Ring sensors

TURCK ring sensors are compact and universally mountable. They are used in many different systems such as in assembly lines or component feeding systems where they detect small and fast moving metal parts reliably and quickly. The uprox®+ Factor 1 sensors of the TS12 series are used in feeding systems composed by hoses with different diameters. The TS12 can therefore be used as an innovative replacement for ring sensors.

Features
- Ring diameter 6…100 mm
- Static, dynamic and analog versions
- Integrated amplifier or separate probe-amplifier combination
- High sensitivity, adjustable, up to Ø 0.1 mm wire diameter
- Compact design
- The innovative TS12 uprox®+ factor 1 series

Properties

- Designs
  From the compact rectangular Q14 to the proven S32

- Measuring ranges
  Ring diameters of Ø 6…100 mm detect steel balls from Ø 0.6 mm as well as wires Ø 0.4 mm and bigger

- Materials
  Plastic housing in PBT, PA, ABS and POM

- Electrical connections
  Connection cable, 2 m; male M8 x 1, M12 x 1

- Electrical versions
  3-wire NO or antivalent PNP/NPN; static, dynamic or analog output

- Special features
  Versions with separate ring and amplifier; S32XL ring diameter Ø 100 mm

Internet link
Scan the QR code to access our products on the internet
### TS12

![TS12 Image]

**General data**
- **Connection**: male, M8 x 1
- **Operating voltage**: 10…30 VDC
- **Output**: PNP
- **Dimensions**: 17 x 12 x 80 mm
- **Housing material**: PBT

Can be used as a universal replacement for ring sensors
For small parts detection

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th>Inside ring diameter D</th>
<th>Code</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI20U-TS12-AP6X2-V1131</td>
<td>20.1 mm</td>
<td>w013</td>
<td>d304</td>
</tr>
</tbody>
</table>

Many different types available, also as NPN version, see type code

### Q14 – Switching output

![Q14 Image]

**General data**
- **Connection**: male, M12 x 1
- **Operating voltage**: 10…30 VDC
- **Output**: PNP
- **Housing material**: PBT
- **Dimensions**: 30 x 14 x 62.5 mm

Tailback detection

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th>Inside ring diameter D</th>
<th>Code</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI20R-Q14-AP6X2-H1141</td>
<td>20.1 mm</td>
<td>w013</td>
<td>d305</td>
</tr>
<tr>
<td>BI15R-Q14-AP6X2-H1141</td>
<td>15.1 mm</td>
<td>w013</td>
<td>d306</td>
</tr>
<tr>
<td>BI10R-Q14-AP6X2-H1141</td>
<td>10.1 mm</td>
<td>w013</td>
<td>d307</td>
</tr>
<tr>
<td>BI6R-Q14-AP6X2-H1141</td>
<td>6.1 mm</td>
<td>w013</td>
<td>d308</td>
</tr>
</tbody>
</table>

Many different types available, also as NPN version, see type code
### Q14 - Voltage output

![Image of Q14 sensor]

<table>
<thead>
<tr>
<th>General data</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside ring diameter D</td>
<td>20.1 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>15...30 VDC</td>
</tr>
<tr>
<td>Housing material</td>
<td>PBT</td>
</tr>
<tr>
<td>Dimensions</td>
<td>30 x 14 x 62.5 mm</td>
</tr>
</tbody>
</table>

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BI20R-Q14-LU-H1141</td>
<td>w038 d309</td>
</tr>
</tbody>
</table>

#### Tailback detection

Many different types available, also as NPN version, see type code

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### Q20

![Image of Q20 sensor]

<table>
<thead>
<tr>
<th>General data</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside ring diameter D</td>
<td>30.1 mm</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>10...30 VDC</td>
</tr>
<tr>
<td>Housing material</td>
<td>PBT</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 20 x 68 mm</td>
</tr>
</tbody>
</table>

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BI30R-Q20-AP6X2-H1141</td>
<td>w013 d310</td>
</tr>
</tbody>
</table>
**W30**

Dynamic output behaviour
For the detection of small and fast moving parts

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th>Inside ring diameter D</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI30R-W30-DAP6X-H1141</td>
<td>30.1 mm</td>
</tr>
<tr>
<td>BI20R-W30-DAP6X-H1141</td>
<td>20.1 mm</td>
</tr>
<tr>
<td>BI15R-W30-DAP6X-H1141</td>
<td>15.1 mm</td>
</tr>
<tr>
<td>BI10R-W30-DAP6X-H1141</td>
<td>10.1 mm</td>
</tr>
<tr>
<td>BI6R-W30-DAP6X-H1141</td>
<td>6.1 mm</td>
</tr>
</tbody>
</table>

Many different types available, also as NPN version, see type code

**Q80**

Tailback detection

**Types and data – selection table**

<table>
<thead>
<tr>
<th>Type</th>
<th>Inside ring diameter D</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI65R-Q80-AP6X2-H1141</td>
<td>65 mm</td>
</tr>
<tr>
<td>BI50R-Q80-AP6X2-H1141</td>
<td>50 mm</td>
</tr>
</tbody>
</table>

**General data**

- **Connection**
  - male, M12 x 1

- **Operating voltage**
  - 10…30 VDC

- **Output**
  - PNP

- **Housing material**
  - PBT

- **Dimensions**
  - 35 x 30 x 60 mm
### S32SR

#### General data
- **Connection**: Terminal chamber
- **Operating voltage**: 10...55 VDC
- **Housing material**: ABS
- **Dimensions**: 100 x 32 x 175 mm

#### Tailback detection

#### Types and data – selection table

<table>
<thead>
<tr>
<th>Type</th>
<th>Inside ring diameter D</th>
<th>Steel wire diameter (St37)</th>
<th>w</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI65R-S32SR-VP44X</td>
<td>65 mm</td>
<td>2 mm</td>
<td>w023</td>
<td>d318</td>
</tr>
<tr>
<td>NI40R-S32SR-VP44X</td>
<td>40 mm</td>
<td>1 mm</td>
<td>w023</td>
<td>d319</td>
</tr>
<tr>
<td>NI20R-S32SR-VP44X</td>
<td>20 mm</td>
<td>0.4 mm</td>
<td>w023</td>
<td>d320</td>
</tr>
</tbody>
</table>

### S32XL

#### General data
- **Inside ring diameter D**: 100 mm
- **Operating voltage**: 10...55 VDC
- **Housing material**: POM
- **Steel wire diameter (St37)**: 4 mm

#### Tailback detection

#### Types and data – selection table

<table>
<thead>
<tr>
<th>Type</th>
<th>w</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>NI100R-S32XL-VP44X-H1141</td>
<td>w035</td>
<td>d321</td>
</tr>
</tbody>
</table>