Seat belt sensor
Hall-effect
Reed switch
Seat belt sensor

Description

The increase of usage of seat belt buckle detection has increased in the recent years mainly driven by higher market demand on ATVs and off-road vehicles. Due to legislation changes on safety for implementing buckle seat belt detection, with the possibility to become mandatory on some markets in the near future, has created new requests for buckle seat belt sensors on these markets.

Piher designs and develops seat belt buckle sensors that detect when a buckle tongue is latched. This information is received by the vehicle CPU which can determine some conditions such as driving speed limitation when the buckle tongue is unlatched.

The technology used for this kind of sensors, Reed Switch or Hall Effect, provides superior performance detection even under extreme and challenging environment conditions such as dust, dirt, high vibration or temperature.

Main features

- Selectable working principle: Reed Switch or Hall Effect.
- Simple dual module design with only two wires with no external magnets or moving parts required, thus saving space, cost and set-up operations.
- Fully sealed for harsh environments without mechanical wear between both modules and customizable lifetime specifications.
- Custom product design packaging can be provided to meet any need including the choice of wire harness and interface connector.

Markets served

- All terrain vehicles (ATVs)
- Marine
- Car
- Off road vehicle
- Bus
- Air plane

Piher Sensing Systems

Our product competencies and services:
- Potentiometers
- Position / angle sensors
- Rotary switches
- Incremental encoders
- Printed circuit resistors
- Mechatronics
- Value added assemblies
Seat belt sensor

Reed switch version specifications.

**Electrical**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor logic</td>
<td>Normally open</td>
</tr>
<tr>
<td>Voltage</td>
<td>16Vdc Max.</td>
</tr>
<tr>
<td>DC switched currentput</td>
<td>0.35A Max.</td>
</tr>
<tr>
<td>Switch power</td>
<td>5W Max.</td>
</tr>
</tbody>
</table>

**Environmental**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature*</td>
<td>-40ºC to +85ºC</td>
</tr>
</tbody>
</table>

* Others check availability.

Hall Effect version specifications.

**Electrical**

<table>
<thead>
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<th>Feature</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Sensor logic</td>
<td>Bi-state</td>
</tr>
<tr>
<td>Voltage</td>
<td>2.7V to 24V</td>
</tr>
<tr>
<td>Overvoltage protection</td>
<td>32Vdc Max.</td>
</tr>
<tr>
<td>Reverse supply overvoltage protection</td>
<td>-30Vdc Max.</td>
</tr>
</tbody>
</table>
| Current                          | Switching low: 5.0mA / 6.9mA  
                                    | Switching high: 12.0mA / 17.0mA |
| Resistance                       | Circuit: 100Ω Max.       
                                    | Isolation: >20MΩ Max.       |

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<td>Operating temperature*</td>
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<tr>
<td>Storage</td>
<td>-40ºC to +140ºC</td>
</tr>
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