# TURCK Inductive Sensors - Specialty

## M Barrel

### Nonferrous Only Sensors

**M Barrel:** Metal Barrel with Potted-In Cable, Partial Threading  
**S Barrel:** Plastic Barrel with Potted-In Cable, Partial Threading  

3-Wire DC  
10-30 VDC, Short-Circuit and Overload Protected  
Normally Open, NPN (Sinking) or PNP (Sourcing)

## S Barrel

## Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Rated Operating Distance (mm)</th>
<th>Barrel Diameter (mm)</th>
<th>Sinking</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi10NF-M30-AN6X</td>
<td>•</td>
<td>10</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>500</td>
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<tr>
<td>Bi10NF-M30-AP6X</td>
<td>•</td>
<td>10</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>500</td>
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<tr>
<td>Bi10NF-S30-AN6X</td>
<td>•</td>
<td>10</td>
<td>30</td>
<td>•</td>
<td>2</td>
<td>500</td>
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<tr>
<td>Bi10NF-S30-AP6X</td>
<td>•</td>
<td>10</td>
<td>30</td>
<td>•</td>
<td>2</td>
<td>500</td>
</tr>
</tbody>
</table>

## Cable/Conductor

Cable: PVC Jacket; 2 meter standard length  
Copper Conductor: 21 AWG

## Material

### M Barrel Housing:
Chrome Plated Brass  
### S Barrel Housing:
PA 12-GF30 Plastic  
### Sensing Face:
PA 12-GF30 Plastic  
### End Cap:
PUR Plastic

## Accessories

Accessories and mounting devices can be found in Section J.
Specifications

Ripple ........................................... ≤10%
Differential Travel (Hysteresis) .......... 3-15% (5% typical)
Voltage Drop Across Conducting Sensor . ≤1.8 V at 200 mA
Trigger Current for Overload Protection .. ≥220 mA
Continuous Load Current .................... ≤200 mA
Off-State (Leakage) Current ............... <10 µA
No-Load Current ............................. 6.5-10.5 mA
Time Delay Before Availability .......... ≤25 ms
Power-On Effect .............................. Per IEC 947-5-2
Reverse Polarity Protection ............... Incorporated
Wire-Break Protection ....................... Incorporated
Transient Protection ........................ Per EN 60947-5-2
Operating Temperature ..................... -25°C to +60°C (-13°F to +140°F)
Enclosure ........................................ Meets NEMA 1,3,4,6,13 and IEC IP 67
Shock ............................................. 30 g, 11 ms
Vibration ........................................ 55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability .................................. ≤2% of Rated Operating Distance
LED On ......................................... Output Energized

Dimensions

1

2
TURCK
Inductive Sensors - Specialty

CP40

Nonferrous Only Sensors
Limit Switch Style Sensor combiprox®

4-Wire DC
10-65 VDC, Short-Circuit and Overload Protected
Complementary Outputs, One N.O.; One N.C. (SPDT)

Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Rated Operating Distance (mm)</th>
<th>Housing Height (mm)</th>
<th>Sinking</th>
<th>Spacing</th>
<th>Drawing #</th>
<th>Wiring Diagram</th>
<th>Weld Field</th>
<th>Immune (V/Hz)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>N120NF-CP40-VN4X2</td>
<td>20</td>
<td>40</td>
<td>•</td>
<td>1</td>
<td>A</td>
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<td>100</td>
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<td>M1528200</td>
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<tr>
<td>N120NF-CP40-VP4X2</td>
<td>20</td>
<td>40</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>2</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>M1508200</td>
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</table>

Quick Disconnect Option

For minilast connector: Add "-B1141" suffix to part number.
For eurofast connector: Add "-H1141" suffix to part number.
Suggested cordsets:
- For minilast: RKM 40-2M. See Section H for other styles.
- For eurofast: RK 4.4T-2. See Section H for other styles.

Material

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing:</td>
<td>PBT-GF30-VO Plastic</td>
</tr>
<tr>
<td>Sensing Face:</td>
<td>PBT-GF30-VO Plastic</td>
</tr>
</tbody>
</table>

Accessories

Mounting Bracket LSAP-2 and other accessories can be found in Section J.
### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripple</td>
<td>≤10%</td>
</tr>
<tr>
<td>Differential Travel (Hysteresis)</td>
<td>3-15% (5% typical)</td>
</tr>
<tr>
<td>Voltage Drop Across Conduction Sensor</td>
<td>≤1.8 V at 200 mA</td>
</tr>
<tr>
<td>Trigger Current for Overload Protection</td>
<td>≥220 mA</td>
</tr>
<tr>
<td>Continuous Load Current</td>
<td>≤200 mA</td>
</tr>
<tr>
<td>Off-State (Leakage) Current</td>
<td>&lt;10 μA</td>
</tr>
<tr>
<td>No-Load Current</td>
<td>6.5-10.5 mA</td>
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<tr>
<td>Time Delay Before Availability</td>
<td>≤25 ms</td>
</tr>
<tr>
<td>Power-On Effect</td>
<td>Per IEC 947-5-2</td>
</tr>
<tr>
<td>Reverse Polarity Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Wire-Break Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Transient Protection</td>
<td>Per EN 60947-5-2</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25°C to +60°C (-13°F to +140°F)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Meets NEMA 1,3,4,6,13 and IEC IP 67</td>
</tr>
<tr>
<td>Shock</td>
<td>30 g, 11 ms</td>
</tr>
<tr>
<td>Vibration</td>
<td>55 Hz, 1 mm Amplitude in all 3 Planes</td>
</tr>
<tr>
<td>Repeatability</td>
<td>≤2% of Rated Operating Distance</td>
</tr>
<tr>
<td>LED On (Yellow)</td>
<td>Output Energized</td>
</tr>
<tr>
<td>LED On (Green)</td>
<td>Power On</td>
</tr>
</tbody>
</table>

### Dimensions

![Dimensions Diagram](image)

Note: By removing sensor from terminal chamber, head can be adjusted to nine different sensing positions.
TURCK
Inductive Sensors - Specialty

CP40

Nonferrous Only Sensors
Limit Switch Style Sensor  combiprox®

2-Wire AC
20-250 VAC
Connection Programmable; Normally Open or Normally Closed

Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Rated Operating Distance (mm)</th>
<th>Housing Height (mm)</th>
<th>Normally Open</th>
<th>Normally Closed</th>
<th>Drawing #</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Weld Field Immune (VSM)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
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</thead>
<tbody>
<tr>
<td>N120NF-CP40-FZ3X2</td>
<td></td>
<td>20</td>
<td>40</td>
<td></td>
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<td></td>
<td>2</td>
<td></td>
<td>20</td>
<td>M1378200</td>
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</tbody>
</table>

Caution

An electrical shock hazard exists inside of terminal chamber style sensors whenever power is applied. Remove all power to the sensor whenever sensor wiring is exposed.

Material

Housing: PBT-GF30-VO Plastic
Sensing Face: PBT-GF30-VO Plastic

Quick Disconnect Option

For minifast connector: Add “-B1131” suffix to part number.
Suggested cordset: RKM 30-2M. See Section H for other styles.

For microfast connector: Add “-B3131” suffix to part number.
Suggested cordset: KB 3T-2. See Section H for other styles.

Accessories

Mounting bracket LSAP-2 and other accessories can be found in Section J.
Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Frequency</td>
<td>40-60 Hz</td>
</tr>
<tr>
<td>Differential Travel (Hysteresis)</td>
<td>3-15% (5% typical)</td>
</tr>
<tr>
<td>Voltage Drop Across Conducting Sensor</td>
<td>≤7.0 V at 500 mA</td>
</tr>
<tr>
<td>Continuous Load Current</td>
<td>≤500 mA</td>
</tr>
<tr>
<td>Off-State (Leakage) Current</td>
<td>≤1.7 mA</td>
</tr>
<tr>
<td>Minimum Load Current</td>
<td>≥5.0 mA</td>
</tr>
<tr>
<td>Inrush Current</td>
<td></td>
</tr>
<tr>
<td>Time Delay Before Availability</td>
<td>≤80 ms</td>
</tr>
<tr>
<td>Power-On Effect</td>
<td>Per IEC 947-5-2</td>
</tr>
<tr>
<td>Transient Protection</td>
<td>Per EN 60947-5-2</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25°C to +60°C (-13°F to +140°F)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Meets NEMA 1, 3, 4, 6, 13 and IEC IP 67</td>
</tr>
<tr>
<td>Shock</td>
<td>30 g, 11 ms</td>
</tr>
<tr>
<td>Vibration</td>
<td>55 Hz, 1 mm Amplitude in all 3 Planes</td>
</tr>
<tr>
<td>Repeatability</td>
<td>≤2% of Rated Operating Distance</td>
</tr>
<tr>
<td>LED On (Red)</td>
<td>Output Energized</td>
</tr>
<tr>
<td>LED On (Green)</td>
<td>Power On</td>
</tr>
</tbody>
</table>

Dimensions

![Dimensions Diagram]

Note: By removing sensor from terminal chamber, head can be adjusted to nine different sensing positions.
## Q14 and Q20

**Ring Sensors, Small with Static Output**  
Plastic Housing with Quick Disconnect or Potted-In Cable

3-Wire DC  
10-30 VDC, Short-Circuit and Overload Protected  
Normally Open, NPN (Sinking) or PNP (Sourcing)

### Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable Ringer Diameter (mm)</th>
<th>Ring Height (mm)</th>
<th>NPN (Sinking) PNP (Sourcing)</th>
<th>Drawing</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Weld Field Immune (V/5A)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
<th>Connection</th>
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<tbody>
<tr>
<td>B1 6R-Q14-AN6X2</td>
<td>• 6.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>A</td>
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<td>9.95</td>
<td>M1406020</td>
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<td></td>
</tr>
<tr>
<td>B110R-Q14-AN6X2</td>
<td>• 10.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>2</td>
<td>9.95</td>
<td>M1406120</td>
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<tr>
<td>B115R-Q14-AN6X2</td>
<td>• 15.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>2</td>
<td>9.95</td>
<td>M1406220</td>
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<td>B120R-Q14-AN6X2</td>
<td>• 20.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>2</td>
<td>9.95</td>
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<td>• 6.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>2</td>
<td>9.95</td>
<td>M1406000</td>
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<td></td>
</tr>
<tr>
<td>B110R-Q14-AP6X2</td>
<td>• 10.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>2</td>
<td>9.95</td>
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<tr>
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<td>14</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>2</td>
<td>9.95</td>
<td>M1406200</td>
<td></td>
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<tr>
<td>B120R-Q14-AP6X2</td>
<td>• 20.1</td>
<td>14</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>2</td>
<td>9.95</td>
<td>M1406300</td>
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<td></td>
</tr>
</tbody>
</table>
| B130R-Q20-AN6X2+H1141        | • 30.1                          | 20               | •                             | 2       | C              | 2         | 9.95                     | M1407520  
eurofast  
2 meter cable, PVC jacket; 22 AWG copper conductors, PVC insulated.  
Mating Cordsets  
RK 4T-2 (2 meter)  
For other styles see Section H or consult “Cordsets” catalog  
| B130R-Q20-AP6X2+H1141        | • 30.1                          | 20               | •                             | 2       | D              | 2         | 9.95                     | M1407500  
eurofast |

### Material

- Connector: Chrome Plated Brass  
- Housing: PBT-GF30-VO/POM Plastic

### Accessories

- Accessories and mounting devices can be found in Section J.
**Specifications**

- **Ripple**: ≤10%
- **Voltage Drop Across Conducting Sensor**: ≤1.8 V at 200 mA
- **Trigger Current for Overload Protection**: ≥220 mA
- **Continuous Load Current**: ≤200 mA
- **Off-State (Leakage) Current**: <10 µA
- **No-Load Current**: ≤8 mA
- **Time Delay Before Availability**: ≤8 ms
- **Power-On Effect**: Per IEC 947-5-2
- **Reverse Polarity Protection**: Incorporated
- **Wire-Break Protection**: Incorporated
- **Transient Protection**: Per EN 60947-5-2
- **Operating Temperature**: -25°C to +70°C (-13°F to +158°F)
- **Enclosure**: Meets NEMA 1,3,4,6,13 and IEC IP 67
- **Shock**: 30 g, 11 ms
- **Vibration**: 55 Hz, 1 mm Amplitude in all 3 Planes
- **LED On (Green)**: Power On
- **LED On (Yellow)**: Output Energized

**Target Specifications**

- **Minimum Target Diameter**:
  - Bi 6R: ≥2 mm
  - Bi10R: ≥2 mm
  - Bi15R: ≥3 mm
  - Bi20R: ≥4 mm
  - Bi30R: ≥6 mm

- **Off Delay**: 100 ms
- **Minimum Switching Period**: 100.5 ms (100 ms ON / 0.5 ms OFF)

**Dimensions**

1

2

**Wiring Diagrams**

- **A** NPN (Sinking)
- **B** PNP (Sourcing)
- **C** NPN (Sinking)
- **D** PNP (Sourcing)
**W30**

**Ring Sensors, Small with Dynamic Output***

*Plastic Housing with Quick Disconnect*

- 3-Wire DC
- 10-30 VDC, Short-Circuit and Overload Protected
- Dynamic Output, Normally Open, NPN (Sinking) or PNP (Sourcing)

### Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Ring Diameter (mm)</th>
<th>Housing Height (mm)</th>
<th>NPN (Sinking)</th>
<th>PNP (Sourcing)</th>
<th>Drawing #</th>
<th>Wiring Diagram # of LEDs</th>
<th>Weld Field Immune (334)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi 6R-W30-DAN6X-H1141</td>
<td>•</td>
<td>6.1</td>
<td>30</td>
<td>•</td>
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<td>A</td>
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<td>8</td>
<td>M1403700</td>
<td>eurofast</td>
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<td>10.1</td>
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<td>8</td>
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<td>Bi15R-W30-DAN6X-H1141</td>
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<td>15.1</td>
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<td>8</td>
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<td>A</td>
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<td>Bi30R-W30-DAN6X-H1141</td>
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<td>30.1</td>
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<td>B</td>
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<td>Bi10R-W30-DAP6X-H1141</td>
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<td>Bi20R-W30-DAP6X-H1141</td>
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<td>20.1</td>
<td>30</td>
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<td>1</td>
<td>B</td>
<td>1</td>
<td>8</td>
<td>M1404200</td>
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<tr>
<td>Bi30R-W30-DAP6X-H1141</td>
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<td>30.1</td>
<td>30</td>
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<td>1</td>
<td>B</td>
<td>1</td>
<td>8</td>
<td>M1404500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Dynamic sensors detect a moving target through the ring.

Output of these sensors is a 100 ms fixed pulse-width (one-shot).

**Material**

- Connector: PA 12-GF30 Plastic
- Housing: PA 12-GF30 Plastic
- Sensing Ring: POM Plastic

**Accessories**

Accessories and mounting devices can be found in Section J.
**Specifications**

- **Ripple** ........... ≤10%
- **Voltage Drop Across Conducting Sensor** ........... ≤2.2 V at 200 mA
- **Trigger Current for Overload Protection** ........... ≥270 mA
- **Continuous Load Current** ........... ≤200 mA
- **Off-State (Leakage) Current** ........... <10 μA
- **No-Load Current** ........... 5.5-9.5 mA
- **Time Delay Before Availability** ........... ≤120 ms
- **Power-On Effect** ........... Per IEC 947-5-2
- **Reverse Polarity Protection** ........... Incorporated
- **Wire-Break Protection** ........... Incorporated
- **Transient Protection** ........... Per EN 60947-5-2
- **Operating Temperature** ........... -25°C to +70°C (-13°F to +158°F)
- **Enclosure** ........... Meets NEMA 1,3,4,6,13 and IEC IP 67
- **Shock** ........... 30 g, 11 ms
- **Vibration** ........... 55 Hz, 1 mm Amplitude in all 3 Planes
- **LED On** ........... Output Energized

**Target Specifications** (See application below)

- **Minimum Target Diameter** ........... Bi6R: ≥0.6 mm  
  Bi10R: ≥1.0 mm  
  Bi15R: ≥1.5 mm  
  Bi20R: ≥2.0 mm  
  Bi30R: ≥3.0 mm  

- **Pulse Duration** ........... 100 ms
- **Minimum Time Between Targets** ........... 105 ms
- **Minimum Target Velocity** ........... 0.1 m/s
- **Maximum Target Velocity** ........... 50 m/s

**Dimensions**

**Application**

- **Steel Ball Targets**
- **Non-Metal Tube**

- **Reset Time Between Pulses (Targets)**: 5 ms
- **Spacing Between Targets Leading Edge to Leading Edge (Min. Time Between Targets)**

**Wiring Diagrams**

- **A NPN (Sinking)**
  - BN
  - BK
  - BU

- **B PNP (Sourcing)**
  - BN
  - BK
  - BU

**Library**

- Courtesy of Steven Engineering, Inc.  
  - 230 Ryan Way, South San Francisco, CA, 94080-6370  
  - Main Office: (650) 588-9200  
  - Outside Local Area: (800) 258-9200  
  - www.stevenengineering.com
**R-32SR**

**Ring Sensors, Large with Dynamic or Static Outputs**

*Plastic Housing with Integral Terminal Chamber*

- 3-Wire DC
- 10-30 VDC, Short-Circuit and Overload Protected
- Jumper Programmable; Normally Open or Normally Closed

### Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>ID Number</th>
<th>Drawing #</th>
<th>Part Number</th>
<th>ID Number</th>
<th>Drawing #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi20R-32SR-UN6X *</td>
<td>M14800 00</td>
<td>2</td>
<td>32SR-UN6X</td>
<td>M14820 00</td>
<td>2</td>
</tr>
<tr>
<td>Bi40R-32SR-UN6X *</td>
<td>M14802 00</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bi60R-32SR-UN6X *</td>
<td>M14803 00</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Bi20R-32SR-UP6X *</td>
<td>M14809 93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bi40R-32SR-UP6X *</td>
<td>M14809 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bi60R-32SR-UP6X *</td>
<td>M14809 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Complete sensor

Note: Remote mounting of switching amplifier and sensor head requires an RAC-1.6M or RAC-3.0M cable *(see drawing #2)*.

### Material

- Housing: PBT Plastic
- Terminal Chamber Cover: Trogamid T

### Accessories

Accessories and mounting devices can be found in Section J.
Specifications

Ripple ........................................... ≤10%
Voltage Drop Across Conducting Sensor .. ≤2.1 V at 200 mA
Trigger Current for Overload Protection .. ≥220 mA
Continuous Load Current ..................... ≤200 mA
Off-State (Leakage) Current ............... <10 μA
No-Load Current .............................. 25 mA
Power-On Effect ............................... Per IEC 947-5-2
Reverse Polarity Protection ............... Incorporated
Wire-Break Protection ....................... Incorporated
Transient Protection ....................... Per EN 60947-5-2
Operating Temperature for Ring Head .. -25°C to +100°C (-13°F to +212°F)
Operating Temperature for Amplifier . -20°C to +70°C (-8°F to +158°F)
Enclosure .......................... Meets NEMA 1,3,4,6,13 and IEC IP 67
Shock .................................. 30 g, 11 ms
Vibration .................................. 55 Hz, 1 mm Amplitude in all 3 Planes
LED On .................................. Output Energized

Dynamic and Static Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Dynamic Mode</th>
<th>Static Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differential Travel (Hysteresis)</td>
<td>3-15%</td>
<td></td>
</tr>
<tr>
<td>Output Pulse Width</td>
<td>10 ms - 1 s</td>
<td></td>
</tr>
</tbody>
</table>

(Adjustable by internal one-shot potentiometer)

Dimensions

![Dimensions Diagram]
## Slot Sensors

**Plastic Housing with Potted-In Cable**

3-Wire DC

10-30 VDC, Short-Circuit and Overload Protected

Normally Open, NPN (Sinking) or PNP (Sourcing)

### Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Slot Gap (mm)</th>
<th>Sensor Width (mm)</th>
<th>Sinking</th>
<th>Spacing</th>
<th>Drawing</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Weld Field Immune (LSI)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>S115-K30-AN6</td>
<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>M1605002</td>
</tr>
<tr>
<td>S115-K30-AN6X</td>
<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>M1605003</td>
</tr>
<tr>
<td>S115-K30-AP6</td>
<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>M1605000</td>
</tr>
<tr>
<td>S115-K30-AP6X</td>
<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>M1605001</td>
</tr>
</tbody>
</table>

### Cable/Conductor

- **Cable:** PVC Jacket; 2 meter standard length
- **Copper Conductor:** 22 AWG (PVC insulated)

### Material

- **Housing:** PBT-GF30-VO Plastic

### Accessories

Accessories and mounting devices can be found in Section J.
### Specifications

- **Ripple**: ≤10%
- **Differential Travel (Hysteresis)**: 3-15% (5% typical)
- **Voltage Drop Across Conducting Sensor**: ≤1.8 V at 500 mA
- **Trigger Current for Overload Protection**: ≥550 mA
- **Continuous Load Current**: ≤500 mA
- **Off-State (Leakage) Current**: <10 µA
- **Time Delay Before Availability**: ≤8 ms
- **Power-On Effect**: per IEC 947-5-2
- **Reverse Polarity Protection**: incorporated
- **Wire-Break Protection**: incorporated
- **Transient Protection**: per EN 60947-5-2
- **Operating Temperature**: -25°C to +70°C (-13°F to +158°F)
- **Enclosure**: meets NEMA 1,3,4,6,13 and IEC IP 67
- **Shock**: 30 g, 11 ms
- **Vibration**: 55 Hz, 1 mm Amplitude in all 3 Planes
- **Repeatability**: ≤2% of Rated Operating Distance
- **LED On**: Output Energized

### Dimensions

![Dimensions Diagram]

- 1.80 (30.01)
- 2.362 (60.03)
- 1.654 (42.02)
- 709 (18.03)
- 2.016 (50.30)
- 1.696 (48.0)
- 1.381 (30.0)

---

**Wiring Diagrams**

#### A  NPN (Sinking)

- BU
- BN
- BK
- LOAD

#### B  PNP (Sourcing)

- BU
- BN
- BK
- LOAD

---

![Wiring Diagrams Diagram]
TURCK
Inductive Sensors - Specialty

Si..-K
Slot Sensors
Plastic Housing with Potted-In Cable

4-Wire DC
10-30 VDC, Short-Circuit and Overload Protected
Complementary Outputs: One N.O., One N.C. (SPDT)

Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Slot (mm)</th>
<th>Housing Height (mm)</th>
<th>Sinking</th>
<th>Spacing</th>
<th>Drawing #</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Weld Field Immune (V3A)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si15-K30-VN6</td>
<td></td>
<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>A</td>
<td>0</td>
<td>350</td>
<td>M1605032</td>
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<td></td>
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<tr>
<td>Si15-K30-VP6</td>
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<td>15</td>
<td>30</td>
<td>•</td>
<td>1</td>
<td>B</td>
<td>0</td>
<td>350</td>
<td>M1605030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cable/Conductor

- Cable: PVC Jacket; 2 meter standard length
- Copper Conductor: 22 AWG (PVC insulated)

Material

- Housing: PBT-GF30-VO Plastic

Accessories

- Accessories and mounting devices can be found in Section J.
Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ripple</td>
<td>≤10%</td>
</tr>
<tr>
<td>Differential Travel (Hysteresis)</td>
<td>3-15% (5% typical)</td>
</tr>
<tr>
<td>Voltage Drop Across Conducting Sensor</td>
<td>≤1.8 V at 500 mA</td>
</tr>
<tr>
<td>Trigger Current for Overload Protection</td>
<td>≥520 mA</td>
</tr>
<tr>
<td>Continuous Load Current</td>
<td>≤500 mA</td>
</tr>
<tr>
<td>Off-State (Leakage) Current</td>
<td>&lt;10 μA</td>
</tr>
<tr>
<td>No-Load Current</td>
<td>5 mA</td>
</tr>
<tr>
<td>Time Delay Before Availability</td>
<td>≤8 ms</td>
</tr>
<tr>
<td>Power-On Effect</td>
<td>Per IEC 947-5-2</td>
</tr>
<tr>
<td>Reverse Polarity Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Wire-Break Protection</td>
<td>Incorporated</td>
</tr>
<tr>
<td>Transient Protection</td>
<td>Per EN 60947-5-2</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-25°C to +70°C (-13°F to +158°F)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Meets NEMA 1,3,4,6,13 and IEC IP 67</td>
</tr>
<tr>
<td>Shock</td>
<td>30 g, 11 ms</td>
</tr>
<tr>
<td>Vibration</td>
<td>55 Hz, 1 mm Amplitude in all 3 Planes</td>
</tr>
<tr>
<td>Repeatability</td>
<td>≤2% of Rated Operating Distance</td>
</tr>
</tbody>
</table>

Dimensions

![Dimensions Diagram]

Wiring Diagrams

A  NPN (Sinking)

B  PNP (Sourcing)
Si..-K

Slot Sensors
Plastic Housing with Potted-In Cable

4-Wire DC
10-30 VDC, TTL Compatible
Complementary Outputs: One N.O., One N.C. (SPDT)

Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Slot (mm)</th>
<th>Sensor Width (mm)</th>
<th>Sinking</th>
<th>Sourcing</th>
<th>Drawing</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Weld Field Immune (HzA)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si130-K33-VN7</td>
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<td>33</td>
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<td>100</td>
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<td>100</td>
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<tr>
<td>Si130-K33-VP7</td>
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<td>30</td>
<td>33</td>
<td>•</td>
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<td>0</td>
<td>100</td>
<td></td>
<td>100</td>
<td>M1726900</td>
<td></td>
</tr>
</tbody>
</table>

Cable/Conductor

Cable: PVC Jacket; 2 meter standard length
Copper Conductor: 22 AWG (PVC insulated)

Material

Housing: PBT-GF30-VO Plastic

Accessories

Accessories and mounting devices can be found in Section J.
Specifications

Ripple .............................................. ≤10%
Differential Travel (Hysteresis) ........ 3-15% (5% typical)
Voltage Drop Across Conducting Sensor . ≤1.0 V at 250 mA (0.3 V typical)
Continuous Load Current ................. ≤250 mA
Off-State (Leakage) Current .......... <10 µA
No-Load Current ......................... 18.0 mA
Time Delay Before Availability ........ ≤15 ms
Power-On Effect .......................... Per IEC 947-5-2
Reverse Polarity Protection ............. Incorporated
Wire-Break Protection .................... Incorporated
Transient Protection ..................... Per EN 60947-5-2
Operating Temperature ................ -25°C to +70°C (-13°F to +158°F)
Enclosure ................................. Meets NEMA 1,3,4,6,13 and IEC IP 67
Shock ........................................... 30 g, 11 ms
Vibration ...................................... 55 Hz, 1 mm Amplitude in all 3 Planes
Repeatability ............................... ≤2% of Rated Operating Distance

Dimensions

Wiring Diagrams

A  NPN (Sinking)

B  PNP (Sourcing)
TURCK
Inductive Sensors - Specialty

Slot Sensors
Plastic Housing with Potted-In Cable

2-Wire AC
20-250 VAC
Normally Open (AZ3) or Normally Closed (RZ3)

Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Slot (mm)</th>
<th>Sensor Width (mm)</th>
<th>Normally Open</th>
<th>Normally Closed</th>
<th>Drawing #</th>
<th>Wiring Diagram</th>
<th>Weld Field Immune (G34)</th>
<th>Switching Frequency (Hz)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si15-K30-AZ3</td>
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<td>15</td>
<td>30</td>
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<td>A</td>
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<td>M1306900</td>
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<tr>
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<td>30</td>
<td>33</td>
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<td>A</td>
<td>0</td>
<td></td>
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<td>M1307000</td>
</tr>
<tr>
<td>Si15-K30-RZ3</td>
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<td>15</td>
<td>30</td>
<td>1</td>
<td>B</td>
<td>0</td>
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<td></td>
<td>M1316900</td>
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<tr>
<td>Si130-K33-RZ3</td>
<td></td>
<td>30</td>
<td>33</td>
<td>2</td>
<td>B</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>M1317000</td>
</tr>
</tbody>
</table>

Cable/Conductor

Cable: PVC Jacket; 2 meter standard length
Copper Conductor: 21 AWG

Material

Housing: PBT-GF30-VO Plastic

Accessories

Accessories and mounting devices can be found in Section J.
Specifications

- **Line Frequency**: 40-60 Hz
- **Differential Travel (Hysteresis)**: 3-15% (5% typical)
- **Voltage Drop Across Conducting Sensor**: ≤7.0 V at 500 mA
- **Continuous Load Current**: ≤500 mA
- **Off-State (Leakage) Current**:
  - K30 style: ≤3.3 mA
  - K33 style: ≤1.7 mA
- **Minimum Load Current**: ≥5.0 mA
- **Inrush Current**: ≤8.0 A (≤10 ms, 5% Duty Cycle)
- **Time Delay Before Availability**:
  - K30 style: ≤40 ms
  - K33 style: ≤50 ms
- **Power-On Effect**: Per IEC 947-5-2
- **Transient Protection**: Per EN 60947-5-2
- **Operating Temperature**: -25°C to +70°C (-13°F to +158°F)
- **Enclosure**: Meets NEMA 1,3,4,6,13 and IEC IP 67
- **Shock**: 30 g, 11 ms
- **Vibration**: 55 Hz, 1 mm Amplitude in all 3 Planes
- **Repeatability**: ≤2% of Rated Operating Distance

Dimensions

![Diagram 1](image1.png)

![Diagram 2](image2.png)
## Slot Sensors

**Plastic Housing with Potted-In Cable**

- 2-Wire DC, Requires Remote Amplifier
- 5-30 VDC
- Variable Resistance Output, NAMUR (EN 50227)

### Sensor Selection

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Embeddable</th>
<th>Slot Cap (mm)</th>
<th>Housing Width (mm)</th>
<th>Drawing #</th>
<th>Wiring Diagram</th>
<th># of LEDs</th>
<th>Switching Frequency</th>
<th>FM Approved Division</th>
<th>Time Delay Before Availability (ms)</th>
<th>ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>S13.5-K10-Y1</td>
<td>3.5</td>
<td>10</td>
<td>1</td>
<td>A</td>
<td>0</td>
<td>3000</td>
<td>•</td>
<td>≤1</td>
<td>M1036500</td>
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<tr>
<td>Si 5-K09-Y1†</td>
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<td>9</td>
<td>2</td>
<td>A</td>
<td>0</td>
<td>5000</td>
<td>•</td>
<td>≤1</td>
<td>M1024000</td>
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<tr>
<td>S1 15-K30-Y1</td>
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<td>30</td>
<td>3</td>
<td>A</td>
<td>0</td>
<td>500</td>
<td>•</td>
<td>≤1</td>
<td>M1007600</td>
<td></td>
</tr>
</tbody>
</table>

* Factory Mutual approval applies only when used with Factory Mutual approved switching amplifiers.
† 0.5 meter cable leads.

### Cable/Conductor

- **K09 Cable**: PVC Jacket; 0.5 meter standard length
- **K10/K30 Cable**: PVC Jacket; 2 meter standard length
- **Copper Conductor**: K09/K10: 26 AWG
  - (PVC insulated)
    - K30: 21 AWG

### Material

- **Housing**: PBT-GF30-VO Plastic

### Accessories

Accessories and mounting devices can be found in Section J. Remote Amplifier required. Consult TURCK multimodul or Automation Controls catalog.
### Specifications

- **Differential Travel (Hysteresis):** 1-10% (5% typical)
- **Nominal Voltage:** 8.2 VDC (EN 50227)
- **Resistance Change from Nonactivated to Activated Condition:** 1.0 kΩ to 8.0 kΩ
- **Resulting Current Change:** ≥2.2 mA to ≤1.0 mA
- **Recommended Switching Point for Remote Amplifier:** 1.55 mA
- **Power-On Effect:** Realized in Amplifier
- **Reverse Polarity Protection:** Incorporated
- **Wire-Break Protection:** Realized in Amplifier
- **Transient Protection:** Realized in Amplifier
- **Operating Temperature:** -25°C to +70°C (-13°F to +158°F)
- **Enclosure:** Meets NEMA 1,3,4,6,13 and IEC IP 67
- **Shock:** 30 g, 11 ms
- **Vibration:** 55 Hz, 1 mm Amplitude in all 3 Planes
- **Repeatability:** ≤2% of Rated Operating Distance

### Dimensions

![Dimensions Diagram]

### Wiring Diagram

![Wiring Diagram]

**A**  NAMUR Output

- **BN:** CW (O) +
- **BU:** B (K) -
- **RELAY AMPLIFIER:** O