Relative Humidity and Temperature (RHS) Sensor

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.

**Features & Benefits**

- Customized sensor output
- Thin film polymer technology
- Robust custom packaging

**Benefits**

- Linear voltage output (0-5 V)
- 0-98% RH scale
- Temperature compensated
- Proven automotive
- EMC performance
- 15+ years of proven & reliable electronics
- High accuracy
- Fast response time
- Long term stability
- Ability to recover quickly from condensation
- Flexible packaging, easy integration
- Resistance to chemical & physical contaminants

**Applications**

- Safety
  - Anti-fogging
- HVAC system optimization
  - Tighter compressor control for lower emissions
  - Reduced heater core usage for Hybrid vehicles
  - Fuel economy
  - Customer comfort
  - Cabin RH control (dry skin/eyes)

**Technical Specifications**

**Performance**

- Operating Range: 0-98% RH
- Operating Temp: -30°C to 80°C
- Initial Accuracy: ±4.0 RH*
- Drift over 10 year life: ±4% RH*
- Response Time (tau): <10 seconds
- Storage Temp: 40°C to 85°C
  - *Stated accuracy quoted over -5°C to +30°C

**Electrical**

- Supply Voltage: 5 ±0.25 V
- Current Draw: 10 mA max.
- Output Range: 0-5 V
- Transfer function configurable to customer requirements

**Temp Sensor**

- NTC Thermistor
- Accuracy: ±0.5°C
- Response Time: <30 seconds
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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