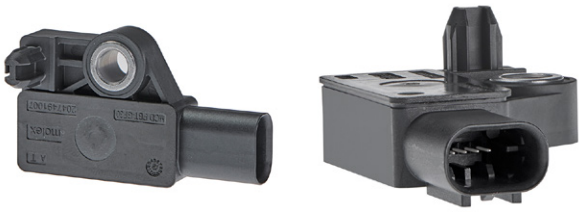
Road Noise Cancellation (RNC) Sensors

molex

Molex's Road Noise Cancellation (RNC) Sensors, with A2B technology, convert vehicle chassis vibration into a signal that generates a cancellation soundwave, reducing road noise within the cabin



Road Noise Cancellation Sensor

Features and Advantages

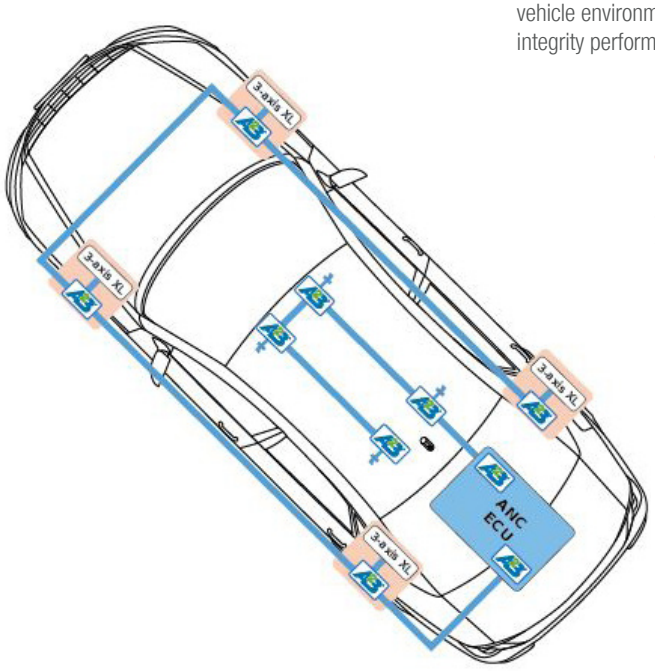
Various mechanical housing configurations available
Offers flexibility for parallel or perpendicular positioning to the ground in order to to enable mechanical mounting to a vehicle and allows a variety of connector orientations and terminal sizes

IP6K9K NEMA Rating
Protects against water and dust ingress in harsh environments

Daisy-chained sensors
Eliminates heavy star-patterned cabling and noise, vibration and harshness (NVH) sound-dampening material

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

Mated with 1X4 Mini50 Connector
Provides 50% space savings over traditional USCAR 0.64mm connectors. Ideal for interior transportation-vehicle environments. Delivers superior signal integrity performance



4 to 8 sensors located on chassis frame
Captures vibration energy transfer from the suspension into the vehicle chassis at the earliest point for optimal cancellation timing

Collaboration with Analog Device on accelerometer and A2B technology
Provides 50% space savings over Provides a system at an overall lower cost

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Markets and Applications

Automotive

In-cabin noise reduction

In-Vehicle Cabin

Specifications

ACCELEROMETER

Maximum Monitored Shock Load (max.): 16g in all axes
Anticipated Sensory Frequency Range: 20-500 HZ
Programmable Frequency Range: 500 Hz to 4kHZ
Low Latency: 150µ maximum at 2kHz bandwidth
Low Noise:
- <100µg/√Hz for x- and y-axes
- <150µg/√Hz for z-axis

Digital Output: Up to 14 Gbps

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

PHYSICAL

Operating Temperatures: -40 to +115°C
Protection Classification: IP6K9K per ISO 20653
Vibration Classification: On-Vehicle Spring Mass
Chemical Resistance: Exterior Body and Underbody
Mechanical Shock/Drop: Pothole and Collision Rated

ENVIRONMENTAL

Temperature Classification: -40 to +115°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 Open Alliance Specifications for Communication Channel 2.0 – Equivalent to 100BaseT1)
Digitally Matched Differential Impedance: 100 Ohms
Sensor Units Are “Daisy Chained” Together

www.molex.com

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