Measuring insert
For high-temperature thermocouple
Model TC85

Applications
■ Replacement measuring insert for servicing
■ Furnaces, kilns and ovens
■ Furnaces with oxidizing and neutral atmosphere
■ Glass, fibre and ceramic industries
■ Research and development facilities

Special features
■ Application ranges from 0 ... 1,700 °C
■ Manufactured from the finest high-purity, high-temperature ceramics and metals
■ Suitable for mounting in ceramic thermowells

Description
TC85 series thermocouples are alumina ceramic insulated sensors for use in extreme high-temperature applications. The high-purity ceramic insulator is designed with continuous multiple holes and houses the noble metal thermocouple wire. A variety of mounting and termination styles are available.

Fig. left: fish spine insulators
Fig. centre: transition with lead wire
Fig. right: terminal plate with lead wire

WIKA data sheet TE 66.85 ∙ 01/2020
Sensor

Thermocouple per IEC 60584-1 or ASTM E230
Type S, R or B (single or dual thermocouple)

Sensor types

<table>
<thead>
<tr>
<th>Type</th>
<th>Operating temperatures of the thermocouple</th>
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<tr>
<td></td>
<td>IEC 60584-1</td>
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<td></td>
<td>Class 1</td>
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<tr>
<td>S</td>
<td>1,600 °C</td>
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<tr>
<td>R</td>
<td>1,600 °C</td>
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<td>B</td>
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The application range of these thermometers is limited by the permissible maximum temperature of the thermocouple and by the maximum permissible temperature of the thermowell material.

Listed thermocouples are available both as single and dual. The measuring point (hot junction) of the probe is supplied ungrounded.

For detailed specifications for thermocouples, see IEC 60584-1 or ASTM E230 and Technical information IN 00.23 at www.wika.com.

Tolerance value

For the tolerance value of thermocouples, a cold junction temperature of 0 °C has been taken as the basis.

Electrical connection

The colour coding at the positive poles of the instrument decides the correlation of polarity and terminal.

For the electrical connections of built-in temperature transmitters see the corresponding data sheets or operating instructions.
Examples of sensor designs

**Lead wire insulation**
- Individual fibreglass leads
- Individual PTFE leads
- Fish spines

**Termination accessories**
- Wire clamp
- Compression adapter
- Dual compression adapter

**Terminations**
- Stripped leads
- Spade lugs
- Standard plug 2-pin (male)
- High-temperature standard plug 2-pin (male)
- Standard solid pin plug 2-pin (male)
- Copper sleeves

**Materials**
- **Sheath material**
  - Aluminum oxide ceramic (alumina)
Ordering information
Model / Sensor / Sensor design / Lead wire insulation / Terminations / Termination accessories / Options