Wheel Detection

Wheel Sensor

RSR110

The Wheel Sensor RSR110 is available in two system variants which are Single Wheel Sensor RSR110s and Double Wheel Sensor RSR110d. Thanks to their open analogue interface, both wheel sensors can be easily integrated into the electronics of any system. This enables system integrators to adapt the evaluation of the information perfectly in line with individual requirements.

Information
Analogue sensor signal for the evaluation of wheel detection (SIL 0), direction (SIL 0), speed, wheel diameter and wheel centre

Applications
Switching and triggering tasks such as hot box and flat wheel detection systems, lubrication systems, vehicle detection, wagon weighbridges, washing systems, automatic equipment identification etc.
Speed measurement

Benefits
Open analogue interface
Simple integration
High availability
Very precise information
Convenient pluggable cable and rail claw
The RSR110 system variants are highly resistant to electromagnetic interference caused by eddy current brakes or rail currents, for example.

**Single Wheel Sensor RSR110s**: One sensor system for direction-independent wheel detection.

**Double Wheel Sensor RSR110d**: Two sensor systems for wheel detection including directional information.

The current signal can be evaluated completely as desired using simple electronics, a PLC or a microcontroller. This reduces the number of hardware components as well as the space requirements and power consumption.

For systems where tailored software integration is not required, the wheel sensor information can be digitised using the Frauscher Wheel Sensor Signal Converter WSC.

### Technical Data

#### RSR110

<table>
<thead>
<tr>
<th>Interfaces</th>
<th>Open analogue interface or optional Wheel Sensor Signal Converter WSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety level</td>
<td>SIL 0</td>
</tr>
<tr>
<td>Output signal</td>
<td>Wheel sensor current: constant current (5 mA) Change in current (damping by train wheel)</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40 °C to +85 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>Up to 100%</td>
</tr>
<tr>
<td>Electromagnetic compatibility</td>
<td>EN 50121-4</td>
</tr>
<tr>
<td>Conditions</td>
<td>UV resistance: yes Protection class: IP65 / IP68 up to 8 kPa/60min Wheel diameter: 300 mm to 2100 mm Speed: 0 km/h (static) to 450 km/h</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Height: 60 mm Width: 270 mm Depth: 77 mm</td>
</tr>
<tr>
<td>Power supply</td>
<td>Voltage: +8 V DC to +33 V DC</td>
</tr>
</tbody>
</table>

### System Design

**WSC** Wheel Sensor Signal Converter

**RSR** Wheel Sensor

**RSR110s**

- Information
- WSC
- Optional
- ≤ 10 km
- ≤ 50 m
- ≤ 5, 10, 25 m

**RSR110d**

- Information
- WSC
- Optional
- ≤ 10 km
- ≤ 5, 10, 25 m