°C
	Response Time <30 seconds

*Stated accuracy quoted over -5°C to +30°C

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Packaging Options

Instrument Panel (IP) Mount



- Small package hidden in IP
- Flexible integration with interior design
- Optimally positioned in airflow return
- * Air temp thermistor to calculate dew point for anti-fog application

Windshield (WS) Mount



- Adhesively mounted to windshield
- Thermistor thermally coupled to windshield glass
- Flexible connector integration
- PTFE filter



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Sensata Technologies

529 Pleasant Street, MS B41
Attleboro, MA 02703-2964
Phone 1-508-236-3800
email: auto-mktg@sensata.com
www.sensata.com

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