Safe detection of metal.

Safe state is reached when damped.

Applications
The safety function of the sensor allows the user to solve some applications easier than before. If there is no metal in the sensor field, the outputs are enabled. If there is metal in the sensor field, the outputs are safely switched off.

Example crane bridge monitoring
A fail-safe sensor monitors the position of the crane on the rail. So far the sensor was damped across the whole travel; the sensor was undamped only at the stop positions. This new fail-safe sensor allows mounting of only one damping element each at the beginning and the end of the crane bridge which saves material and mounting cost.

- Fail-safe inductive sensor without magnetic or coded target.
- 2 OSSD outputs for connection to a safety relay or safety PLC.
- Diagnosis of different operating states via LED indication.
- Easy integration in the machine due to flush mounting.
- Certified to ISO 13849-1 PL d, IEC 61508 SIL 2 and IEC 62061 SIL cl2.
Inductive fail-safe applications are special applications requiring non-contact and safe detection of a metal object.

### M12 connector / output function 2 PNP (OSSD)

<table>
<thead>
<tr>
<th>Type / design</th>
<th>Enable zone [mm]</th>
<th>Safe switch-off distance [mm]</th>
<th>Current load [mA]</th>
<th>Protection</th>
<th>Ambient temperature [°C]</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>M18 / f</td>
<td>&gt; 10</td>
<td>&lt; 5</td>
<td>50</td>
<td>IP 65 / IP 67</td>
<td>-25...70</td>
<td>GG8515</td>
</tr>
</tbody>
</table>

### Wiring diagram

1) safety-related logic unit

### Function of the sensor (1)

**Sensor damped:**
The definition of the safety function is new. The safe state is reached when the damping element (5) is within the safe switch-off distance of < 5 mm (2) is new. The outputs A1 and A2 are switched off (logic “0”).

**Sensor undamped:**
If the damping element (5) is in the enable zone (4) at a distance of > 10 mm of the sensing face and if there is no sensor fault, both outputs (OSSD) are enabled (logic “1”).

**Inadmissible zone**
Between the safe switch-off distance (2) of < 5 mm and the enable zone (4) of > 10 mm there is the inadmissible zone (3).

The user has to take measures to exclude the presence of the damping element in this zone.

### Technical data (extract)

- **Operating voltage** [V]: 24 DC (10...30 DC)
- **Short-circuit protection**
- **Reverse polarity protection**
- **Operating mode**: permanent operation (maintenance-free)
- **Safety-related reliability (PFHd) [1/h]**: < 1.0E-07
- **MTTFd [years]**: 900
- **DC/CCF/Cat.**: 85 % / 65 % / 2

### Evaluation unit

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Safety relay relay</td>
<td>G15015</td>
</tr>
<tr>
<td></td>
<td>Safety relay semiconductor</td>
<td>G15035</td>
</tr>
<tr>
<td></td>
<td>Safety relay relay</td>
<td>G15025</td>
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</tbody>
</table>

### Connectors and splitter boxes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M12, 2 m black, PUR cable</td>
<td>EVC001</td>
</tr>
<tr>
<td></td>
<td>M12, 5 m black, PUR cable</td>
<td>EVC002</td>
</tr>
<tr>
<td></td>
<td>M12, 2 m black, PUR cable</td>
<td>EVC004</td>
</tr>
<tr>
<td></td>
<td>M12, 5 m black, PUR cable</td>
<td>EVC005</td>
</tr>
</tbody>
</table>

For further technical data please go to: www.ifm.com