Seat Belt Buckle Sensor – Mechanical

Features
- Mechanically operated position sensor
- Simple, cost effective mechanism
- Integrated in seat belt buckle
- Normally open contact
- Operates when the thorn in the seat belt buckle moves from an unlatched to a latched position
- Choice of cable length and clips
- Choice of connector and terminals
- Choice of circuitry for output voltages

Benefits
- Robust construction makes this sensor well suited to harsh environments
- No standby power required
- No magnet on thorn required
- Gold plated contacts give excellent life and reliability

Applications
- Vehicle Occupant Safety Systems

General Description
The sensor detects whether the seat belt buckle is latched or unlatched, allowing the passenger safety system to determine the optimum airbag deployment. It is also used as an input to the electronic park brake and the unbuckled warning system.

Operation
Basic Principle
The sensor is in a normally open position. When the seat belt buckle thorn moves from an unlatched to a latched position the mechanism will close completing the electrical circuit and sending a voltage output to the customer electrical interface.

Packaging Options
Custom packaging can be provided to meet any need, please contact Littelfuse Engineering for details.
## Functional Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Mechanical Switch Sensor</th>
<th>Normally Open</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Electrical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Max.</th>
<th>Voltage Switching</th>
<th>12Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed State Current Sensing</td>
<td>Min.</td>
<td>5mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max.</td>
<td>30mA</td>
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<td></td>
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</tbody>
</table>

### Environmental/Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Max.</th>
<th>Temperature Operating</th>
<th>Celsius</th>
<th>-40°C to +85°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Shock</td>
<td>6ms ½ Sine</td>
<td>Max.</td>
<td></td>
<td>50g</td>
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</tbody>
</table>

**Littelfuse**

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