**Application**
- For technical temperature measurements in combustion processes and hot-gas environments,
- primarily in all types of furnaces up to 1200°C (shortly 1300°C)
- The sensor is special developed for use in...
  - Refuse and hazardous waste incinerations plants.
- The combination of high temperature, corrosive gasses and particles demands special features in relation to life-time for the sensor and minimize process down-time

**Technical features**
- Thermocouple type N and K acc to IEC584-1
- Interchangeable measuring insert, mineral insulated with high heat and corrosiveresistance sheath
- Connected to the process by adjustable flange, gas-tight flange or compression fitting
- Gas-tight ceramic protective tube in KER 610 or KER 710
- Modular design and standard length minimize the necessary numbers of spares
- Optionally, can be supplied with head mounted transmitter

**Ordering**
The requested sensor is selected from the table below
The colour code means:
- **Standard:** Built of standard modules (short delivery time)
- **Variant:** Modified standard modules
- **Special:** Special versions and material. We are specialist in temperature measurement. Please contact us and we will to our best do solve your specific measuring task.

**Specifications information**

<table>
<thead>
<tr>
<th>Protective tube, ceramic</th>
<th>Sensor</th>
<th>Transmitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>KER 610. Al₂O₃&gt;60% max. 1400°C</td>
<td>1106-4</td>
<td>4mA: 0°C 20mA: 3°C</td>
</tr>
<tr>
<td>KER 710. Al₂O₃&gt;99.7% max. 1700°C</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>OD 15x2.5mm KER 610</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>OD 15x2.5mm KER 710</td>
<td>Special</td>
<td>8</td>
</tr>
</tbody>
</table>

**Nominal length (mm)**
- 500: 0 5 0 0 0 0
- 710: 0 7 1 0 0 0
- 1000: 0 0 0 0 0 0
- 1400: 0 4 0 0 0 0
- 2000: 0 0 0 0 0 0
- Interim lengths (Min. 250, max. 2000): X X X X X X

**Retaining tube**
- OD 22x2x150mm steel 35 | 1 | 0 | 1 |
- OD 22x2x500mm steel 35 | 1 | 0 | 1 |
- OD 22x2x1000mm steel 35 | 2 | 0 | 1 |
- OD 22x2L=mm steel 35 | 6 | 0 | 1 |
- Special | Special | Special | Special | Special |

**Process connection (see page 2)**
- None | 0 |
- Fig. 1 Adjustable flange | 1 |
- Fig. 1+2 Adjustable flange (for metallic tube)+counter fl. (ceramic tube) | 2 |
- Fig. 3 1° BSP Compression fitting for OD 22mm retaining tube | 3 |
- Special | Special |

**Connection head**
- A: Degree of protection IP 53 | 6 |
- AHSHT: Degree of protection IP 53, high cap for transmitter | Special |

**Accessories**
- Process connection: See data sheet 9113
- Transmitter: See data sheet 9168

**Customer information**
- Name: 
- Tel.: 

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**Tolerance acc. to IEC 584-2**
- Class 2, for K and N, i.e. ±2.5°C or 0.0075 x t actual (°C) 2)
- Class 1, for K and N, i.e. ±1.5°C or 0.0040 x t actual (°C) 2)
- Note 2: The highest value apply

**Number of thermocouples**
- 1 Special

**Measuring insert**
- Thermocouple Type Diameter Sheath material Max. temp. 1)
  - NiCr-Ni N 6.0mm Nicrobell C 1200°C
  - NiCr-Ni K 6.0mm W.no.1.4841 1000°C
- Special
- Note 1: The values apply for the thermocouple

---

**Modular design and standard length minimize the necessary numbers of spares**
**Gas-tight ceramic protective tube in KER 610 or KER 710**
**Connected to the process by adjustable flange, gas-tight flange or compression fitting**
**Thermocouple type N and K acc to IEC584-1**
**Interchangeable measuring insert, mineral insulated with high heat and corrosiveresistance sheath**
**The sensor is special developed for use in...**
**Primarily in all types of furnaces up to 1200°C (shortly 1300°C)**
**For technical temperature measurements in combustion processes and hot-gas environments,**
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**Optionally, can be supplied with head mounted transmitter**
**Please contact us and we will to our best do solve your specific measuring task.**
TECHNICAL DATA

Dimensions

Complete thermocouple assembly AKT
Connection head
Type A
Type AHSH (for transmitter)

Measuring insert
Mineral insulated

Transmitter as terminal block

Protective tube

Features
KER 870 (C510)
Al₂O₃>60%
2 mm
2.5 mm
Gas-tight
Yes
Yes, very much
Resistance to thermal shocks
Good
Minor good
Mechanical strength
Good, sensitive to impact
Very good, sensitive to impact

Properties for sheaths of M1

Application
Nicrobell C
max. 1250°C
Liquids
Suitable
Acid
Not recommended
Sulphur atmospheres
Not recommended
Clorine atmospheres
Suitable
Oxidising atmospheres
Recommended
Reducing atmospheres
Suitable
Eutecting atmospheres
Recommended

Process connection

Adjustable flange DIN 43734
Steel W.no. 1.0401

Retaining tube Dimensions

<table>
<thead>
<tr>
<th>Retaining tube</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d2</th>
<th>d3</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD 22</td>
<td>90</td>
<td>65</td>
<td>70</td>
<td>33</td>
<td>23</td>
</tr>
</tbody>
</table>

Compression fitting for steel tube
Steel W.no. 1.0718
Max. 1 bar, gas-tight, ceramic sealing

Retaining tube Thread

<table>
<thead>
<tr>
<th>Retaining tube</th>
<th>OD 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thread</td>
<td>1&quot; BSP</td>
</tr>
</tbody>
</table>

Response time

<table>
<thead>
<tr>
<th>Protective tube</th>
<th>Response times in seconds (guidelines)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In water @ 0.4m/sec.</td>
</tr>
<tr>
<td>OD 15</td>
<td>t₀.₅</td>
</tr>
<tr>
<td></td>
<td>–</td>
</tr>
</tbody>
</table>

Note:
The 0.5/0.9 time is the time that it takes the sensor to reach 50%/90% of the final value of a temperature change of a medium. If media and velocity are different from the ones stated, the time can change significantly.

Connection diagram

<table>
<thead>
<tr>
<th>Thermocouple</th>
<th>Transmitter FPTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single TC</td>
<td></td>
</tr>
<tr>
<td>Duplex TC</td>
<td></td>
</tr>
</tbody>
</table>

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