

Percept Road Noise Cancelling Sensors >

Reducing unwanted road noise helps improve the driving experience and enhances passenger comfort and safety. Percept Road Noise Cancelling (RNC) Sensors deliver real-time monitoring capabilities that enable the vehicle to dynamically adapt to changing conditions for optimal noise reduction.

ADVANTAGES AND FEATURES

Enables the sensor to be placed where needed, protecting against water and dust ingress in harsh environments such as adjacent to the tire

The IP6K9K-rated seal helps ensure reliable operation.

Improves system efficiency

The superior packaging design allows for a clearer signal.

Features high sensitivity to energy sources, allowing sensor placement farther from the energy source if required

The superior packaging design allows for a clearer signal than traditional noise-cancelling sensors, which often suffer from interference and less effective noise isolation.

Offers design flexibility for parallel or perpendicular sensor positioning relative to the ground to enable mechanical mounting to a vehicle and permit a variety of connector orientations and terminal sizes

Various mechanical housing configurations are available.

Reduces the harness weight of the vehicle and eliminates heavy star-pattern cabling

The sensor uses an efficient daisy-chain wiring design.

Permits low latency and results in less time between the sensor receiving vibrations and the module receiving a notification signal

Percept RNC Sensors use the A2B digital communication protocol.

Communication Protocol	A2B
Protection Rating	IP6K9K
Distortion	Max. monitored shock load +/- 16 g
Monitored Frequency Bandwidth	4000Hz
Noise Floor	<100µg/√Hz for x- and y-axes <150µg/√Hz for z-axis
Latency	<150µs
Operating Temperature	-40 to +115°C

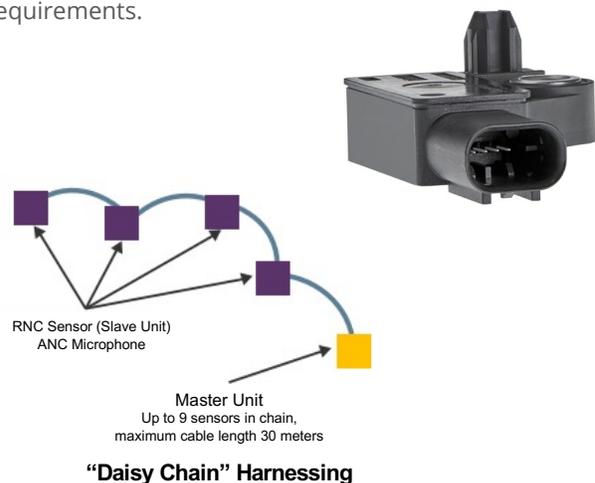
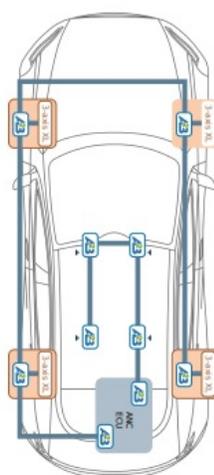


Provides durability in harsh conditions and 50% space savings compared with USCAR 0.64mm connectors

The system's compact USCAR 0.50mm Mini50 and Molex DuraClik connectors meet high-vibration and high-temperature design requirements.

Captures vibration energy transfer from the suspension into the vehicle chassis at the earliest perceptible time

The low latency enables optimal timing of corrective action.



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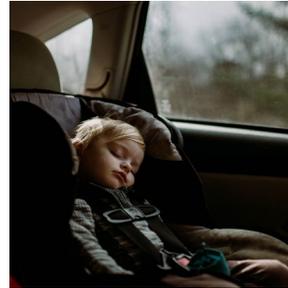
MARKETS AND APPLICATIONS

Automotive and Commercial Vehicles

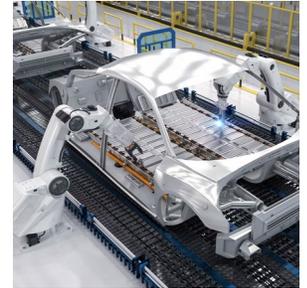
Active noise cancellation systems
Advanced driver-assistance systems (ADAS)
Electric vehicles
In-cabin applications
In-cabin noise reduction systems
Off-highway and construction vehicles



In-Cabin Applications



Active Noise Cancellation Systems



Electric Vehicles

SPECIFICATIONS

Accelerometer

Maximum Monitored Shock Load: 16 g in all axes
Anticipated Sensory Frequency Range: 200 to 500Hz
Programmable Frequency Range: 500Hz to 4kHz
Low Latency: 150µs max. at 2kHz bandwidth
Low Noise:

- <100µg/√Hz for x- and y-axes
- <150µg/√Hz for z-axis

 Digital Output: Up to 14Gbps

Mechanical

Installation Force into Vehicle position (max.): 25N
Retention Force Prior to Nut-and-Screw Fastening: >15N
Axial Pull Force After Fastening (min.): 350N
Retained in Place by M6 Screw and Nut
Torque Value of Screw and Nut: 20 ± 2N*m

Environmental

Operating Temperatures: -40 to +115°C
Protection Classification: IP6K9K
 (dust and high-pressure spray) per ISO 20653
Vibration Classification: On-vehicle spring mass
Chemical Resistance: Exterior body and underbody
Mechanical Shock/Drop: Pothole and collision rated

Harnessing Expectations

2x jacketed unshielded twisted pairs for
100Mbps transmission
Twisted pair cable types must comply with
SAE-J3117 standard and the Open Alliance
Specification for Communication Channel
2.0 = equivalent to 100BaseT1
Digital Matched Differential Impedance: 100 Ohms
Sensor units are daisy-chained together

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