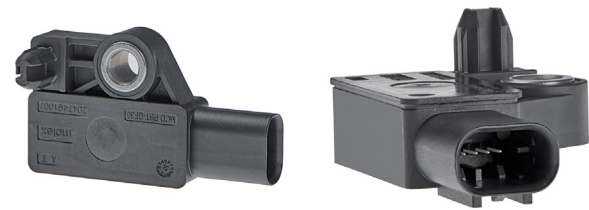


PRELIMINARY

Road Noise Cancellation (RNC) Sensors

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

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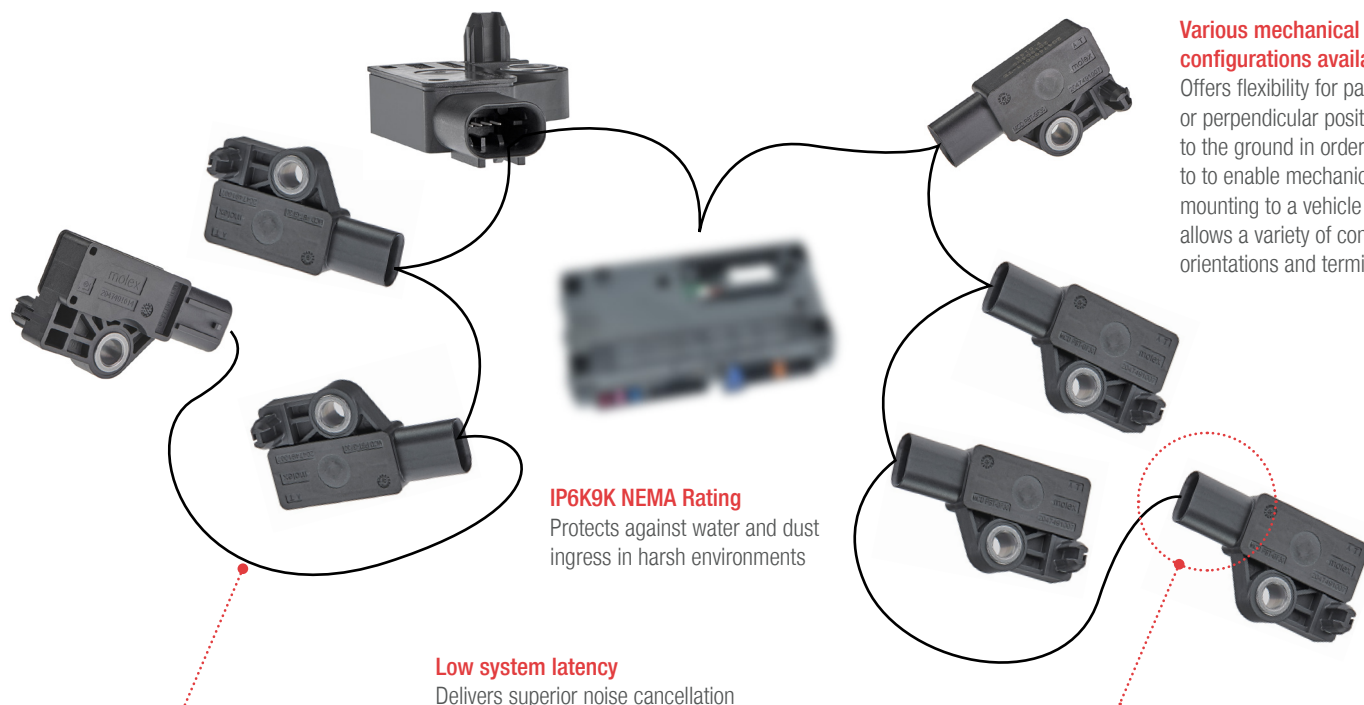


Road Noise Cancellation Sensor

Features and Advantages

Various mechanical housing configurations available

Offers flexibility for parallel or perpendicular positioning to the ground in order to 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

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.

Daisy-chained sensors

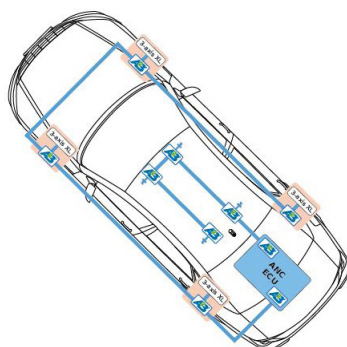
Eliminates heavy star-patterned cabling and noise, vibration and harshness (NVH) sound-dampening material

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

Collaboration with Analog Device on accelerometer and A2B technology

Provides a relatively low-cost system



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

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Road Noise Cancellation (RNC) Sensors

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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 12kHz 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 ±2nm

PHYSICAL

Operating Temperatures: -40 to +125°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 +125°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

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