Vehicle Sensing Solutions: External Acoustic Noise Cancellation (ANC) Sensors

Molex External ANC Sensors, which are phantom-powered slave units employing differential pairs, convert airborne noise into digital electrical signals that generate a cancellation soundwave to reduce unwanted noise within the vehicle passenger compartment.

**FEATURES AND ADVANTAGES**

- **Daisy-chained sensors**
  Eliminates heavy star-patterned cabling and reduces harness weight of the vehicle.

- **IP6K9K 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 excitation and the module receiving the signal is extremely low.

- **Mates with 1x4 sealed Mini50 Connector**
  Provides 50% space savings over traditional USCAR 0.64mm connectors. Is ideal for vehicle interiors. Delivers superior signal integrity performance.

**MARKETS AND APPLICATIONS**

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

- **In-Vehicle Cabin**
- **Mechanic Laptop Engine**
- **Future Car**
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**SPECIFICATIONS**

**Microphone Technical Specifications**
- Very low distortion: <1% Total harmonic distortion + noise @ 1kHz
- Acoustic overload point: 133 dB
- Sensitivity: -46 +/- 2 dBFS @ 1kHz
- Noise floor: 29 dBSPL
- High signal-to-noise ratio: 65dB(A)
- Bandwidth: 45 Hz to >20kHz
- Omnidirectional

**Mechanical Technical Specifications**
- Connector interface drawing: Molex drawing 349684800
- Mini50 Sealed 1x4 – see ordering information
- Installation force into vehicle position should not exceed 25N.
- Retention force greater than 15N prior to nut and screw fastening
- Retained in place by M6 screw and nut
- The torque value of screw and nut shall be 10±2Nm

**Environmental**
- Temperature classification: -40˚ to 85˚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 the Open Alliance Specification for Communication Channel 2.0 = equivalated to 100BaseT1
- Digital matched differential impedance – 100 Ohms
- Sensor units are daisy-chained together

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>213840-0001</td>
<td>Molex Sensor Assembly</td>
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<tr>
<td>34967-4001</td>
<td>1x4 Mini50 Sealed Connector, Key A with CPA</td>
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<tr>
<td>34967-4051</td>
<td>1x4 Mini50 Sealed Connector, Key A, with Circuits 1 and 2 Plugged (End Node)</td>
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<tr>
<td>34905-6447</td>
<td>CTX50 Sealed Connector, Silver Plated, Large Grip</td>
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Leoni Dacar 546 – 2x0.35/Cu/T125

www.molex.com/link/ancsensors.html