**Accessories**

**Cables**

**For Force, Torque and Strain Sensors**

Charge mode, high impedance piezoelectric measurement demands highly insulated coaxial cables and connectors to ensure an insulation resistance greater than $10^{13} \, \Omega$ throughout the measuring chain. Only low noise coaxial cables that produce very little triboelectricity during movement may be used. The connectors must be robust, sealed and resistant to dirt.

Kistler connectors have been developed specifically to meet these requirements and are made of stainless steel. Unlike galvanized connectors they are therefore not subject to any wear, and measurement reliability and accuracy are improved. All Kistler connectors contain an O-ring seal at the cable end and the connection end.

Most Kistler sensors have a connection with a KIAG 10-32 or M4 male thread. Connectors with a swivel nut and versions with an integral thread are available for both variants. The one-piece body of the connectors with an integral thread can be welded to the sensor in order to ensure that, for example when the sensor is firmly mounted, the screw connection cannot work loose. For the connection of connectors with an integral thread, cable and sensor must be able to rotate freely in relation to each other.

The selection chart shown on page 2 specifies the type numbers of the most commonly used connecting cables for force, torque and strain sensors. The individual types with available lengths are described on the following pages. The details of multiconductor and special application connecting cables may be found on the corresponding sensor data sheets. The abbreviation pos. stands for male and neg. for female connectors.

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**Fig. 1: Connector with swivel nut**

- Low noise cable with extruded Teflon sheath
- Built-in strain relief (no heat shrinkable sleeving necessary)
- O-ring seals against sensor connector
- Stainless steel swivel nut
- Gold-plated center spring made of Beryllium copper

**Fig. 2: Connector with integral thread**

- Low noise cable with extruded Teflon sheath
- Built-in strain relief (no heat shrinkable sleeving necessary)
- O-ring seals against sensor connector
- Integral thread in body of connector
- Gold-plated center spring made of Beryllium copper

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### Selection Chart for Connecting Cables

<table>
<thead>
<tr>
<th>M4x0,35 pos.</th>
<th>M4x0,35 pos. int. with pull-out thread</th>
<th>KIAG 10-32 pos. int.</th>
<th>KIAG 10-32 pos. int.</th>
<th>TNC pos.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>1926A...</td>
<td></td>
<td></td>
<td></td>
<td>M4x0,35 pos. int.</td>
</tr>
<tr>
<td>1655C...</td>
<td>1635C...</td>
<td>1957A...</td>
<td></td>
<td>KIAG 10-32 pos.</td>
</tr>
<tr>
<td>1943A...</td>
<td></td>
<td></td>
<td>1945A...</td>
<td>Mini-Coax neg.</td>
</tr>
<tr>
<td>1651C...</td>
<td>1923A...</td>
<td>1631C...</td>
<td>1939A...</td>
<td>1609B...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1641B...</td>
<td>1983AD...</td>
<td>1610A...</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1633C...</td>
<td>1941A...</td>
<td>1619B...</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TNC pos.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fischer Coax neg. KE 102A014-14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fischer Triax neg. KE 103A015-12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1645C...</td>
<td>1979A...</td>
</tr>
</tbody>
</table>

### Selection Chart for Extension Cables

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
<tr>
<td>1637C...</td>
<td></td>
<td></td>
<td></td>
<td>KIAG 10-32 pos.</td>
</tr>
<tr>
<td></td>
<td>1937A...</td>
<td>1603B...</td>
<td>1601B...</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1615B...</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TNC pos.</td>
</tr>
</tbody>
</table>
### Type 1601B...

**Connecting Cable BNC**

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>Temperature range</th>
<th>Smallest possible bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5/1/2/5/10/20/sp</td>
<td>–25 … 70 °C</td>
<td>10 mm</td>
</tr>
</tbody>
</table>

Cable plug: BNC pos.
Degree of protection (EN60529): IP40
Cable PVC: black ø3,2 mm
BNC pos.

### Type 1603B...

**Extension Cable BNC**

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>Temperature range</th>
<th>Smallest possible bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/5/10/20/50/sp</td>
<td>–25 … 70 °C</td>
<td>10 mm</td>
</tr>
</tbody>
</table>

Cable plug: BNC neg.
Degree of protection (EN60529): IP40
Cable PVC: black ø3,2 mm
BNC pos.

### Type 1609B...

**Connecting Cable for Sensors with TNC neg. Connector**

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>Temperature range</th>
<th>Smallest possible bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/5/10/20/50/sp</td>
<td>–25 … 70 °C</td>
<td>10 mm</td>
</tr>
</tbody>
</table>

Cable plug: TNC pos.
Degree of protection (EN60529): IP65
Cable PVC: black ø3,2 mm
BNC pos.

### Type 1610A...

**Connecting Cable for Sensors with TNC neg. Connector**

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>Temperature range</th>
<th>Smallest possible bending radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/5/10/sp</td>
<td>–55 … 200 °C</td>
<td>5 mm</td>
</tr>
</tbody>
</table>

Cable plug: TNC pos.
Degree of protection (EN60529): IP65
Cable PFA: green ø2 mm
BNC pos.

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### Type 1615B...
**Connecting Cable TNC Armored**

| Length (m) | 5/sp (L<sub>min</sub> = 1 m/L<sub>max</sub> = 10 m) |
| Temperature range | −25 … 70 °C |
| Smallest possible bending radius | 5 mm |

![Diagram of Type 1615B Cable TNC Armored](image)

**Cable plug**
- TNC pos.

**Degree of protection (EN60529)**
- IP65

**Cable**
- PVC black

**With flexible stainless steel hose**
- ø9,7 mm

**Type 1619B...
**Connecting Cable Armored for Sensors with TNC neg. Connector**

| Length (m) | 5/10/sp (L<sub>min</sub> = 1 m/L<sub>max</sub> = 20 m) |
| Temperature range | −25 … 70 °C |
| Smallest possible bending radius | 5 mm |

![Diagram of Type 1619B Cable Armored](image)

**Cable plug**
- TNC pos.

**Degree of protection (EN60529)**
- IP65

**Cable**
- PVC black

**With flexible stainless steel hose**
- ø9,7 mm

**Type 1631C...
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 0,5/1/2/3/5/10/20/sp (L<sub>min</sub> = 0,1 m/L<sub>max</sub> 50 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram of Type 1631C Cable](image)

**Cable plug**
- KIAG 10-32 pos.

**Degree of protection (EN60529)**
- IP65

**Cable**
- PFA green ø2 mm

**Type 1633C...
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 0,5/1/2/5/sp (L<sub>min</sub> = 0,1 m/L<sub>max</sub> = 50 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram of Type 1633C Cable](image)

**Cable plug**
- KIAG 10-32 pos.

**Degree of protection (EN60529)**
- IP65

**Cable**
- PFA green ø2 mm

**TNC pos.**
- 1813

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### Type 1635C…
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 0,5/1/2/5/10/sp (L\textsubscript{min} = 0,1 m/L\textsubscript{max} = 15 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram](1635C.png)

- Cable plug: KIAG 10-32 pos.
- Degree of protection (EN60529): IP65
- Cable PFA green ø2 mm
- KIAG 10-32 pos.

### Type 1637C…
**Extension Cable KIAG 10-32**

| Length (m) | 5/sp (L\textsubscript{min} = 0,3 m/L\textsubscript{max} = 5 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram](1637C.png)

- Cable plug: KIAG 10-32 neg.
- Degree of protection (EN60529): IP65
- Cable PFA green ø2 mm
- KIAG 10-32 pos.

### Type 1641B…
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 0,5/1/2/5/10/sp (L\textsubscript{min} = 0,1 m/L\textsubscript{max} = 50 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram](1641B.png)

- Cable plug: KIAG 10-32 pos. (90 °)
- Degree of protection (EN60529): IP65
- Cable PFA green ø2 mm
- BNC pos.

### Type 1645C…
**Connecting Cable for Sensors with M4x0,35 neg. Connector, Connector with M5 Pull-Out Thread**

| Length (m) | 0,2/0,4/0,6/0,8/sp (L\textsubscript{min} = 0,1 m/L\textsubscript{max} = 5 m) |
| Temperature range | −55 … 200 °C |
| Smallest possible bending radius | 5 mm |

![Diagram](1645C.png)

- Cable plug: M4x0,35 pos. int.
- Degree of protection (EN60529): IP65
- Cable PFA green ø2 mm
- Fischer Coax neg. KE 102A014-14
- IP65
Cables – For Force, Torque and Strain Sensors

**Type 1651C…** Connecting Cable for Sensors with M4x0,35 neg. Connector

- **Length (m)**: 0,5/1/2/5/10/sp (L_{\text{min}} = 0,3 m/L_{\text{max}} = 10 m)
- **Temperature range**: –55 … 200 °C
- **Smallest possible bending radius**: 5 mm

![Cable Diagram]

- **Cable plug**: M4x0,35 pos.
- **Degree of protection (EN60529)**: IP65
- **Cable PFA green ø 2 mm**
- **BNC pos.**: IP40

**Type 1655C…** Connecting Cable for Sensors with M4x0,35 neg. Connector

- **Length (m)**: 1/2/sp (L_{\text{min}} = 0,3 m/L_{\text{max}} = 10 m)
- **Temperature range**: –55 … 200 °C
- **Smallest possible bending radius**: 5 mm

![Cable Diagram]

- **Cable plug**: M4x0,35 pos.
- **Degree of protection (EN60529)**: IP65
- **Cable PFA green ø 2 mm**
- **KIAG 10-32 pos.**: IP65

**Type 1923A…** Connecting Cable for Sensors with M4x0,35 neg. Connector

- **Length (m)**: 1/sp (L_{\text{min}} = 0,1 m/L_{\text{max}} = 5 m)
- **Temperature range**: –55 … 200 °C
- **Smallest possible bending radius**: 5 mm

![Cable Diagram]

- **Cable plug**: M4x0,35 pos. int.
- **Degree of protection (EN60529)**: IP65
- **Cable PFA green ø 2 mm**
- **KIAG 10-32 pos. int.**: IP65

**Type 1926A…** Connecting Cable for Sensors with M4x0,35 neg. Connector

- **Length (m)**: 0,8/sp (L_{\text{min}} = 0,1 m/L_{\text{max}} = 10 m)
- **Temperature range**: –55 … 200 °C
- **Smallest possible bending radius**: 5 mm

![Cable Diagram]

- **Cable plug**: M4x0,35 pos. int.
- **Degree of protection (EN60529)**: IP65
- **Cable PFA green ø 2 mm**
- **M4x0,35 pos.**: IP65
### Type 1937A...

**Connecting and Test Cable, Mini Coax**

- **Length (m):** 1/sp ($L_{\text{min}} = 0.1 \text{ m}/L_{\text{max}} = 10 \text{ m}$)
- **Temperature range:** –55 … 200 °C
- **Smallest possible bending radius:** 5 mm

**Diagram:**

![Cable Diagram](image)

**Cable plug:** Mini-Coax pos.

**Degree of protection (EN60529):** IP40

**Cable PFA green ø2 mm**

**BNC pos.:** IP40

### Type 1939A...

**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

- **Length (m):** 1/2/3/sp ($L_{\text{min}} = 0.1 \text{ m}/L_{\text{max}} = 20 \text{ m}$)
- **Temperature range:** –55 … 200 °C
- **Smallest possible bending radius:** 5 mm

**Diagram:**

![Cable Diagram](image)

**Cable plug:** KIAG 10-32 pos. int.

**Degree of protection (EN60529):** IP40

**Cable PFA green ø2 mm**

**BNC pos.:** IP40

### Type 1941A...

**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

- **Length (m):** 1/2/3/sp ($L_{\text{min}} = 0.1 \text{ m}/L_{\text{max}} = 20 \text{ m}$)
- **Temperature range:** –55 … 200 °C
- **Smallest possible bending radius:** 5 mm

**Diagram:**

![Cable Diagram](image)

**Cable plug:** KIAG 10-32 pos. int.

**Degree of protection (EN60529):** IP65

**Cable PFA green ø2 mm**

**TNC pos.:** IP65

### Type 1943A...

**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

- **Length (m):** 1/2/3/sp ($L_{\text{min}} = 0.1 \text{ m}/L_{\text{max}} = 10 \text{ m}$)
- **Temperature range:** –55 … 200 °C
- **Smallest possible bending radius:** 5 mm

**Diagram:**

![Cable Diagram](image)

**Cable plug:** KIAG 10-32 pos. int.

**Degree of protection (EN60529):** IP65

**Cable PFA green ø2 mm**

**Mini-Coax neg.:** IP40

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### Type 1945A...
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**
The fact that this cable is very thin makes it highly suitable for use in molds.

| Length (m) | 1/2/sp (L_min = 0,1 m/L_max = 5 m) |
| Temperature range | –55 … 200 °C |
| Smallest possible bending radius | 3 mm |

Cable plug: KIAG 10-32 pos. int.
Degree of protection (EN60529): IP65
Cable: PFA blue ø1 mm
Mini-Coax: neg.

### Type 1951A...
**High Temperature Connecting Cable for Sensors with M4x0,35 neg. Connector**

| Length (m) | 0,4/sp (L_min = 0,1 m/L_max = 5 m) |
| Temperature range | –55 … 300 °C |
| Smallest possible bending radius | 8 mm |

Cable plug: M4x0,35 pos. int.
Degree of protection (EN60529): IP65
Cable: Kapton®
KIAG 10-32 pos. int.
Degree of protection (EN60529): IP65
Cable: KIAG 10-32 pos. int. with stainless steel sheathed ø2,6 mm
Degree of protection (EN60529): IP65

### Type 1957A...
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 1/sp (L_min = 0,1 m/L_max = 10 m) |
| Temperature range | –55 … 200 °C |
| Smallest possible bending radius | 10 mm |

Cable plug: KIAG 10-32 pos.
Degree of protection (EN60529): IP65
Cable: PFA green
KIAG 10-32 pos.
Degree of protection (EN60529): IP65

### Type 1967A...
**Connecting Cable for Sensors with KIAG 10-32 neg. Connector**

| Length (m) | 1/sp (L_min = 0,5 m/L_max = 10 m) |
| Temperature range | –55 … 200 °C |
| Smallest possible bending radius | 10 mm |

Cable plug: KIAG 10-32 pos. int.
Degree of protection (EN60529): IP65
Cable: PFA green
KIAG 10-32 pos. int.
Degree of protection (EN60529): IP65
Ground-isolated, stainless steel sheathed ø2,6 mm
Cables – For Force, Torque and Strain Sensors

Type 1969A… Connecting Cable for Sensors with KIAG 10-32 neg. Connector

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>1/sp (L_min = 0,5 m/L_max = 10 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>-55 … 200 °C</td>
</tr>
<tr>
<td>Smallest possible</td>
<td>10 mm</td>
</tr>
<tr>
<td>bending radius</td>
<td></td>
</tr>
</tbody>
</table>

Cable plug       KIAG 10-32 pos. int.
Degree of protection (EN60529) IP65
Cable PFA green   KIAG 10-32 pos. int.
with stainless steel sheathed ø2,6 mm IP65

Type 1979A… Connecting Cable for Sensors with KIAG 10-32 neg. Connector, incl. Clamping Angle for Cable Coupling

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>1/sp (L_min = 0,1 m/L_max = 20 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>-55 … 200 °C</td>
</tr>
<tr>
<td>Smallest possible</td>
<td>13,2 mm</td>
</tr>
<tr>
<td>bending radius</td>
<td></td>
</tr>
</tbody>
</table>

Cable plug       KIAG 10-32 pos. int.
Degree of protection (EN60529) IP65
Cable Viton® ø3,2 mm Fischer Triax neg. KE 103A015-12 IP65

Type 1983AB… Connecting Cable for Sensors with M4x0,35 neg. Connector

With protective cap vulcanized to the cable at the sensor end. Welding the connection provides a permanent seal. Suitable for use in the vicinity of oils, emulsions, cooling lubricants, etc.

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>0,5/1/1,5/2/3/5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>-55 … 200 °C</td>
</tr>
<tr>
<td>Smallest possible</td>
<td>5 mm</td>
</tr>
<tr>
<td>bending radius</td>
<td></td>
</tr>
</tbody>
</table>

Cable plug       M4x0,35 pos. int.
Degree of protection (EN60529) IP65 connection screwed IP65
Cable Viton® ø2 mm KIAG 10-32 pos. int.
IP67 connection welded

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Type 1983AC...

Connecting Cable for Sensors with KIAG 10-32 neg. Connector

With protective cap vulcanized to the cable at the sensor end. Welding the connection provides a permanent seal. Suitable for use in the vicinity of oils, emulsions, cooling lubricants, etc.

Length (m) 0,5/1/1,5/2/3/5/sp (L_{\text{min}} = 0,1 \text{ m}/L_{\text{max}} = 5 \text{ m})

Temperature range –55 … 200 °C

Smallest possible bending radius 5 mm

Cable plug KIAG 10-32 pos. int. 
Degree of protection (EN60529) IP65 connection screwed

Cable plug Cable Viton® ø2 mm KIAG 10-32 pos. int.
Degree of protection IP65

Type 1983AD...

Connecting Cable for Sensors with KIAG 10-32 neg. Connector

With protective cap vulcanized to the cable at the sensor end. Welding the connection provides a permanent seal. Suitable for use in the vicinity of oils, emulsions, cooling lubricants, etc.

Length (m) 2/5/sp (L_{\text{min}} = 0,1 \text{ m}/L_{\text{max}} = 5 \text{ m})

Temperature range –55 … 200 °C

Smallest possible bending radius 5 mm

Cable plug KIAG 10-32 pos. int. 
Degree of protection (EN60529) IP65 connection screwed

Cable plug Cable Viton® ø2 mm BNC pos.
Degree of protection IP67 connection welded

Degree of protection IP40
### Cable Koaxial Technical Data

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>Diameter</th>
<th>Temperature Range</th>
<th>Capacitance</th>
<th>Smallest Possible Bending Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PFA blue</strong></td>
<td>Ø1,0 mm</td>
<td>–55 … 200 °C</td>
<td>94 pF/m</td>
<td>3 mm</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td>Silver-plated copper alloy center conductor (1), PTFE dielectric (2) with semiconducting coating (3), silver-plated copper wire braid (4) and blue PFA sheath (5).</td>
</tr>
<tr>
<td><strong>PFA green</strong></td>
<td>Ø2,0 mm</td>
<td>–55 … 200 °C</td>
<td>96 pF/m</td>
<td>5 mm</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td>Copper- and silver-plated steel wire center conductor (1), PTFE dielectric (2) with semiconducting coating (3), silver-plated copper wire braid (4) and extruded green PFA sheath (5).</td>
</tr>
<tr>
<td><strong>PFA green with Stainless Steel Sheathing, ø2,6 mm</strong></td>
<td>Ø2,6 mm</td>
<td>–55 … 200 °C</td>
<td>100 pF/m</td>
<td>10 mm</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td>Copper- and silver-plated steel wire center conductor (1), PTFE dielectric (2) with semiconducting coating (3), silver-plated copper wire braid (4) and extruded green PFA sheath with stainless steel outer sheath (6).</td>
</tr>
<tr>
<td><strong>Kapton® with Stainless Steel Sheathing, ø2,6 mm</strong></td>
<td>Ø2,6 mm</td>
<td>–55 … 300 °C</td>
<td>105 pF/m</td>
<td>10 mm</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td></td>
<td></td>
<td>Nickel-plated copper wire center conductor (1), PI dielectric (2) wrapped with semiconducting tape (3), nickel-plated copper braid (4) and PI sheath (5) with stainless steel outer sheath (6).</td>
</tr>
</tbody>
</table>

This information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.
### Cables – For Force, Torque and Strain Sensors

<table>
<thead>
<tr>
<th>Cable Koaxial</th>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Viton®</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ø2.0 mm</strong></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>–90 ... 200 °C</td>
</tr>
<tr>
<td>Capacitance</td>
<td>107 pF/m</td>
</tr>
<tr>
<td>Smallest possible bending radius</td>
<td>5 mm</td>
</tr>
</tbody>
</table>

**Construction**
Silver-plated steel wire center conductor (1), extruded PTFE dielectric (2) with semiconducting coating (3), silver-plated copper wire braid (4) and oil-resistant FPM sheath (5).

| **Viton®**    | **ø3.2 mm**   |
| **ø3.2 mm**   |                |
| Temperature range | –90 ... 200 °C |
| Capacitance | 100 pF/m |
| Smallest possible bending radius | 10 mm |

**Construction**
Silver-plated steel wire center conductor (1), extruded PTFE dielectric (2) with semiconducting coating (3), silver-plated copper wire braid (4) and oil-resistant FPM sheath (5).

| PVC black     | **ø3.2 mm**   |
| **ø3.2 mm**   |                |
| Temperature range | –25 ... 70 °C |
| Capacitance | 100 pF/m |
| Smallest possible bending radius | 10 mm |

**Construction**
Bare copper wire center conductor (1), polyethylene dielectric (2), PVC semiconductor (3), bare copper wire braid (4) and black PVC sheath (5).

**Acronyms**
- **FPM** Fluoroelastomer (Viton®)
- **PFA** Perfluoroalkoxy copolymer
- **PI** Polyimide (Kapton®)
- **PTFE** Polytetrafluoroethylene
- **PVC** Polyvinyl chloride

Viton® is a registered Trademark of DuPont Performance Elastomers.
Kapton® is a registered Trademark of DuPont.
General Notes

Insulation Resistance
During final inspection all cables and lengths are tested to ensure their insulation resistance exceeds \( \geq 10^{14} \, \Omega \).

Protective Caps
All connectors are supplied with protective caps to prevent ingress of moisture and dirt. It is advisable to always replace the cap when the cable is not in use.

Degree of Protection
The IP degree of protection to EN60529 is tested with water. As oils, emulsions, cooling lubricants, etc, usually have a higher wetting and penetration capability, the degree of protection in contact with such fluids must be classified as being correspondingly lower.

Bending Radius
The smallest permissible bending radius of coaxial cables depends on the application. The specified value relates to the connecting cable for a firmly mounted sensor being bent once only. For repeated bending the values must be at least doubled, and for flexible use and/or low-temperature applications trebled or more.

Length Tolerance

<table>
<thead>
<tr>
<th>Cable length L (m)</th>
<th>Tolerance +…/–0 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0,5</td>
<td>10</td>
</tr>
<tr>
<td>&gt;0,5 … 1,0</td>
<td>20</td>
</tr>
<tr>
<td>&gt;1,0 … 5,0</td>
<td>50</td>
</tr>
<tr>
<td>&gt;5,0 … 10,0</td>
<td>100</td>
</tr>
<tr>
<td>&gt;10,0 … 20,0</td>
<td>150</td>
</tr>
<tr>
<td>&gt;20,0 … 30,0</td>
<td>200</td>
</tr>
<tr>
<td>&gt;30,0 … 50,0</td>
<td>500</td>
</tr>
<tr>
<td>&gt;50,0 … 75,0</td>
<td>750</td>
</tr>
<tr>
<td>&gt;75,0 … 100,0</td>
<td>1 000</td>
</tr>
</tbody>
</table>

Marking
The type number and the length of the cable are specified on the pack. The detachable part of the label can be folded and used to mark the cable.

Ordering Key

Type 1631C

Length
\[ L = x \text{ standard length in } m \]

Type 1957Asp

Length
\[ L = \text{sp} \]

(specify special length in order)