

## NiCr-Ni thermowire T 190-0



Accuracy: NiCr-Ni class 2\*  
Insulation : Glass fiber (wires and sheath)  
Operating temp.: -25°C to +350°C (short time up to 400 °C)  
Wire diameter: 0.5 mm  
External diameter: approx. 1.3 x 2.1 mm

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



Accuracy: NiCr-Ni class 2\*  
Insulation : Glass fiber (wires and sheath)  
Operating temp.: -25°C to +350°C (short time up to 400 °C)  
Wire diameter: 0.2 mm  
External diameter: approx. 0.6 x 1.0 mm

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

## NiCr-Ni thermowire T 190-2



Accuracy: NiCr-Ni class 2\*  
Insulation : PVC (wires and sheath)  
Operating temp.: -10°C to +105°C  
Wire diameter: 0.5 mm  
External diameter: approx. 2.2 x 3.4 mm

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

## NiCr-Ni thermowire T 190-3



Accuracy: NiCr-Ni class 2\*  
Insulation : Silicone (wires and sheath)  
Operating temp.: -45°C to +200°C  
Wire diameter: 0.5 mm  
External diameter: approx. 4 mm

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

\* Range of validity see page 147

# Temperature

## 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 2.5 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 2.0 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**

Only for dry, non-aggressive environments!

## 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 (stranded wire) 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

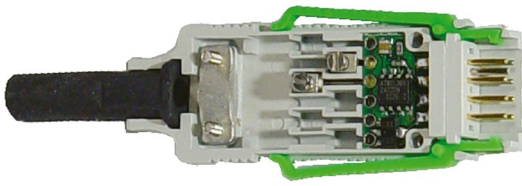
NiCr-Ni thermal line (stranded wire) with FEP / silicone  
insulation, per meter **Order no. LT01916**

\* Range of validity see page 147

\*\* There is no adverse temperature effect at the juncture from measuring element to cable. see page 147

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

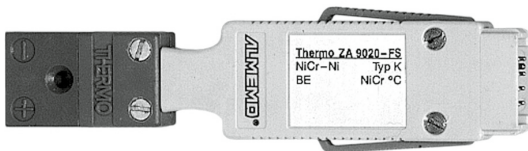
(no thermo-electric transition / with thermal material)

NiCr-Ni (K)	Order no. ZA9020FS
NiCroSil-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

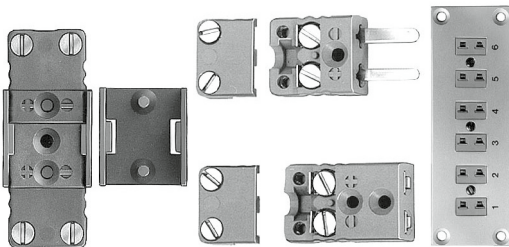
## ALMEMO® adapter plug with miniature flat socket



### For Types K, J, T, S

NiCr-Ni (K)	Order no. ZKA029RA
NiCroSil-NiSil (N)	Order no. ZNA029RA
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

- Connectors with thermo contacts for avoiding voltage corruption at thermocouple junctions.
- For ambient temperatures  $-183$  to  $+200$  °C.
- Locking plate for complete coupling.

Order numbers for the above examples are compiled from the following coding elements : Z①9029F②③.

The coding elements can be taken from the table below.

### Ordering:

Type ①	Color (IEC 584)	Variant ②	Panel ③	Panel dimensions
NiCr-Ni (K)	green	Male connector = S	1-er (1-rhg)	38 x 38 x 2.5 mm
NiCroSil-NiSil (N)	pink	Female connector = B	6-er (1-rhg)	113 x 38 x 2.5 mm
Fe-CuNi (J)	black		12-er (1-rhg)	203 x 38 x 2.5 mm
Cu-CuNi (T)	brown		24-er (2-rhg)	203 x 76 x 2.5 mm
NiCr-CuNi (E)	lilac			mounting depth: 25.4 mm
PtRh-Pt (S)	orange			

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.