

Touch Sensor Solutions



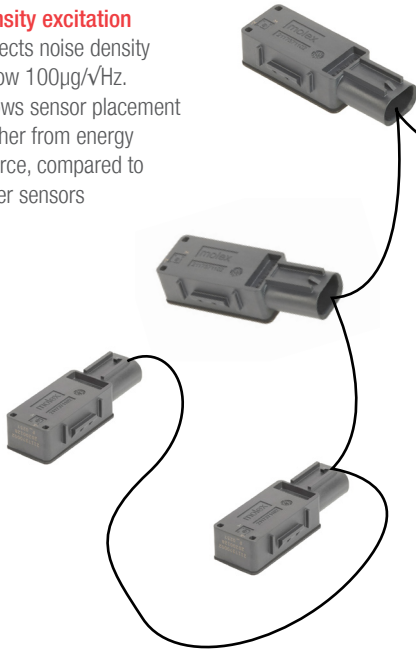
Molex Touch Sensors, with A²B technology and connected with industry-proven Mini50 Connectors, capture low-energy vibrations created by an object's contact with the vehicle and convert them into signals that trigger an appropriate automated response



Features and Advantages

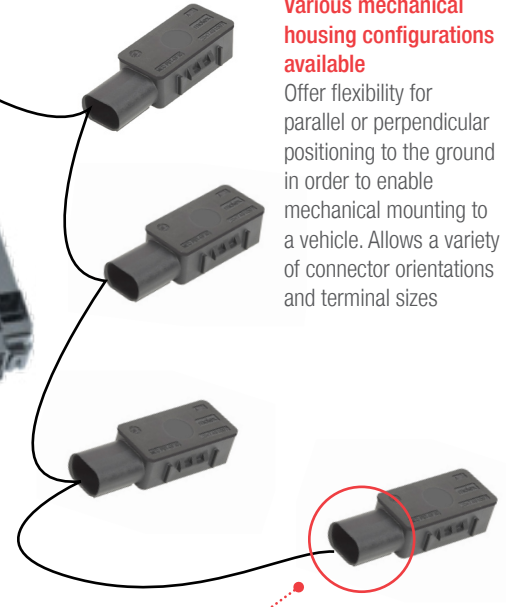
Captures low noise density excitation

Detects noise density below 100 μ g/ \sqrt Hz. Allows sensor placement farther from energy source, compared to other sensors



Various mechanical housing configurations available

Offer flexibility for parallel or perpendicular positioning to the ground in order to enable mechanical mounting to a vehicle. Allows a variety of connector orientations and terminal sizes



IP6K9K Rating

Protects against water and dust ingress in harsh environments

Daisy-chained sensors

Eliminates heavy star-patterned cabling and reduces harness weight around vehicle

Low system latency, <150 μ s

Delivers superior results because the time between the sensor's detection of the vibration and the module's receipt of the signal is extremely low

Mated with 1x4 sealed Mini50 Connector

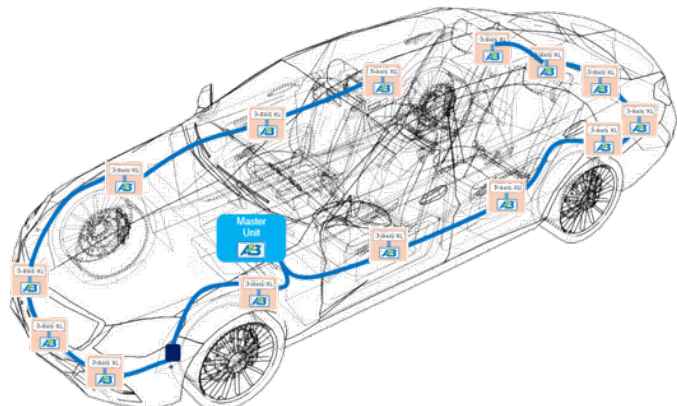
Provides 50% space savings over traditional USCAR 0.64mm connectors. Ideal for interior transportation-vehicle environments. Delivers superior signal integrity performance

Collaboration with Analog Device on accelerometer and A²B technology

Enables a complete cost-competitive system

Up to 14 sensors located around the vehicle

Captures vibration energy transfer from contacts against the body panels, doors and bumpers



Applications

Automotive

- ADAS/AV Sensors
- Automated Parking Sensors
- Security
- Incident Reporting



Cyclist Bumping Into a Vehicle's Blind Spot

Specifications

ACCELEROMETER

Maximum Monitored Shock Load: 40g in all axes
Frequency Range: 2,000 Hz
Low Latency (max.): 150 μ
Low Noise:
<1,000 μ g/ \sqrt Hz for all axes
Digital Output: 24-bit A²B

MECHANICAL

Sensor Installation Force into Bracket (max.): 60N
Retention Force: >100N from Bracket

PHYSICAL

Operating Temperatures: -40 to +105°C
Protection Classification: IP6K9K per ISO 20653
Vibration Classification: On-Vehicle Spring Mass
Chemical Resistance: Exterior Body and Underbody
Mechanical Shock/Drop: Door Slam, Pothole and Collision Rated

ENVIRONMENTAL

Temperature Classification: -40 to +105°C
(If a higher temperature is needed, contact Molex Product Manager)
Protection Classification: IP6K9K
(Dust and High-Pressure Spray) per ISO 20653

HARNESING 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 100Base-T1)
Digitally Matched Differential Impedance: 100 Ohms
Sensor Units are "daisy chained" Together