

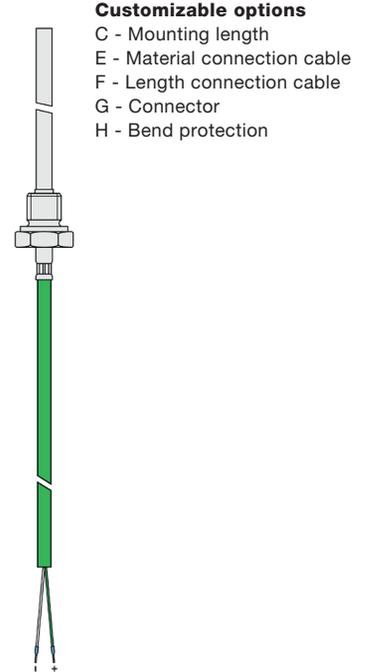
Thermocouple type K G3/8 " with silicone cable

Order nr.: 803160 3211

Screw-in thermocouples with silicone cable measure the temperature in pipes or vessels and can be used from -50 °C to +180 °C. Silicone seals well and remains flexible even at temperatures below freezing. To configure your screw-in thermocouple for your measurement task, simply select the required configuration features and send us the order code.



| General Information | |
|---|---|
| Measuring range | -40 °C to +180 °C |
| Perm. °C range cable | -50 °C to +180 °C |
| Accuracy | -40 °C to +375 °C: ±1,5 °C according to DIN IEC 60584 Class 1 |
| Response time | t63 / t99: information is available on request |
| Pull-out force | ≥ 30 N |
| Supply and output | |
| Measuring element | Thermocouple Type K |
| Measuring point | Measuring point isolated |
| Measurement signal | Thermovoltage |
| Ambient conditions | |
| Protection class | IP65 according DIN 60529 (depending on cable) |
| Humidity and moisture condensation resistance | according to application-specific qualification |
| Certificates and Standards | |
| Standards | DIN EN 61326-1:2013 DIN EN IEC 63000:2019-05 |
| Directive | RoHS 2011/65/EU 2014/30/EU |
| Certificates | Certificate of suitability (on request) |



| Screw-in thread | | | | | |
|-----------------|--------------------------|----------------------------------|---------------------|--------------------|-----------|
| Bild | Screw-in thread | | C - Mounting length | | Zeichnung |
| | Material | Stainless steel 1.4301 SUS 304 | Code | Length (mm) | |
| | Length (mm) | 12 | C0050 | 50 ¹⁾ | |
| | Process connection | G3/8 " | C0100 | 100 ¹⁾ | |
| | Wrench size | 24 | C0150 | 150 ¹⁾ | |
| | Protection sleeve | | C0200 | 200 ¹⁾ | |
| | Material | Stainless steel 1.4571 316TI | C0250 | 250 ¹⁾ | |
| | Mounting length (mm) | please choose | C0300 | 300 ¹⁾ | |
| | Ø (mm) | 6 ²⁾ | C0400 | 400 ¹⁾ | |
| | | | C0500 | 500 ¹⁾ | |

Other mounting lengths on request | ¹⁾Tolerance ± 1% | ²⁾ Tolerance ± 0,1 mm

| E - Cable material and configuration connection cable | | | | | | | | | | | | |
|---|--------------------|----------------------|------|-------------------------|-----------------------|------------------|-----------------|----------------------|----------------------|--------------|---------------------|--|
| Code | Type | Color | IP | From (°C) ¹⁾ | To (°C) ¹⁾ | Outside material | Material strand | Ø (mm) ²⁾ | Q (mm ²) | Color strand | Ω / m ⁴⁾ | |
| E8220 | Thermocouple cable | Type K ³⁾ | IP67 | -50 | +180 | Silicone | FEP | 3,6 | 0,22 | gn, wt | 4,50 | |

Insulation resistance: ≥ 100 MOhm at min. 100 VDC | ¹⁾Perm. range °C | ²⁾Tolerance ± 0,2 mm | ³⁾Color according to IEC 584 | ⁴⁾per thermocouple

RL / KS / 28.10.2021

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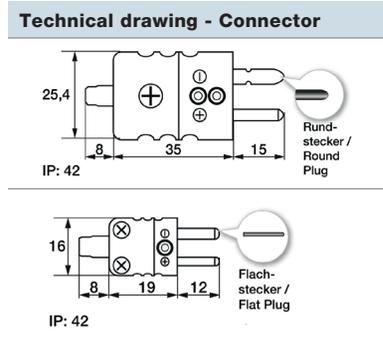


| F - Length | | | | | | | | |
|------------|------|------|------|------|------|------|------|------|
| Code | F010 | F020 | F030 | F040 | F050 | F100 | F150 | F200 |
| m | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 |

Other lengths on request

| G - Connector | | | | | |
|---|------|--------------------------------|---|------|------------------------|
| Picture | Code | Feature | Picture | Code | Feature |
|  | G01 | Insulated end ferrules (50 mm) | | | |
|  | G12 | Mini-TC connector Type K gn |  | G32 | TC connector Type K gn |
|  | G19 | Mini-TC connector Type K ye |  | G39 | TC connector Type K ye |

Other connectors available on request

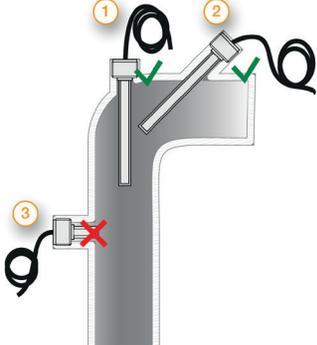


| H - Bend protection | | |
|---|-------------|---|
| Picture | Length (mm) | Material |
|  | 50 | Stainless steel spring 1.4310 SUS 302 |
| | Code | Feature |
| | H0 | Without (Standard) |
| | H1 | Metal bend protection |

| Your order code | | | | | |
|-----------------|-----------------|---------------------------|-------------------------|-----------|-----------------|
| Order nr. | Mounting length | Material connection cable | Length connection cable | Connector | Bend protection |
| 803160 3211 | C_____ | E_____ | F_____ | G_____ | H_____ |

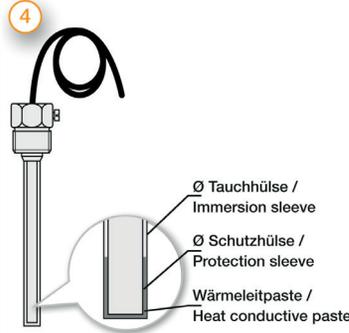
| Delivery and Assembly | |
|------------------------|--------------------------------------|
| Delivery and Packaging | Probe, separately packaged in PE bag |
| Assembly instructions | per process connection |

Important assembly advices



1) Installation with sufficient installation depth
2) Installation at an angle with small pipe Ø
3) Not like this: Minimum installation depth not reached

Measurement errors can occur due to heat dissipation to the environment. To keep these as small as possible, we recommend immersing the protection sleeve of your temperature probe as deeply as possible in the medium to be measured during installation. The optimum installation depth should be 10-15 times the Ø of the protection sleeve or, when using an immersion sleeve, the Ø of the immersion sleeve. When installing in pipelines whose Ø does not have a sufficiently deep installation depth, you should install the probe either at an angle or in a pipe elbow. Make sure that there is sufficient space for the probe to be removed.



4) Installation using an immersion sleeve

- Ø Tauchhülse / Immersion sleeve
- Ø Schutzhülse / Protection sleeve
- Wärmeleitpaste / Heat conductive paste

Installation by using an immersion sleeve (4): Please ensure that the Ø and length of the immersion sleeve are selected to suit the installation situation so that the minimum immersion depth can be achieved. Please also pay attention to the correct process connection. Since the probe is not inserted directly into the medium, but via the immersion sleeve, the response times are somewhat slower. The probe should be selected in such a way that the protection sleeve touches the bottom of the immersion sleeve and that the air cushion around the protection sleeve is as small as possible. The use of thermal paste can improve the response times. Please lay the cable in such a way that no water can penetrate the probe and with reserve loop (4). This allows you to extend the probe without disconnecting the electrical connection.



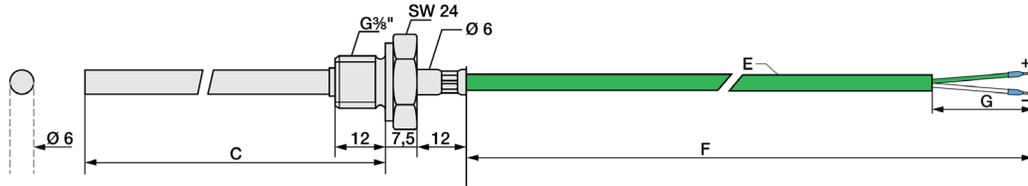
Technical drawing (All dimensions in mm)

Customizable options

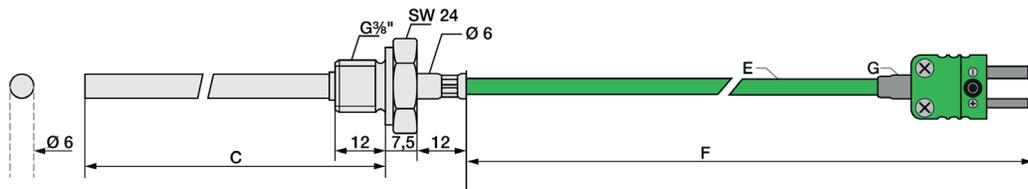
C - Mounting length
E - Material connection cable

F - Length connection cable
G - Connector
H - Bend protection

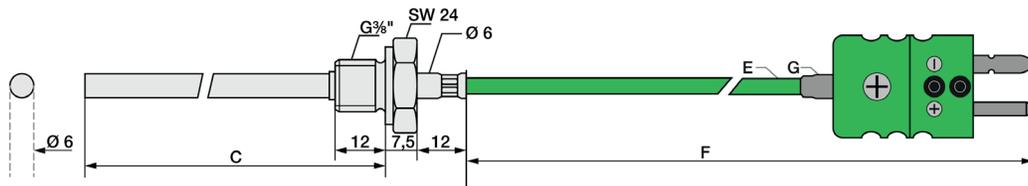
Version with insulated end ferrules



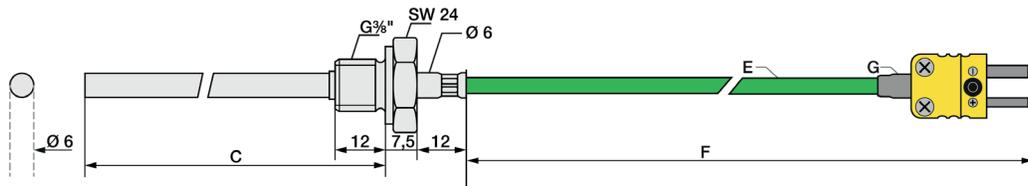
Version with mini TE connector



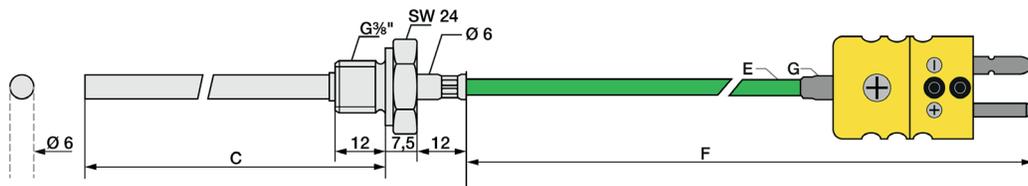
Version with TE connector



Version with mini TE connector



Version with TE connector



Matching accessories: Thermocouple cables & Connector

| Thermocouple cables - Please select your desired cable first. | | | | | | | | | | | | |
|---|--------------------|----------------------|------|-------------------------|-----------------------|------------------|-----------------|----------------------|----------------------|--------------|---------------------|--|
| Order code | Type | Color | IP | From (°C) ¹⁾ | To (°C) ¹⁾ | Outside material | Material strand | Ø (mm) ²⁾ | Q (mm ²) | Color strand | Ω / m ⁴⁾ | |
| 809310 2 | Thermocouple cable | Type K ³⁾ | IP67 | -50 | +180 | Silicone | FEP | 3,6 | 0,22 | gn, wt | 4,50 | |

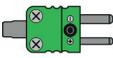
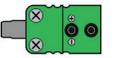
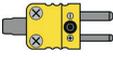
Insulation resistance: ≥ 100 MOhm at min. 100 VDC | ¹⁾per. °C range | ²⁾Tolerance ± 0.2 mm | ³⁾ Color according to IEC 584 | ⁴⁾per thermocouple

Now please select the length and add the code to the article no. of the cable.

| Length (m) | 1 | 2 | 5 | 10 | 20 |
|------------|-----|-----|-----|-----|-----|
| Code | 010 | 020 | 050 | 100 | 200 |

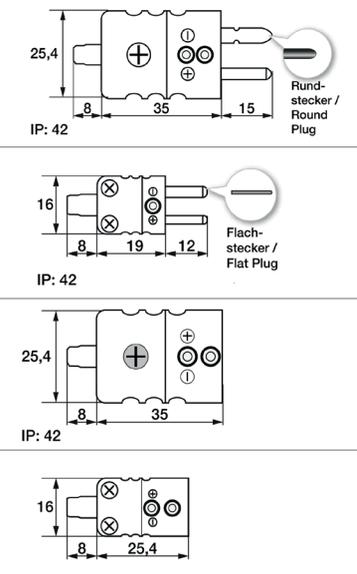
Please append these digits to the part number of your desired cable.

Matching accessories: Connector

| Connector | | | | | |
|---|-------------|-----------------------------|---|-------------|----------------------------|
| Picture | Code | Feature | Picture | Code | Feature |
|  | 809140 2000 | Mini-TC connector Type K gn |  | 809100 2000 | Mini-TC coupling Type K gn |
|  | 809150 2000 | TC connector Type K gn |  | 809110 2000 | TC coupling Type K gn |
|  | 809140 2001 | Mini-TC connector Type K ye |  | 809100 2001 | Mini-TC coupling Type K ye |
|  | 809150 2001 | TC connector Type K ye |  | 809110 2001 | TC coupling Type K ye |

Other connectors available on request

Technical drawing - Connector



Technical drawings showing dimensions for Round Plug (Rundstecker / Round Plug) and Flat Plug (Flachstecker / Flat Plug) connectors. Dimensions include 25,4, 8, 35, 15, 16, 19, 12, and 25,4 mm. IP: 42 is noted for all drawings.

Matching accessories: Heat-conducting paste

| Heat-conducting paste | | |
|-----------------------|-------------------|--|
| Article no. | 809540 1000 | |
| Content | 10 ml | |
| Thermal conductivity | >2.5 W/mK | |
| Min / Max °C | -30 °C to +280 °C | |
| Thermal resistance | < 0.126 | |

Details of accessories can be found on our website.

RL / KS / 28.10.2021

