DATASHEET

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VEHICLE SENSING SOLUTIONS:

Road Noise Cancellation Sensors with Accelerometer and Microphone (RNC-AM)›

Road Noise Cancellation Sensors with Accelerometer and Microphone (RNC-AM)

Molex RNC-AM Sensors, with A²B technology, convert vehicle chassis vibration and airborne noise into a signal that generates a cancellation soundwave, reducing unwanted noise within the cabin of a vehicle

FEATURES AND ADVANTAGES

Low system latency
Delivers superior noise cancellation because the time between the sensor receiving the vibration and the module receiving the signal is extremely short

IP6K9K Rating
Protects against water and dust ingress in harsh environments

Daisy-chained sensors
Eliminates heavy star-patterned cabling and reduces harness weight of the vehicle

Mates with 1-by-4 sealed Mini50 Connector
Provides 50% space savings over traditional USCAR 0.64mm connectors. Is ideal for vehicle interiors. Delivers superior signal integrity performance

MARKETS AND APPLICATIONS

Automotive
In-cabin noise reduction
Autonomous vehicles
Advanced driver assistance systems (ADAS)

In-Vehicle Cabin

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SPECIFICATIONS

Microphone Technical

Very low distortion:
- <1% total harmonic distortion + noise @ 1kHz

Acoustic overload point: 133 dB
Sensitivity: -46 +/- 2 dBFS @ 1kHz
Noise floor: 29 dBSPL
High signal-to-noise ratio: 65dB(A)
Bandwidth: 45 Hz to >20kHz
Omnidirectional

Accelerometer

Maximum monitored shock load: 16g in all axes
Anticipated sensory frequency range:
- 200 to 500 Hz

Programmable frequency range:
- 500 Hz to 4kHz

Low latency: 150µ maximum at 2kHz bandwidth
Low noise:
- <100µ/√Hz for x- and y-axes
- <150µg/√Hz for z-axis

Digital output: Up to 14 Gbps

Mechanical Technical

Connector interface drawing: Molex drawing 349684800
Mini50 Sealed 1 by 4—see ordering information
Installation force into vehicle position should not exceed 25N
Retention force greater than 15N prior to nut and-screw fastening
Retained in place by an M6 screw and nut
The torque value of screw and nut shall be 10 ±2Nm

Environmental

Temperature classification: -40 to 85˚C
Protection classification: IP6K9K (dust and high-pressure spray) per ISO 20653

Harnessing Expectations

2x jacketed unshielded twisted pairs for 100 Mbps transmission
Twisted pair cable types must comply with SAE-J3117 standard and the Open Alliance Specification for Communication Channel 2.0 = 100BaseT1
Digital matched differential impedance—100 Ohms
Sensor units are daisy-chained together

ORDER INFORMATION

Part No.	Description
213840-0002	Molex Sensor Assembly
34967-4001	1-by-4 Mini50 Sealed Connector, Key A with CPA
34967-4051	1-by-4 Mini50 Sealed Connector, Key A, with Circuits 1 and 2 Plugged (End Node)
34905-6447	CTX50 Sealed Connector, Silver Plated, Large Grip

www.molex.com/link/ancsensors.html

Order No. 987652-4363 USA/0k/GF/2021.09