## Temperature

### NiCr-Ni thermowire T 190-0

<table>
<thead>
<tr>
<th>Accuracy:</th>
<th>NiCr-Ni class 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation:</td>
<td>Glass fiber (wires and sheath)</td>
</tr>
<tr>
<td>Operating temp.:</td>
<td>-25°C to +400°C</td>
</tr>
<tr>
<td>Wire diameter:</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>External diameter:</td>
<td>approx. 1.3 x 2.1 mm</td>
</tr>
</tbody>
</table>

- NiCr-Ni thermowire per meter with glass fiber covering: **Order no. LT01900**
- NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long: **Order no. FTA3900**
- ALMEMO® connector 5m long: **Order no. FTA3900L05**

### NiCr-Ni thermowire T 190-1

<table>
<thead>
<tr>
<th>Accuracy:</th>
<th>NiCr-Ni class 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation:</td>
<td>Glass fiber (wires and sheath)</td>
</tr>
<tr>
<td>Operating temp.:</td>
<td>-25°C to +400°C</td>
</tr>
<tr>
<td>Wire diameter:</td>
<td>0.2 mm</td>
</tr>
<tr>
<td>External diameter:</td>
<td>approx. 0.6 x 1.0 mm</td>
</tr>
</tbody>
</table>

- NiCr-Ni thermowire per meter with glass fiber covering: **Order no. LT01901**
- NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long: **Order no. FTA3901**
- ALMEMO® connector 5m long: **Order no. FTA3901L05**

### NiCr-Ni thermowire T 190-2

<table>
<thead>
<tr>
<th>Accuracy:</th>
<th>NiCr-Ni class 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation:</td>
<td>PVC (wires and sheath)</td>
</tr>
<tr>
<td>Operating temp.:</td>
<td>-10°C to +105°C</td>
</tr>
<tr>
<td>Wire diameter:</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>External diameter:</td>
<td>approx. 2.2 x 3.4 mm</td>
</tr>
</tbody>
</table>

- NiCr-Ni thermowire per meter with PVC insulation: **Order no. LT01902**
- NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long: **Order no. FTA3902**
- ALMEMO® connector 5m long: **Order no. FTA3902L05**

### NiCr-Ni thermowire T 190-3

<table>
<thead>
<tr>
<th>Accuracy:</th>
<th>NiCr-Ni class 2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation:</td>
<td>Silicone (wires and sheath)</td>
</tr>
<tr>
<td>Operating temp.:</td>
<td>-45°C to +200°C</td>
</tr>
<tr>
<td>Wire diameter:</td>
<td>0.5 mm</td>
</tr>
<tr>
<td>External diameter:</td>
<td>approx. 4 mm</td>
</tr>
</tbody>
</table>

- NiCr-Ni thermowire per meter with silicone insulation: **Order no. LT01903**
- NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long: **Order no. FTA3903**
- ALMEMO® connector 5m long: **Order no. FTA3903L05**

* Range of validity see page 07.03

DAkkS or factory calibration KT90xx temperature for sensor or measuring chain (sensor + device) (see chapter Calibration certificates)
DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

07.18
NiCr-Ni thermowire T 190-10

- Accuracy: NiCr-Ni class 2*
- Insulation: FEP (Wires and sheath)
- Operating temp.: -200°C to +205°C
- Wire diameter: 0.5 mm
- External diameter: approx. 1.5 x 4 mm

NiCr-Ni thermowire per meter with FEP insulation  Order no. LT019010
NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long Order no. FTA39010
ALMEMO® connector 5m long Order no. FTA39010L05

NiCr-Ni thermowire T 190-11

- Accuracy: NiCr-Ni class 2*
- Insulation: FEP (Wires and sheath)
- Operating temp.: -200°C to +205°C
- Wire diameter: 0.2 mm
- External diameter: approx. 1.3 x 2 mm

NiCr-Ni thermowire per meter with FEP insulation  Order no. LT019011
NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long Order no. FTA39011
ALMEMO® connector 5m long Order no. FTA39011L05

NiCr-Ni thermowire T 190-7

- Accuracy: NiCr-Ni class 2*
- Insulation: Ceramic fiber (Wires and sheath)
- Operating temp.: -40°C to +1200°C
- Wire diameter: 0.8 mm
- External diameter: approx. 3 x 4 mm

NiCr-Ni thermowire per meter with ceramic fiber insulation  Order no. LT01907
NiCr-Ni thermowire sensor, welded tip, with ALMEMO® connector 1.5m long Order no. FTA3907
ALMEMO® connector 5m long Order no. FTA3907L05

Nur für trockene, nicht aggresive Umgebung!

NiCr-Ni compensation line T 191-1

- Compensation line: NiCr-Ni
- Insulation: PVC (Wires and sheath)
- Operating temp.: -10°C to +105°C
- Wire diameter: 0.5 mm
- External diameter: approx. 3.6 mm

NiCr-Ni bunched conductor with PVC insulation, for each meter  Order no. LT01911

Other types are available on request.
LT01912 Insulation Silicone/silicone/glass filament, up to 200°C
LT01913 Insulation PVC / screening film / PVC, up to 105°C

NiCr-Ni thermal line (Litze) T 191-6

- Thermal line (stranded wire): NiCr-Ni*
- Insulation: Wires : FEP, sheath : silicone
- Operating temp.: -50...+200°C
- Wire diameter: 0.7 mm
- External diameter: approx. 3.8 mm

NiCr-Ni thermal line (stranded wire) with FEP / silicone insulation, per meter  Order no. LT01916

* Range of validity see page 07.03
** There is no adverse temperature effect at the juncture from measuring element to cable. see page 07.03

DAkkS or factory calibration KT90xx temperature for sensor or measuring chain (sensor + device) (see chapter Calibration certificates)
DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.
ALMEMO® connector for thermocouples (see Chapter Input connectors)

For Types K, N, L, J, T
(no thermo-electric transition / with thermal material)
NiCr-Ni (K) Order no. ZA9020FS
NiCrSil-NiSil (N) Order no. ZA9021FSN
Fe-CuNi (J) Order no. ZA9021FSJ
Cu-CuNi (T) Order no. ZA9021FST

For Types U, S, R, B, AuFe-Cr
Cu-CuNi (U) Order no. ZA9000FSU
PtRh10-Pt (S) Order no. ZA9000FSS
PtRh13-Pt (R) Order no. ZA9000FSR
PtRh30-PtRh6 (B) Order no. ZA9000FSB
AuFe-Cr (A) Order no. ZA9000FSA

ALMEMO® adapter plug with miniature flat socket

For Types K, J, T, S
NiCr-Ni (K) Order no. ZKA029RA
Fe-CuNi (J) Order no. ZJA029RA
Cu-CuNi (T) Order no. ZTA029RA
PtRh-Pt (S) Order no. ZSA029RA

Miniature flat connectors for thermocouples types K, J, T, S, E

Examples for NiCr-Ni (K):
NiCr-Ni flat socket Order no. ZK9029FB
NiCr-Ni flat connector Order no. ZK9029FS
Locking plate (10 pieces) Order no. ZB9029VP
NiCr-Ni single built-in socket Order no. ZK9029FE
1-row panel with NiCr-Ni socket Order no. ZK9029FB1
6-row panel with NiCr-Ni socket Order no. ZK9029FB6

Order numbers for the above examples are compiled from
the following coding elements : Z③9029F②②.
The coding elements can be taken from the table below.

Ordering:

<table>
<thead>
<tr>
<th>Type ①</th>
<th>Color (IEC 584)</th>
<th>Variant ②</th>
<th>Panel ③</th>
<th>Panel dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCr-Ni (K)</td>
<td>green</td>
<td>Male connector = S</td>
<td>1-er (1-rhg)</td>
<td>38 x 38 x 2.5 mm</td>
</tr>
<tr>
<td>Fe-CuNi (J)</td>
<td>black</td>
<td>Female connector = B</td>
<td>6-er (1-rhg)</td>
<td>113 x 38 x 2.5 mm</td>
</tr>
<tr>
<td>Cu-CuNi (T)</td>
<td>brown</td>
<td></td>
<td>12-er (1-rhg)</td>
<td>203 x 38 x 2.5 mm</td>
</tr>
<tr>
<td>NiCr-CuNi (E)</td>
<td>lilac</td>
<td></td>
<td>24-er (2-rhg)</td>
<td>203 x 76 x 2.5 mm</td>
</tr>
<tr>
<td>PtRh-Pt (S)</td>
<td>orange</td>
<td></td>
<td></td>
<td>mounting depth: 25.4 mm</td>
</tr>
</tbody>
</table>