



## AIR CLASSIFICATION MODULE (ACM)

### *Accurate Gas Detection*

### WHEN SENSATA GOES IN, UNWANTED GASES STAY OUT

Sensata's Air Classification Module (ACM) is highly sensitive and stable in the arena of detecting traffic related gases. Delivered by the world leader in sensors and controls, ACM consistently tracks the presence of potentially harmful gases, and ensures they are removed before passenger detection.

The ACM will be mounted in the air intake of the HVAC unit. The ACM provides an output signal classifying intake air quality and internal diagnostic validation. The technology is based on MEMS sensing elements to determine NO<sub>x</sub>, CO and volatile organic compounds. In order to reduce the intake of undesired levels of unhealthy and unpleasant gases to an acceptable minimum, Sensata's Air Classification Module in MEMS design will provide high sensitivity, high stability and a response time significantly lower (several seconds) than driver or passenger recognition by using state-of-the-art sensitive materials/processes. The Sensata ACM features a microprocessor-based signal conditioning using smart algorithms and flexibility on output protocols.

#### **Features and Benefits**

##### **Accurate Gas Detection**

- Accurate CO/HC and NO<sub>2</sub> gas detection: small steps, also against slowly increasing background concentration
- Fast response time
- No need for airflow into the ACM
- Waterproof
- Very low sensor to sensor variation
- Both classification and ppm level output available
- Real event detection: false/no events minimized, no undesired cross sensitivity
- Proven automotive
- LIN and PWM output

##### **Reliable**

- Stable performance
- Long-term stability
- Ability to recover quickly from condensation

##### **Robust custom packaging**

- Flexible packaging, easy integration
- Resistance to chemical and physical contaminants

#### **Applications**

##### **Safety**

- Keeping toxic gases outside of cabin

##### **HVAC system optimization**

- Automatic flap control
- Filter supervision

##### **Customer comfort**

- Odor detection

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## Accurate Gas Detection

### Technical Specifications

Configuration/Package		Gas Detection Performance		Operating Environment	
Package material	PA	Detectable gases	CO, NO <sub>2</sub> , HC's	Operating temperature range	-40 °C to +85 °C
Size	42.8 x 31.3 x 29.3 mm (outer dimensions)	Concentration range	CO: 0 to 200 ppm NO <sub>2</sub> : 0 to 2 ppm	Storage temperature range	-40 °C to +85 °C
Weight	< 20 g	Limit of detection	CO: 2 ppm NO <sub>2</sub> : 100 ppb	Air velocity range	0.5 to 10 m/s
Connector	MQS - 3 pin - code B	Response time	CO: 1 s NO <sub>2</sub> : 2 s	<b>Electrical Characteristics</b>	
Output type	Open collector PWM or LIN 2.0			Supply voltage	9 to 16.5 Vdc
Environmental protection	P64 + IP67			Power consumption	< 1 W typical

### Typical Configurations



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