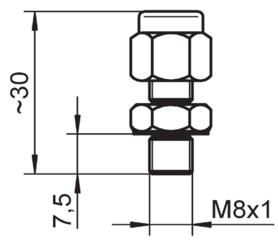
Handle for sensors with hexagonal cable sleeve

Option Handle including fitting **Order no. OFH1**

Clamp srew connection ZT943xKV



Operative range
For sheath elements

Option:
Notched steel ring (once fitted, cannot be removed),
T_{max} = 800 °C
For ZT9431KV
Order no. OT9431ST
For ZT9432KV
Order no. OT9432ST

Variants (with PTFE clamping ring)	**Order no.**
for types FTA15Lxxxx, FPA16Lxxxx	**ZT9431KV**
for types FTA30Lxxxx, FPA30Lxxxx and FNA30Lxxxx	**ZT9432KV**

Technical data

Operating temperature	up to maximum 250 °C with option up to 800 °C
Thread	M8x1, 14 AF

Heat-conducting paste ZB9000WP

For surface measurement, operative range -30 to +200 °C, heat-conducting paste, tube, 12 ml **Order no. ZB9000WP**

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.

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NiCr-Ni-sensor FTA 15 P1

Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -200...+1100 °C
200x1.5 mm, sheathed line, Inconel
T_{90}: * 1.5 s
Cable: 1.5 m FEP/silicone thermal line**
with ALMEMO® connector

For immersion measurement

L = 200 mm **Order no. FTA15P1**
(No variants available)
Option: Handle mounted **Order no. OFH1**

Pt100-sensor FPA 32 P1

Accuracy: Pt100 film resistor, class B*
Measuring tip: Operative range -40...+400 °C
200 x 2.8 Measuring tip reinforced 3.2 mm,
sheathed line stainless steel
T_{90}: * 10 s
Cable: 1.5 m PVC / PVC
with ALMEMO® connector

For immersion measurement

L = 200 mm **Order no. FPA32P1**
(No variants available)
Option: Handle mounted **Order no. OFH1**

NTC-sensor FNA 305

Accuracy: NTC, see page 07.04
Measuring tip Operative range -10 to +60 °C
(non-condensing)
Protective tube in stainless steel
Diameter = 3.0mm, length = 50 mm
mounted directly on ALMEMO® connector
T_{90} 8 s

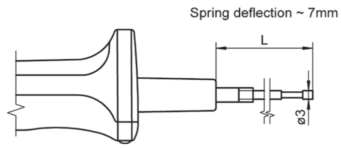
For Indoor air measurements

L = 50 mm **Order no. FNA305**
(No variants available)

* 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.

NiCr-Ni sensor with handle FTA 120x

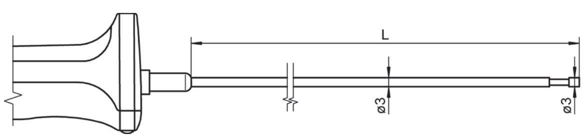


Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -200...+400 °C
Silver rivet, level, spring-loaded,
not electrically isolated
T_{90}: * 3 s
Handle: * 138 mm
Cable: 1.5 m PVC

L = 30 mm **Order no. FTA1201**
L = 150 mm **Order no. FTA1202**

For surface measurement and immersion measurement

NiCr-Ni sensor with handle FTA 122 LxxxxH

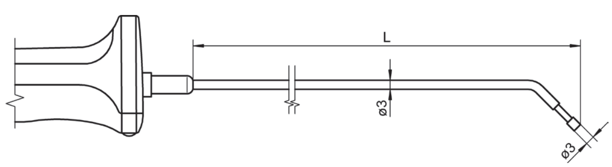


Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -200...+400 °C
Silver rivet, level, not electr. isolated
T_{90}: * 3 s
Handle: * 127 mm
Cable: 1.5 m FEP/silicone thermal line**

For surface measurement and immersion measurement

L = 50 mm **Order no. FTA122L0050H**
L = 100 mm **Order no. FTA122L0100H**
L = 200 mm **Order no. FTA122L0200H**

NiCr-Ni sensor with handle FTA 121 LxxxxH

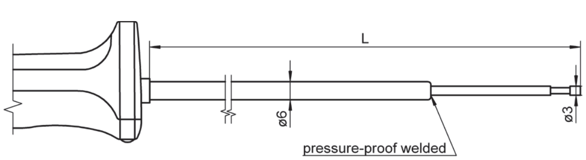


Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -200...+400 °C
Silver rivet, level, angled,
not electrically isolated
T_{90}: * 3 s
Handle: * 127 mm
Cable: 1.5 m FEP/silicone thermal line**

For surface measurement and immersion measurement

L = approx. 50 mm **Order no. FTA121L0050H**
L = approx. 200 mm **Order no. FTA121L0200H**

NiCr-Ni sensor with handle FTA 150 LxxxxH



Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -200...+800 °C
Stainless-steel rivet, level,
electrically isolated
T_{90}: * 3 s
Handle: * 127 mm
Cable: 1.5 m FEP/silicone thermal line**

For surface measurement and immersion measurement

L = 350 mm **Order no. FTA150L0350H**
L = 700 mm **Order no. FTA150L0700H**
L = 1250 mm **Order no. FTA150L1250H**

* 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.

NiCr-Ni sensor FTA 109 P

For surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -50...+500 °C
Thermal ribbon, not electr. isolated
Measuring head approx. 15 mm diameter
T_{90}: * 1 s
Cable: 1.5 m FEP/silicone thermal line**

L = approx. 180 mm **Order no. FTA109P**
Sensor with handle **Order no. FTA109PH**
(No variants available)

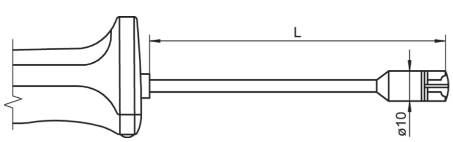
NiCr-Ni sensor FTA 104 P

For surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -50...+500 °C
Thermal ribbon, not electr. isolated
Measuring head approx. 15 mm diameter
T_{90}: * 1 s
Cable: 1.5 m FEP/silicone thermal line**

L = approx. 180 mm,
with 90° angle, approx. 50 mm **Order no. FTA104P**
Sensor with handle **Order no. FTA104PH**
(No variants available)

NiCr-Ni sensor with handle FTA 153 LxxxxH

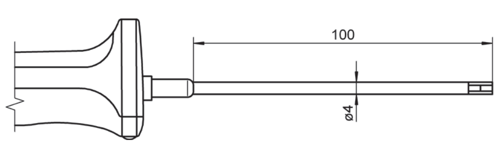


For surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -200...+250 °C
Thermal ribbon, crossed,
not electrically isolated
T_{90}: * 1.5 s
Handle: * 127 mm
Cable: 1.5 m PVC

L = 100 mm **Order no. FTA153L0100H**

NiCr-Ni sensor with handle FTA 1535 LxxxxH



For surface measurement

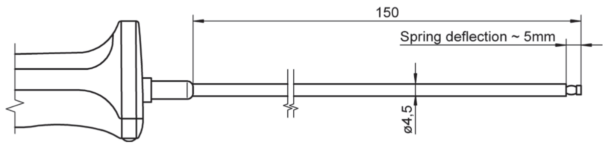
Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -200...+250 °C
Thermal ribbon, not electr. isolated
T_{90}: * 2 s
Handle: * 127 mm
Cable: 1.5 m PVC

L = 100 mm **Order no. FTA1535L0100H**

* 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.

NiCr-Ni sensor with handle FTA 420 LxxxxH

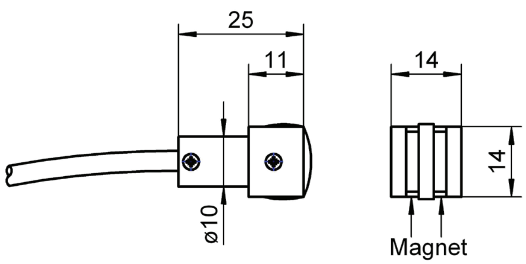


For surface measurement on level surfaces

Accuracy: NiCr-Ni class 1*
Measuring tip: Operative range -50...+500 °C
Silver disc, spring-loaded,
not electrically isolated
T_{90}: * 2 s
Handle: * 127 mm
Cable: 1.5 m FEP/silicone thermal line**

L = 150 mm **Order no. FTA420L0150H**

NiCr-Ni sensor FTA 025 P



Magnet sensor for surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -50...+300 °C
Thermal ribbon, not electr. isolated
Fastened by magnet
T_{90}: * 1.5 s
Cable: 2 m silicone thermal line**

Magnet sensor
(No variants available) **Order no. FTA025P**

Magnet sensor with Velcro fastener e.g. for pipework

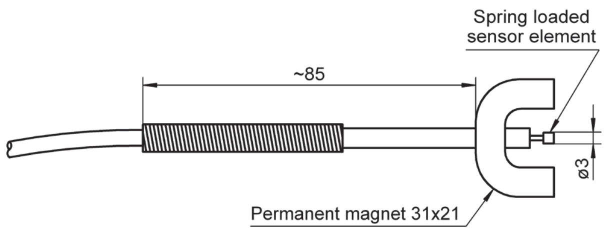
Klettband: approx. 400 mm,
for pipe diameter appr. 10 to 75 mm
Operating range: -10 ... +110 °C
mounted on sensor tip

Magnet sensor, including Velcro fastener
Order no. FTA025PKB

* 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.

NiCr-Ni sensor FTA 131

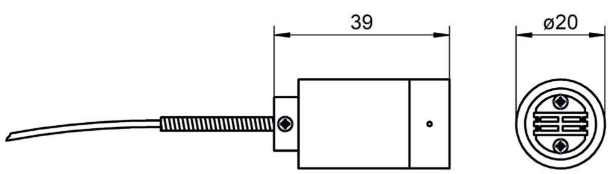


Magnet sensor For surface measurement

Accuracy:	NiCr-Ni class 2*
Measuring tip:	Operative range -50...+100 °C Silver rivet, level, spring-loaded, not electrically isolated Fastened by magnet
T_{90}: *	3 s
Cable:	3 m FEP/silicone

Magnet sensor **Order no. FTA131**

NiCr-Ni sensor FTA 026 P

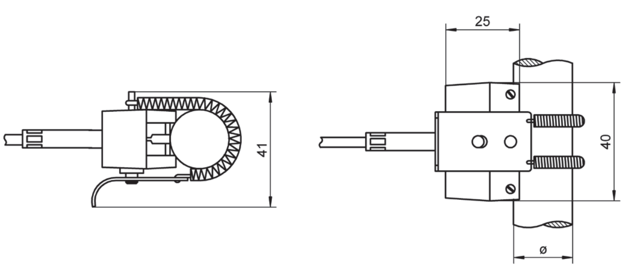


For surface measurement

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -50...+250 °C Thermal ribbon, not electrically isolated
T_{90}: *	1.5 s
Cable:	0.9 m line, PTFE compensating cable

Ribbon sensor **Order no. FTA026P**
(No variants available)

NiCr-Ni sensor FTA 8068



For surface measurement on pipes

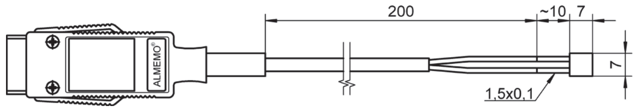
Accuracy:	NiCr-Ni class 2*
Measuring tip:	Operative range -50...+120 °C Thermal ribbon, not electr. isolated Fastened by pipe clamp (spring-loaded)
T_{90}: *	3 s
Pipe diameter:	12...25 mm
Cable:	1.2 m PVC

Pipe clamp sensor **Order no. FTA8068**

* 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.

NiCr-Ni film thermocouple FTA 683

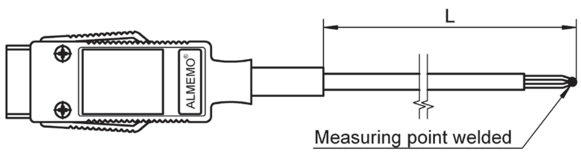


For surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Operative range -100 to +200°C
Folie, Insulation Kresol
T_{90}: * 2 s

with permanently connected FEP / silicone thermal line (stranded wire)**
-50 to +200°C, 2 meters, with ALMEMO® connector
Order no. FTA683
Measuring element without cable, free ends
(for your own sensors) **Order no. FT0683**

NiCr-Ni sensor FTA 390 x



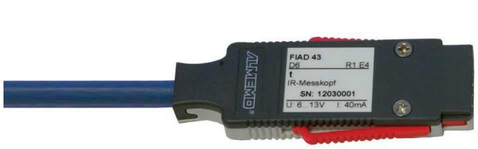
For surface measurement

Accuracy: NiCr-Ni class 2*
Measuring tip: Thermowire, welded,
not electrically isolated
T_{90}: * 3 s
Wire: 1.5 m

Insulation, glass fiber,
Operative range -25...+350°C (short time up to 400 °C)
Order no. FTA3900
Insulation FEP,
Operative range -200...+205 °C **Order no. FTA39010**

* 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

Digital infra-red sensor for measuring surface temperature FIAD43



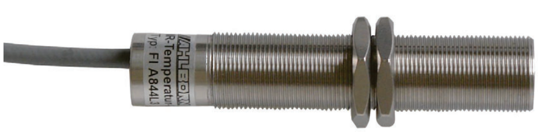
Operative range: -40...600 °C,
Miniature probe head, with cable and ALMEMO® D6 plug
and 1 mounting nut

Cable length = 1 m	**Order no. FIAD4332**
Cable length = 3 m	**Order no. FIAD4332L3**

For technical data, see page 07.34

DAkkS or factory calibration KI9xxx temperature for digital sensor (see chapter Calibration certificates)

Compact infra-red probe head FIA844



Operative range: -20...500 °C,
Probe head, with cable and ALMEMO® plug
and 2 mounting nuts

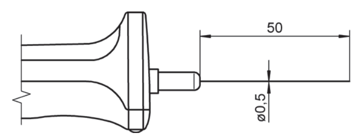
Cable length = 1 m	**Order no. FIA844**
Cable length = 3 m	**Order no. FIA844L3**

For technical data, see page 07.36

Factory calibration KI9xxx temperature for sensor (see chapter Calibration certificates)

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.

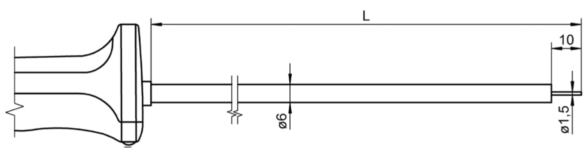
NiCr-Ni sensor with handle FTA 05 L0050H



For immersion measurement

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+500 °C Sheathed line, Inconel
T_{90}: *	0.8 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**
L = 50 mm	**Order no. FTA05L0050H**

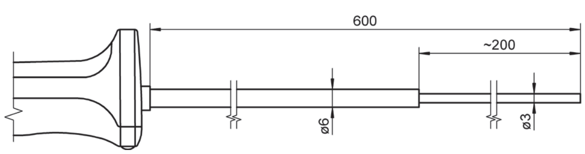
NiCr-Ni sensor with handle FTA 125 LxxxxH



For immersion measurement

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+800 °C Sheathed line, Inconel
T_{90}: *	1.5 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**
L = 300 mm	**Order no. FTA125L0300H**

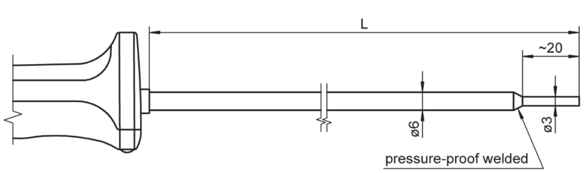
NiCr-Ni sensor with handle FTA 126 LxxxxH



For immersion measurement

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+800 °C Sheathed line, Inconel
T_{90}: *	2.5 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**
L = 600 mm	**Order no. FTA126L0600H**

NiCr-Ni sensor with handle FTA 1261 LxxxxH



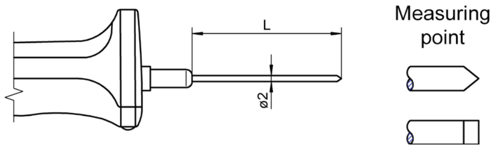
For immersion measurement in plastic and pasty substances, e.g. bitumen

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+500 °C Sheathed line, Inconel
T_{90}: *	3 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**
L = 150 mm	**Order no. FTA1261L0150H**
L = 300 mm	**Order no. FTA1261L0300H**

* 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.

NiCr-Ni sensor with handle FTA 123 LxxxxH

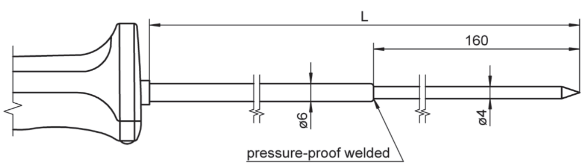


For immersion measurement in plastic and pasty substances

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+300 °C Penetrating tip
T_{90}: *	3 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**

L = 50 mm	**Order no. FTA123L0050H**
L = 100 mm	**Order no. FTA123L0100H**

NiCr-Ni sensor with handle FTA 1231 LxxxxH



For immersion measurement in plastic and pasty substances

Accuracy:	NiCr-Ni class 1*
Measuring tip:	Operative range -200...+400 °C Penetrating tip, cone stainless steel 1.4541
T_{90}: *	6 s
Handle: *	127 mm
Cable:	1.5 m FEP/silicone thermal line**

L = 250 mm	**Order no. FTA1231L0250H**

* 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

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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.

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 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.

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**

Nur für trockene, nicht agressive 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

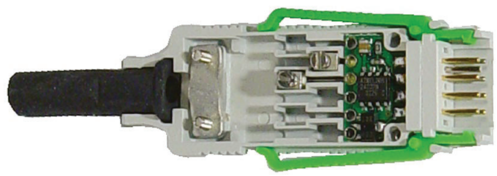
Thermal line (stranded wire): NiCr-Ni*
Insulation: Wires : FEP, sheath : silicone
Operating temp.: -50...+200°C
Wire diameter: 0.7 mm
External diameter: approx. 3.8 mm

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)



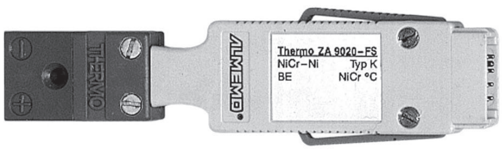
For Types K, N, L, J, T
(no thermo-electric transition / with thermal material)

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

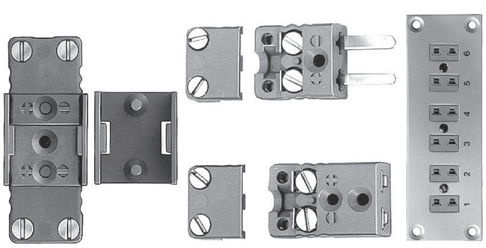
ALMEMO® adapter plug with miniature flat socket



For Types K, J, T, S

NiCr-Ni (K)	**Order no. ZKA029RA**
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
Fe-CuNi (J)	black	Female connector = B	6-er (1-rhg)	113 x 38 x 2.5 mm
Cu-CuNi (T)	brown		12-er (1-rhg)	203 x 38 x 2.5 mm
NiCr-CuNi (E)	lilac		24-er (2-rhg)	203 x 76 x 2.5 mm
PtRh-Pt (S)	orange			mounting depth: 25.4 mm

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.