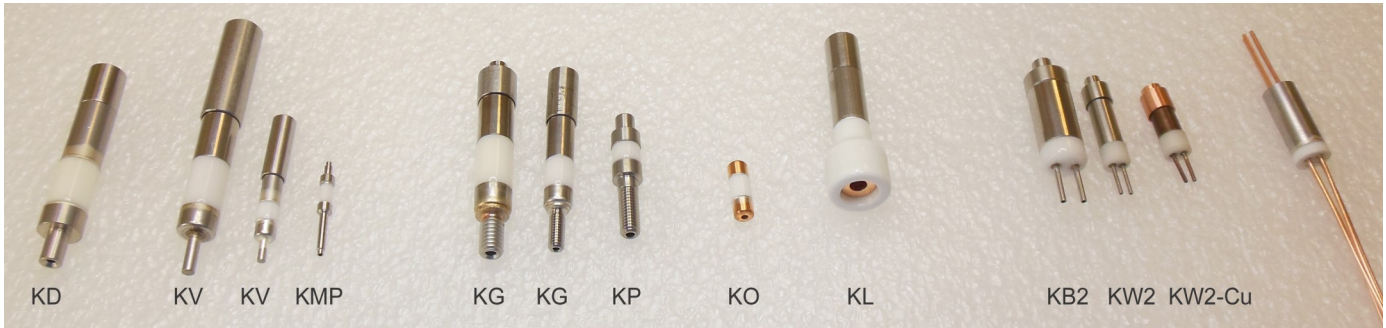


Electrical connection (metal-ceramic)



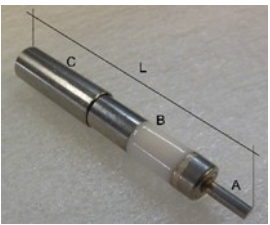
Mineral insulated (MI) cables require due to their special construction a special type of end contact sealing the cable. Due to the hygroscopic insulation material (MgO, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>) between current-carrying inner conductor and metallic sheath make it necessary to perform a excellent sealing of cable ends from the surrounding atmosphere.

For the contacting of the MI cable especially at high temperatures and in vacuum, metal-ceramic composite components have a big importance.

**General handling:**

Protect ceramic components from impact, shock and excessive mechanical stress!  
This can cause hairline cracks and thus lead to failure!

**Typ KV**

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension   | Design and working temperature   |
|---------------------------|------------|--------------------------|---|--|
| 1,0                       | KV-1,0     | 10,0                     | L= 40mm; $\varnothing$ A= 2mm; $\varnothing$ B= 5mm; $\varnothing$ C= 6mm   | 550°C (short), 400°C (constant)<br> |
| 1,5                       | KV-1,5     | 12,5                     |   |  |
| 2,0                       | KV-2,0     | 17,5                     |   |  |
| 2,5                       | KV-2,5     | 24,0                     |   |  |
| 3,0                       | KV-3,0     | 30,0                     | L= 55mm; $\varnothing$ A= 2mm; $\varnothing$ B= 7mm; $\varnothing$ C= 8mm   |  |
| 4,0                       | KV-4,0     | 40,0                     | L= 70mm; $\varnothing$ A= 3mm; $\varnothing$ B= 9mm; $\varnothing$ C= 10mm  |  |
| 5,0                       | KV-5,0     | 60,0                     | L= 70mm; $\varnothing$ A= 4mm; $\varnothing$ B= 11mm; $\varnothing$ C= 12mm |  |

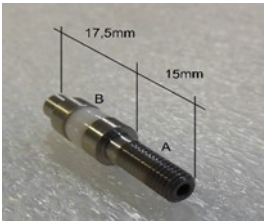
Electrical connection (metal-ceramic)

General handling:

Protect ceramic components from impact, shock and excessive mechanical stress!  
This can cause hairline cracks and thus lead to failure!

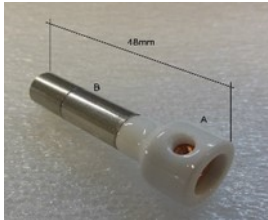
Typ KP

| Heater $\varnothing$<br>[mm] | Order Code | max. current [A]<br>at 20°C | Dimension                              | Design and working temperature  |
|------------------------------|------------|-----------------------------|--|---------------------------------|
| 1,5                          | KP-1,5     | 12,5                        | L= 32,5mm; A= M5; $\varnothing$ B= 8mm | 550°C (short), 500°C (constant) |
| 2,0                          | KP-2,0     | 17,5                        |  |                                 |
| 2,5                          | KP-2,5     | 24,0                        |  |                                 |
| 3,0                          | KP-3,0     | 30,0                        |  |                                 |



Typ KL

| Heater $\varnothing$<br>[mm] | Order Code | max. current [A]<br>at 20°C | Dimension  | Design and working temperature  |
|------------------------------|------------|-----------------------------|--|---------------------------------|
| 1,0                          | KL-1,0     | 10,0                        | L= 48mm; $\varnothing$ A= 15mm; $\varnothing$ B= 9mm | 550°C (short), 400°C (constant) |
| 1,5                          | KL-1,5     | 15,0                        |  |                                 |
| 2,0                          | KL-2,0     | 20,0                        |  |                                 |
| 2,5                          | KL-2,5     | 24,0                        |  |                                 |
| 3,0                          | KL-3,0     | 30,0                        |  |                                 |

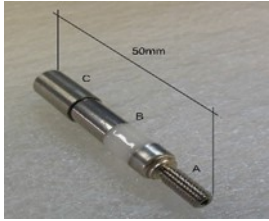
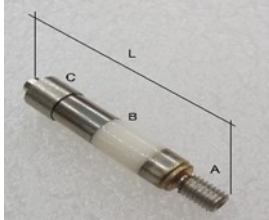


Electrical connection (metal-ceramic)

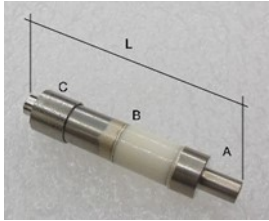
**General handling:**

Protect ceramic components from impact, shock and excessive mechanical stress!  
This can cause hairline cracks and thus lead to failure!

**Typ KG**

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension   | Design and working temperature   |
|---------------------------|------------|--------------------------|---|--|
| 1,0                       | KG-1,0     | 10,0                     | L= 50mm; A= M4; $\varnothing$ B= 7mm; $\varnothing$ C= 8mm  | 550°C (short), 400°C (constant)<br>  |
| 1,5                       | KG-1,5     | 15,0                     |   |  |
| 2,0                       | KG-2,0     | 20,0                     |   |  |
| 2,5                       | KG-2,5     | 24,0                     |   |  |
| 3,0                       | KG-3,0     | 30,0                     |   |  |
| 4,0                       | KG-4,0     | 40,0                     | L= 55mm; A= M6; $\varnothing$ B= 9mm; $\varnothing$ C= 10mm | 550°C (short), 400°C (constant)<br> |
| 5,0                       | KG-5,0     | 60,0                     |   |  |

**Typ KD**

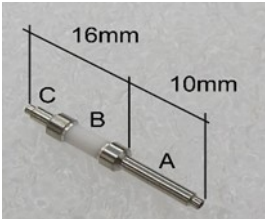
| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension  | Design and working temperature   |
|---------------------------|------------|--------------------------|--|--|
| 3,5                       | KD-3,5     | 30,0                     | L= 51mm; $\varnothing$ A= 5mm; $\varnothing$ B= 9mm; $\varnothing$ C= 10mm | 550°C (short), 400°C (constant)<br> |
| 4,0                       | KD-4,0     | 40,0                     |  |  |
| 5,0                       | KD-5,0     | 60,0                     |  |  |

Electrical connection (metal-ceramic)

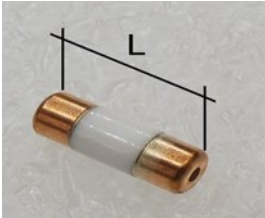
General handling:

Protect ceramic components from impact, shock and excessive mechanical stress!  
This can cause hairline cracks and thus lead to failure!

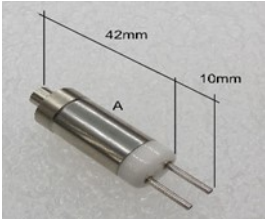
Typ KMP

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension   | Design and working temperature   |
|---------------------------|------------|--------------------------|---|--|
| 1,0                       | KMP-1,0    | 10,0                     | L= 26mm; $\varnothing$ A= 2mm; $\varnothing$ B= 3,6mm; $\varnothing$ C= 2mm | 550°C (short), 500°C (constant)<br> |

Typ KO-Cu

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension                    | Design and working temperature   |
|---------------------------|------------|--------------------------|------------------------------|--|
| 1,0                       | KO-Cu 1,0  | 10,0                     | L= 15mm; $\varnothing$ = 5mm | 550°C (short), 400°C (constant)<br> |
| 1,5                       | KO-Cu 1,5  | 12,5                     |                              |  |

Typ KB2

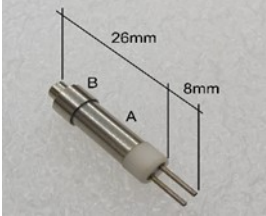
| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension                      | Design and working temperature   |
|---------------------------|------------|--------------------------|--------------------------------|--|
| 1,0                       | KB2-1,0    | 4,0                      | L= 52mm; $\varnothing$ A= 11mm | 550°C (short), 400°C (constant)<br> |
| 1,5                       | KB2-1,5    | 7,0                      |                                |  |
| 2,0                       | KB2-2,0    | 10,0                     |                                |  |
| 2,5                       | KB2-2,5    | 12,0                     |                                |  |
| 3,0                       | KB2-3,0    | 15,0                     |                                |  |
| 4,0                       | KB2-4,0    | 20,0                     |                                |  |
| 5,0                       | KB2-5,0    | 24,0                     |                                |  |

Electrical connection (metal-ceramic)

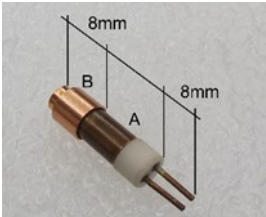
General handling:

Protect ceramic components from impact, shock and excessive mechanical stress!  
This can cause hairline cracks and thus lead to failure!

Typ KW2

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension   | Design and working temperature  |
|---------------------------|------------|--------------------------|---|---|
| 1,0                       | KW2-1,0    | 4,0                      | L= 34mm; $\varnothing$ A= 6mm; $\varnothing$ B= 7mm | 550°C (short), 400°C (constant)<br> |
| 1,5                       | KW2-1,5    | 7,0                      |   |   |
| 2,0                       | KW2-2,0    | 10,0                     |   |   |
| 2,5                       | KW2-2,5    | 12,0                     |   |   |

Typ KW2-Cu

| Heater $\varnothing$ [mm] | Order Code | max. current [A] at 20°C | Dimension   | Design and working temperature   |
|---------------------------|------------|--------------------------|---|--|
| 1,0                       | KW2 Cu-1,0 | 4,0                      | L= 28mm; $\varnothing$ A= 6mm; $\varnothing$ B= 7mm | 550°C (short), 400°C (constant)<br> |
| 1,5                       | KW2 Cu-1,5 | 7,0                      |   |  |
| 2,0                       | KW2 Cu-2,0 | 10,0                     |   |  |
| 2,5                       | KW2 Cu-2,5 | 12,0                     |   |  |