

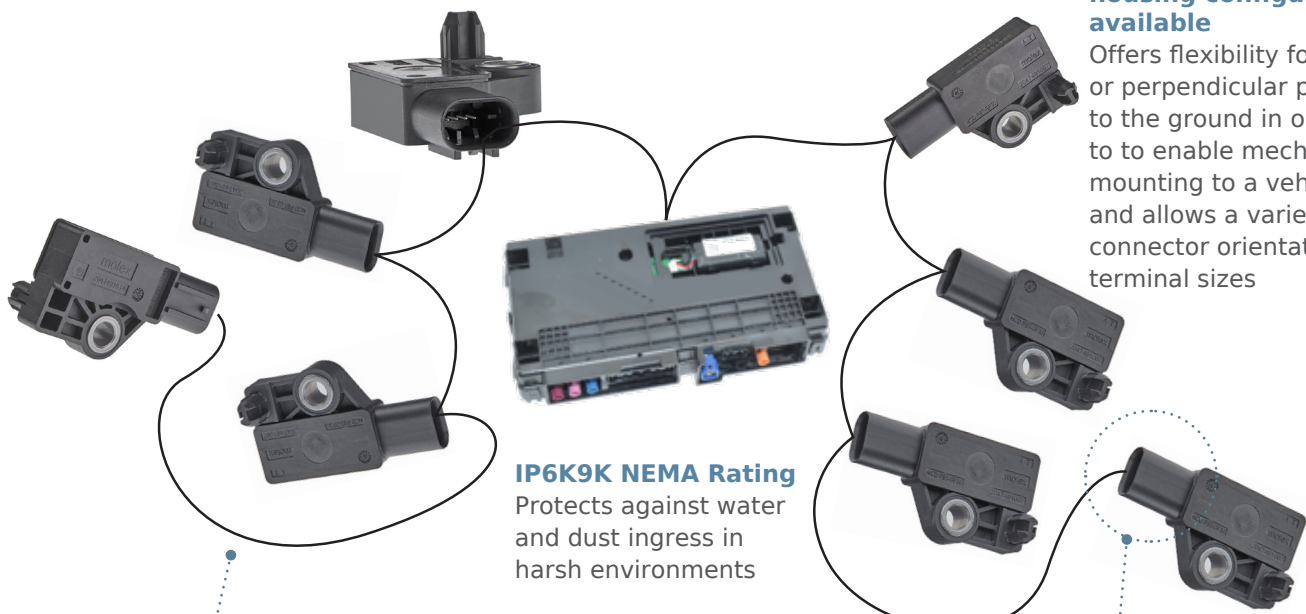
# Vehicle Sensing Solutions: Road Noise Cancellation (RNC) Sensors >

Molex RNC Sensors, with A2B technology, convert vehicle chassis vibration into a signal that generates a cancellation soundwave, reducing road noise within the cabin



RNC Sensors

## 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

### Mated with 1X4 Mini50 Connector

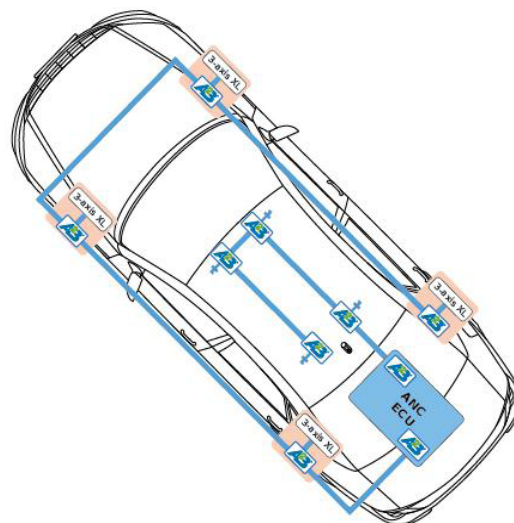
Provides 50% space savings over traditional USCAR 0.64mm connectors. Ideal for interior transportation-vehicle environments. Delivers superior signal integrity performance

### Daisy-chained sensors

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

### Collaboration with Analog Device on accelerometer and A2B technology

Provides 50% space savings over Provides a system at an overall lower cost



### 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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## MARKETS AND APPLICATIONS

### Automotive

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



*In-Vehicle Cabin*



*Mechanic Laptop Engine*



*Future Car*

## 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](http://www.molex.com)