ELVARME

TEMPERATURFØLERE

MODSTANDSFØLERE

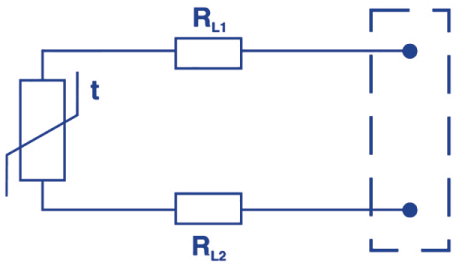
FOOD PROBES

CONNECTION TECHNOLOGIES FOR RESISTANCE THERMOMETERS

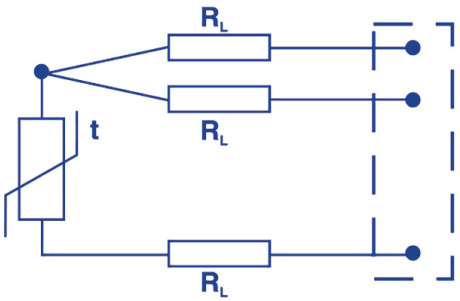
There are different techniques for the electrical connection of resistance thermometers. The circuit types differ in regard to the number of wires and to the compensation of parasitic resistance effects. Independently from the connection technique, the measuring currents should be as small as possible to avoid errors caused by self heating. The maximum sensor current is 0.3 mA for Pt 1000 and 1.0 mA for Pt 100.

Temperatur	Grenzabweichungen / *Tolerances*			
Temperature	W 0,15		W 0,3	
°C	°C	Ω	°C	Ω
–200	-	-	±1.3	±0.56
–100	±0.35	±0.14	±0.8	±0.32
0	±0.15	±0.06	±0.3	±0.12
100	±0.35	±0.13	±0.8	±0.30
400	±0.95	±0.33	±2.3	±0.79
600	-	-	±3.3	±1.06

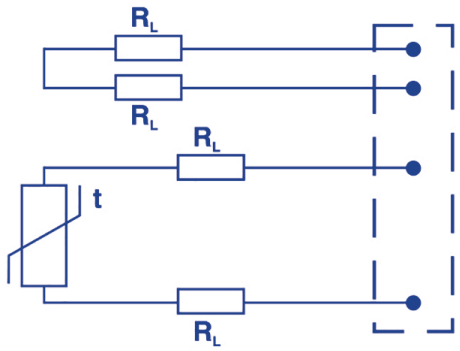
Tolerances
for Pt 100 temperature sensors
andere Toleranzen auf Anfrage
other tolerances on request



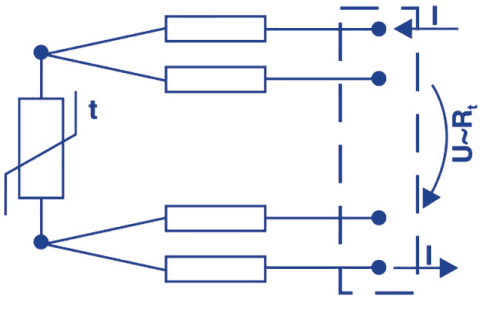
Two-wire circuit: This is the most simple circuit. Here, the compensation of parasitic wiring resistances is either impossible at all or can be done only for a fixed value (RL1+ RL2). The temperature dependence of wiring resistances cannot be compensated.



Three-wire circuit: Three-wire circuit: The wiring resistances can be almost fully compensated, provided that the resistances of the three wires are identical. Contact resistances, however, can adulterate the result of the measurement.



Two-wire circuit with compensation loop: The materials of the wires to the sensor and of the loop are identical. The loop ends close to the sensor. The compensation of wiring resistances is similar to the case of the three-wire circuit. Measuring circuit and compensating circuit are galvanically isolated.



Four-wire circuit – measurement according to KELVIN: Using the fourwire circuit the parasitic wiring resistances can be fully compensated. A defined current flows out of the sensor by separate wires. The resulting voltage drop, measured via a second set of unloaded wires is proportional to the resistance.If required, parasitic thermo-electric effects can be compensated as well by reversing the polarity of the measuring current. Contact resistances do not influence the measurement..

PLUG-IN/ SCREW-IN RESISTANCE THERMOMETERS

Plug-in and screw-in resistance thermometers are applicationspecific designs. They can be adapted to diverse processes.

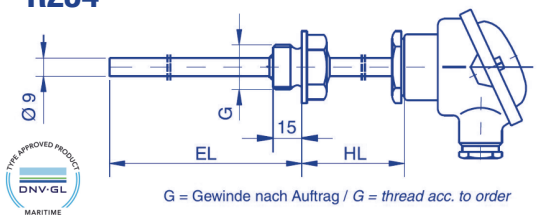
- delivery of further lengths, diameters or materials available onrequest
- sensor: e.g. 1 x Pt 100, 2 x Pt 100 or acc. to order, acc. to DIN EN 60751 in class W0.15 resp. W0.3 or other tolerances
- 2-, 3- or 4-wire circuit available
- max. ambient temperature at the connection head:
- version without transmitter: 100 °C
- version with transmitter: depending on the type of the transmitter
- built-in length (EL) according to order

Examples Plug-in/ Screw-in resistance thermometers

(EL) Einbaulänge in mm (NL) Nennlänge in mm (Ø) Durchmesser in mm (HL) Halsrohrlänge in mm

(EL) built-in length in mm (NL) nominal length in mm (Ø) diamenter in mm (HL) neck tube length in mm

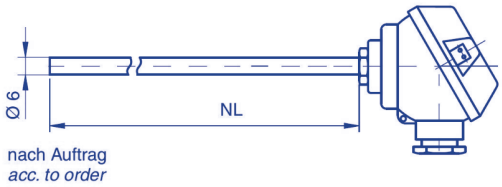
R254



- Anschlusskopf: Form B
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: G ½"A M20x1.5
- Max. Einsatztemp.: +600 °C (DNV +800 °C)
- Messumformereinbau möglich

- *Connection head: form B*
- *Protective tube material: stainless steel 1.4571*
- *Process connection: G ½"A M20x1.5*
- *Max. working temp.: +600 °C (DNV +800 °C)*
- *Transmitter installation possible*

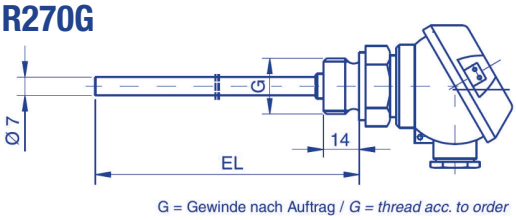
R270



- Anschlusskopf: Form J
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich

- *Connection head: form J*
- *Protective tube material: stainless steel 1.4571*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*

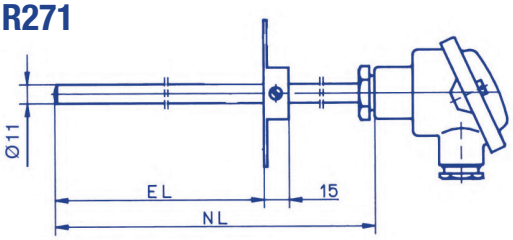
R270G



- Anschlusskopf: Form J
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: G ½"A
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich

- *Connection head: form J*
- *Protective tube material: stainless steel 1.4571*
- *Process connection: G ½"A*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*

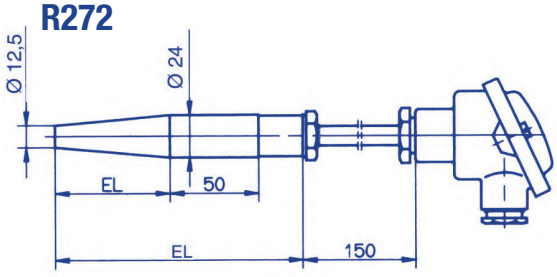
R271



- Anschlusskopf: Form B
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: mit Befestigungsflansch
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich

- *Connection head: form B*
- *Protective tube material: stainless steel 1.4571*
- *Process connection: with mounting flange*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*

R272



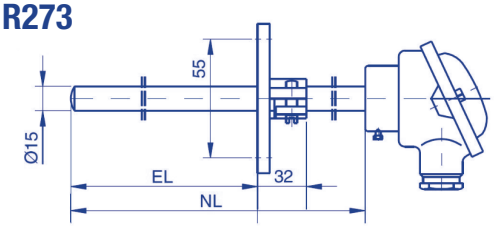
- Anschlusskopf: Form B
- Schutzrohrwerkstoff: Edelstahl 1.4571, 1.7335
- Prozessanschluss: M20x1.5
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich
- Mit Einschweißschutzhülse Form D1, D2, D4, D5

- *Connection head: form B*
- *Protective tube material: stainless steel 1.4571, 1.7335*
- *Process connection: M20x1.5*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*
- *With weld-in sleeve form D1, D2, D4, D5*

Examples Plug-in/ Screw-in resistance thermometers

(EL) Einbaulänge in mm — *(EL) built-in length in mm*
(NL) Nennlänge in mm — *(NL) nominal length in mm*
(Ø) Durchmesser in mm — *(Ø) diamenter in mm*
(HL) Halsrohrlänge in mm — *(HL) neck tube length in mm*

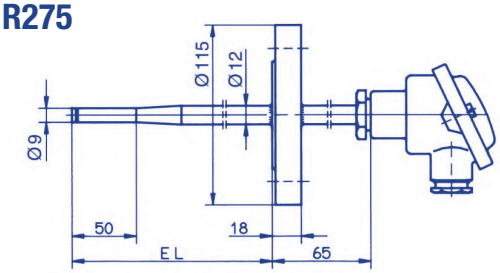
R273



- Anschlusskopf: Form B
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: mit Befestigungsflansch
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich

- *Connection head: form B*
- *Protective tube material: stainless steel 1.4571*
- *Process connection: with mounting flange*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*

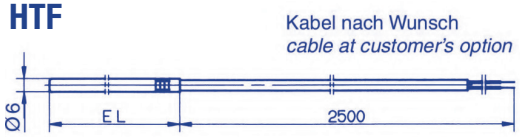
R275



- Anschlusskopf: Form B
- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: mit Flansch C 25 ND 40 DIN 25 01
- Max. Einsatztemp.: +600 °C
- Messumformereinbau möglich

- *Connection head: form B*
- *Protective tube material: stainless steel 1.4571*
- *Process connection: with flange C 25 ND 40 DIN 25 01*
- *Max. working temp.: +600 °C*
- *Transmitter installation possible*

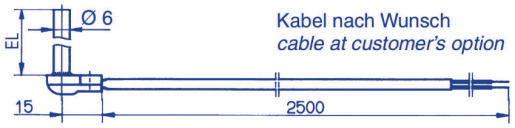
HTF



- Schutzrohrwerkstoff: Edelstahl 1.4571
- Max. Einsatztemp.: +400 °C

- *Protective tube material: stainless steel 1.4571*
- *Max. working temp.: +400 °C*

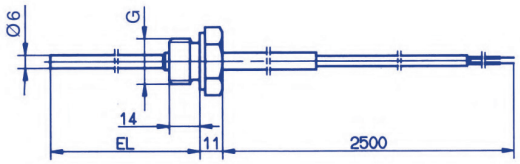
HTF-WIN



- Schutzrohrwerkstoff: Edelstahl 1.4571
- Max. Einsatztemp.: +400 °C

- *Protective tube material: stainless steel 1.4571*
- *Max. working temp.: +400 °C*

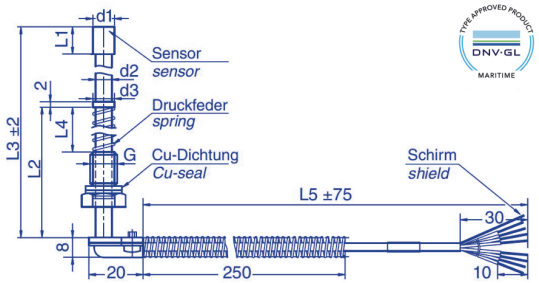
ESTF



- Schutzrohrwerkstoff: Edelstahl 1.4571
- Prozessanschluss: G½ "A; G¼ "A
- Max. Einsatztemp.: +180 °C
- Mit silikonisolierter Anschlussleitung 0,22 mm² und Knickschutz

- *Protective tube material: stainless steel 1.4571*
- *Process connection: G½"A; G¼"A*
- *Max. working temp.: +180 °C*
- *With silicone insulated connection line 0.22 mm² and bending protection*

WTH 280-400.WINK-DNV



- Schutzrohrwerkstoff: Edelstahl 1.4404 (AISI 316L)
- Prozessanschluss: G nach Auftrag
- Max. Einsatztemp.: +180 °C
- Mit Knickschutzfeder, Kabel: Teflon/Schirm/Teflon

- *Protective tube material: stainless steel 1.4404 (AISI 316L)*
- *Process connection: G acc. to order*
- *Max. working temp.: +180 °C*
- *With spring (bending protection), cable: teflon/shield/teflon*

HANDLE PROBES

The probes are class B and class AA (1/3 DIN B, at 0 °C) according to DIN EN 60751 are available. The declared temperature range is related to the sensitive parts of the measuring tip. For the maximum temperature of the handle and the connection line, the material-dependent characteristic values (PA max. 130 °C) are valid.

- Connection line length 1.5 m
- Different lengths or cable types as well as differing lengths and diameters of the protective tube at request
- Gradation of protective tube diameter: 2 / 2.5 / 3 / 4 / 4.5 / 5 / 6 mm
- Connection ends and connector plugs are delivered according to specification
- Probes are also available with integrated transmitters (4 ... 20 mA resp. 0 ... 10 V, integrated in the handle)

Examples handle probes

Other lengths, diameters, temperature ranges and connection types are available on request.

- *Plastic handle black, other handles on request, Tmax. +80 °C*

Type WTF 10

- *Universal immersion probe*
- *Temperature range: –50 °C … +400 °C*
- *Protective tube: stainless steel*
- *Connection type: 4-wire circuit*
- *Connection line: PVC-insulated*

Type WTF 11

- *Probe for aggressive media*
- *Temperature range: –200 °C … +400 °C*
- *Protective tube: glass*
- *Connection type: 4-wire circuit*
- *Connection line: PVC-insulated*

Type WTF 20

- *Universal penetration probe, centrical or oblique tip, extra cost for oblique tip*
- *Temperature range: –50 °C … +400 °C*
- *Protective tube: stainless steel*
- *Connection type: 4-wire circuit*
- *Connection line: PVC-insulated*

Type WTF 30

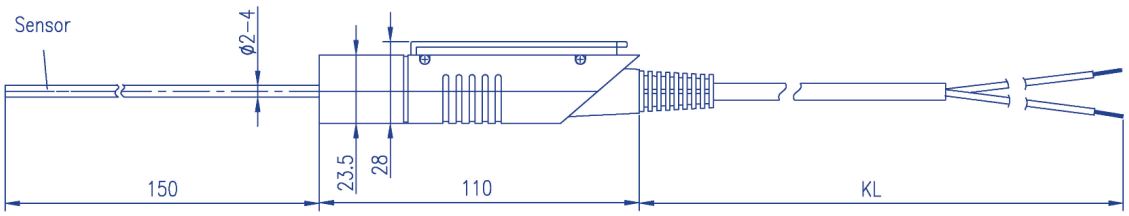
- *Surface temperature probe for the measurement at flat metallic surfaces, flexible sensor*
- *Temperaturerange: –50 °C … +400 °C*
- *Protective tube: stainless steel*
- *Connection type: 4-wire circuit*
- *Connection line: PVC-insulated*

Type WTF 40

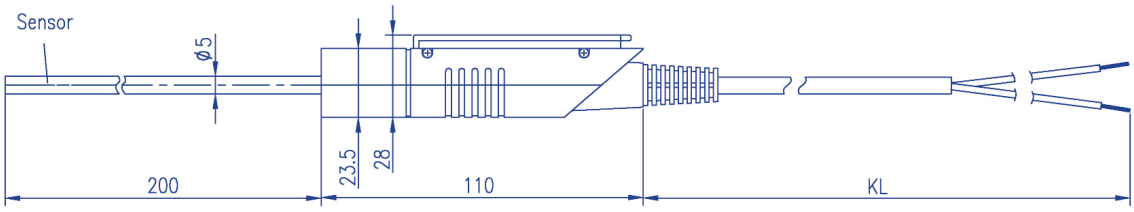
- *Air probe*
- *Temperature range: –50 °C … +200 °C*
- *Protective tube: stainless steel perforated*
- *Connection type: 4-wire circuit*
- *Connection line: PVC-insulated*

Beispiele Handfühler
KL = Kabellänge
Examples handle probes
KL = cable length

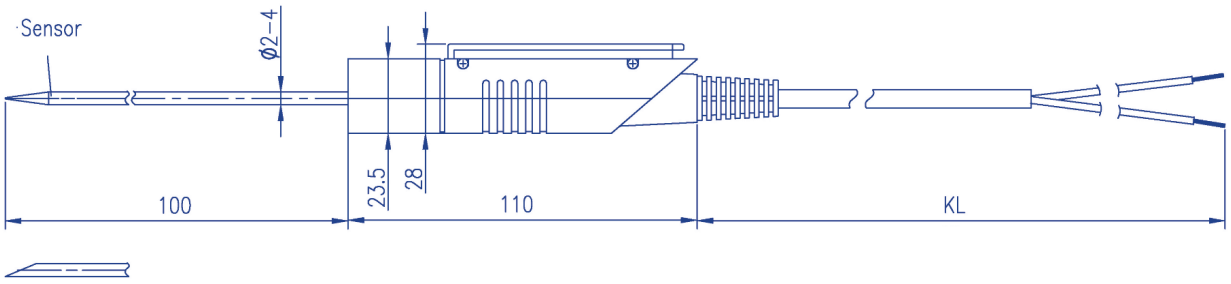
WTF 10



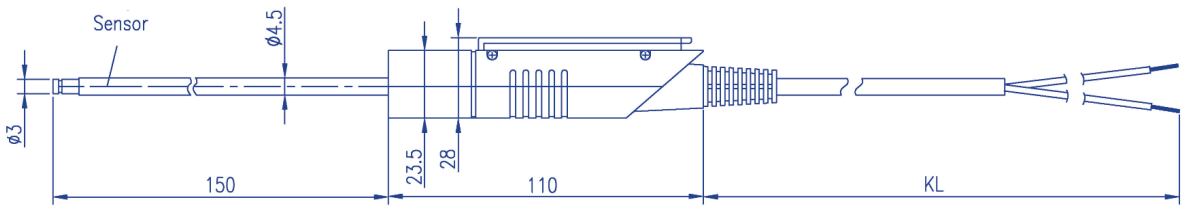
WTF 11



WTF 20



WTF 30



WTF 40

PLATINUM RESISTANCE THERMOMETERS SERIES R***

FUNCTIONAL SAFETY FOR APPLICATIONS UP TO SIL 3 ACCORDING TO EN 61508-2

SERIES:

- Measuring insert type R205
- Plug-in resistance thermometer type R240 and type R270
- Resistance thermometer with clamp connection type R241
- Resistance thermometer with screwed end type R254
- Screw-in resistance thermometer type R270G
- Resistance thermometer with mounting flange type R271 and type R273
- Resistance thermometer with weld-in sleeve type R272
- Resistance thermometer with flange type R274 and type R275

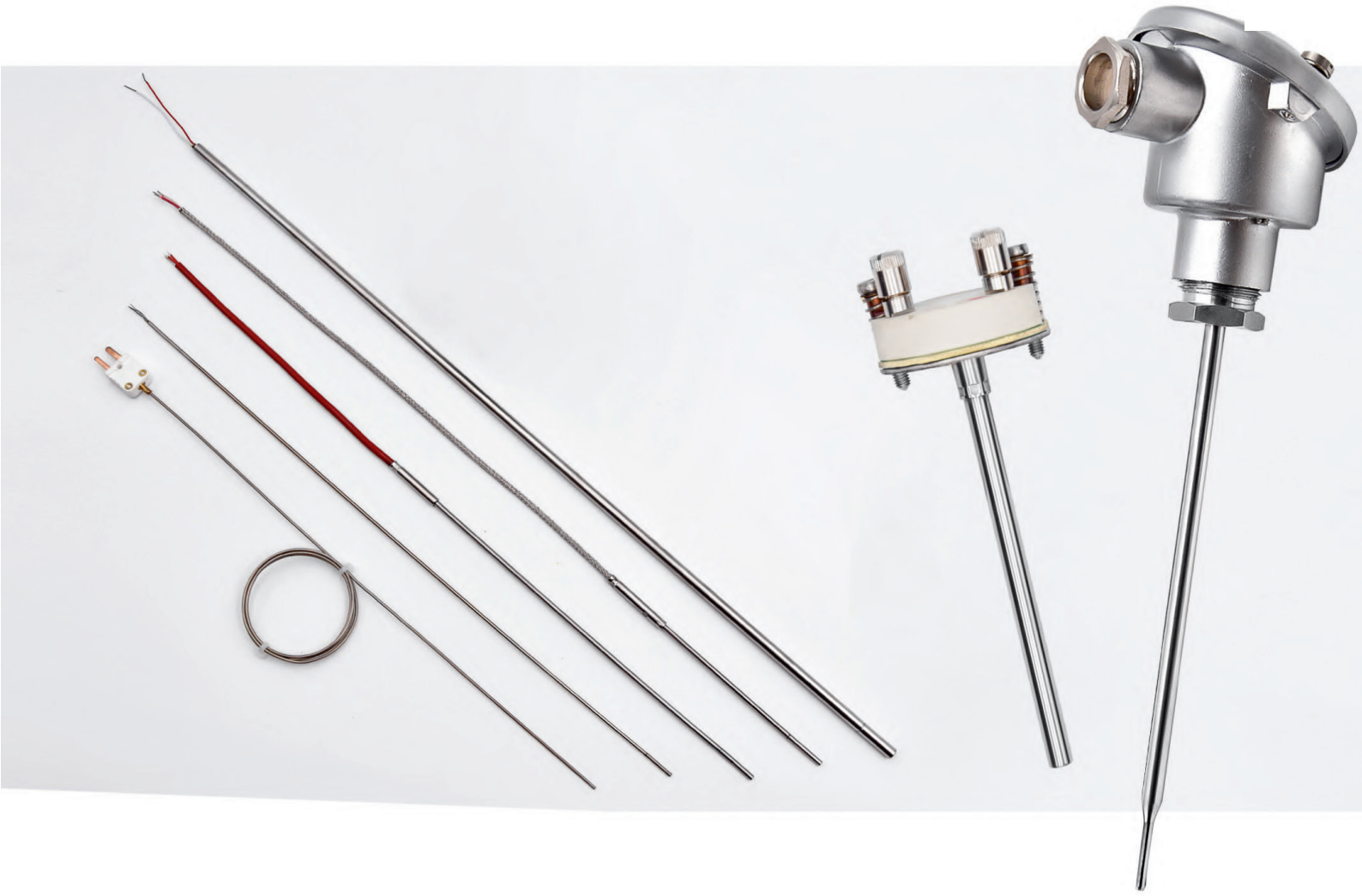
PARAMETERS

- Sensor type: Pt 100 / Pt 1000
- Measuring circuits: 1 or 2
- Operating temperature:
    - 0 °C ... +600 °C (up to SIL 2)
    - 0 °C ... +400 °C (up to SIL 3)
- Protective tube material: stainless steel 1.4571
- Connection head:
    - Protection class: IP 65
    - Al diecasting lacquered or
    - Polyamide PA 12 antistatic
    - Screwed cable gland M 20 x 1.5
- Characteristics:
    - Measuring current max. 10 mA
    - Operating voltage U max. 10 V

Certificate No.: Z10 11 07 77 500 001

Safety-related technical data is specified in the SIL-report (safety manual).

MINERAL-INSULATED RESISTANCE THERMOMETERS



- Flexible mineral-insulating cable
- Copper wires with low resistance (for temperatures up to +600 °C)
- Ni-wires (for temperatures from +600 °C)
- Diameter 1.0 mm to 8.0 mm
- Low response time
- Fitting length acc. to customer requirement
- Vibration-proof construction
- Material 1.4541 / 1.4571 / 1.4404
- Temperature range: –200 °C ... +800 °C
- Connection heads, connection cable and plugs according to customer requirement
- Two, three or four-wire system
- Minimum bend radius is 5 x outside diameter
- Standard measuring insert with Pt 100 RTD (for temperature measurement) according to DIN EN 60751, class B; also possible Pt 500 or Pt 1000 or other tolerance classes

Examples mineral-insulated resistance thermometers
Delivery of further lengths, diameters or materials is available on request.

Mantelwiderstandsthermometer
mit freien Leitungsenden
Mineral-insulated resistance thermometers with conductor wires

201

202

mit Stabilisierungshülse
with stabilizing sleeve

Mantelwiderstandsthermometer mit Stecker
Mineral-insulated resistance thermometers with plug

203

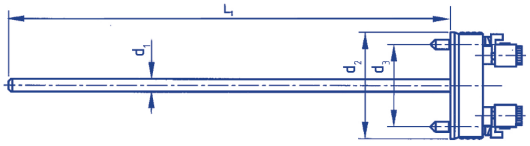
mit Miniaturstecker
with miniature plug

204

mit Standardstecker
with standard plug

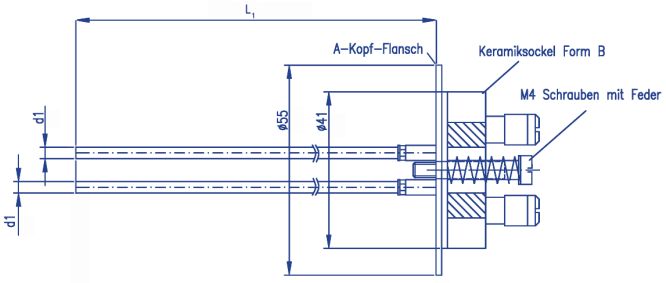
Messeinsatz für
Mantelwiderstandsthermometer
Measuring insert for mineral-insulated resistance thermometers

205



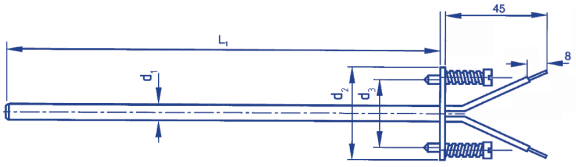
Messeinsatz für
Mantelwiderstandsthermometer
Measuring insert for mineral-insulated resistance thermometers

205a



Messeinsatz ohne Sockel für
Mantelwiderstandsthermometer
Measuring insert without base for mineral-insulated resistance thermometers

206



Mantelwiderstandsthermometer
mit LEMO-Kontakt
Mineral-insulated resistance thermometers with LEMO-contact

207

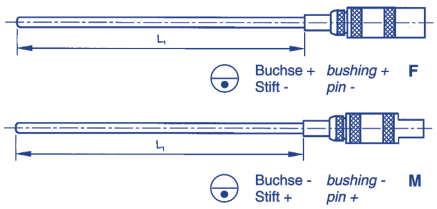
Pinbelegung nach Auftrag *pin assignment acc. to order*

PLUG-IN/ SCREW-IN RESISTANCE THERMOMETERS

Examples mineral-insulated resistance thermometers
Delivery of further lengths, diameters or materials is available on request.

Mantelwiderstandsthermometer
mit LEMO-Kupplung / -Stecker
Mineral-insulated resistance thermometers with LEMO-coupling / -connector

208

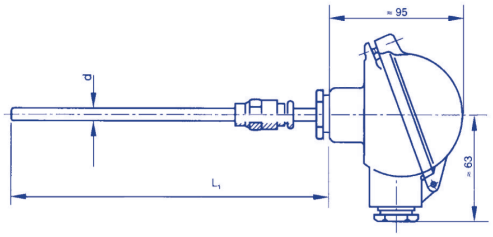


Mantelwiderstandsthermometer mit Kabel
Mineral-insulated resistance thermometers with cable

210

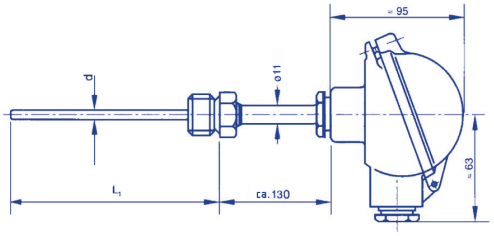
Mantelwiderstandsthermometer
mit Anschlusskopf Form BUZ
Mineral-insulated resistance thermometers with connection head form BUZ

220



mit verstellbarer
Verschraubung
with adjustable screw connection

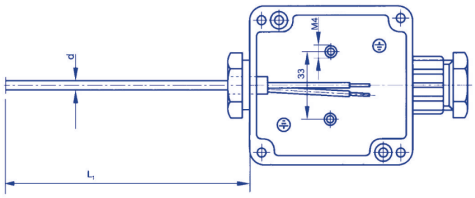
221



mit Einschraubgewinde
Messeinsatz gefedert,
ohne Schutzrohr
with screw in thread measuring insert spring mounted, without protective tube

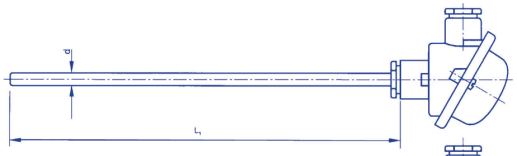
Mantelwiderstandsthermometer mit
Anschlussgehäuse
Mineral-insulated resistance thermometers with connection housing

225

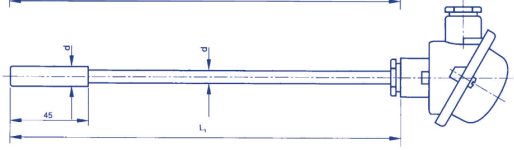


Mantelwiderstandsthermometer
mit Anschlusskopf Form B
Mineral-insulated resistance thermometers with connection head form B

230



235



RESISTANCE THERMOMETERS FOR PLASTICS CONVERTING MACHINES

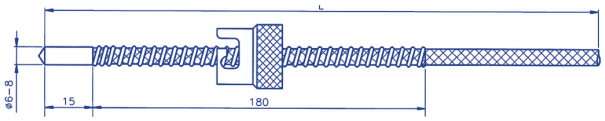
For measuring the temperature in plastics converting machines serve cylindrical probes, cone screw-in probes, clamping band probes, tube surface probes, plunge probes, angle probes and surface probes. All products are availabe in diverse versions, for the use in different plastics converting maschines.

Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm	(NL) Nennlänge in mm	(KL) Kabellänge in mm	
(EL) built-in length in mm	*(NL) nominal length in mm*	*(KL) cable length in mm*	
(A) Ausgleichsleitung	(B) Bajonett Kappe	(L) Länge	Sensor: Pt 100, Pt 1000, andere nach Auftrag
(A) compensating cable	*(B) bayonet-cap*	*(L) length*	*Sensor: Pt 100, Pt 1000, others acc. to order*

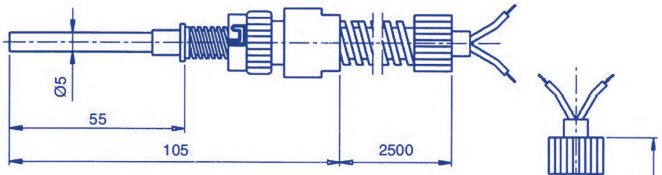
W01

Zylinderfühler
Cylindrical probe



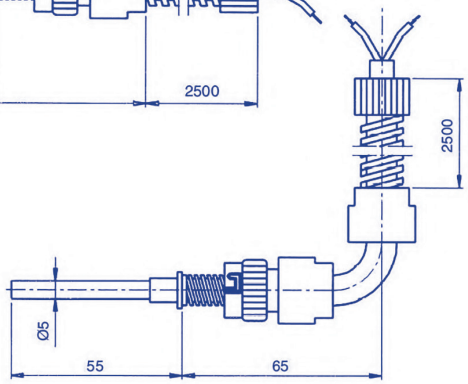
W02

Zylinderfühler gerade mit Schutzschlauch
Cylindrical probe direct with hose



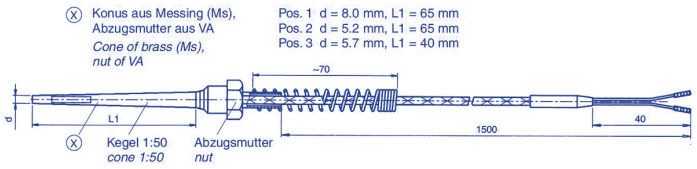
W03

Zylinderfühler winklig mit Schutzschlauch
Cylindrical probe angled with hose



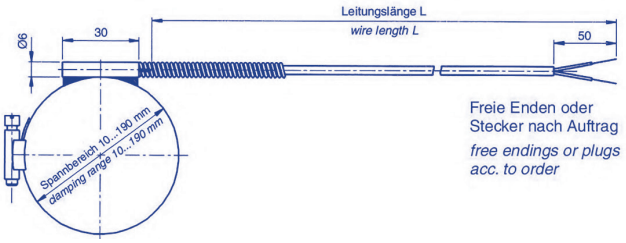
W04

Konischer Einschraubfühler
Cone screw-in probe



W05

Spannbandfühler
Clamping band probe



Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm
(EL) built-in length in mm
(A) Ausgleichsleitung
(A) compensating cable

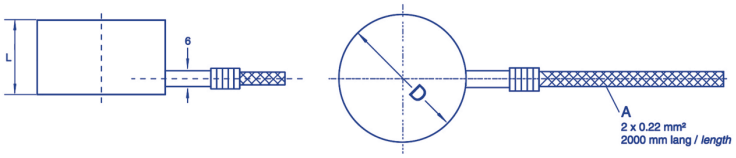
(NL) Nennlänge in mm
(NL) nominal length in mm
(B) Bajonett Kappe
(B) bayonet-cap

(KL) Kabellänge in mm
(KL) cable length in mm
(L) Länge
(L) length

Sensor: Pt 100, Pt 1000, andere nach Auftrag
Sensor: Pt 100, Pt 1000, others acc. to order

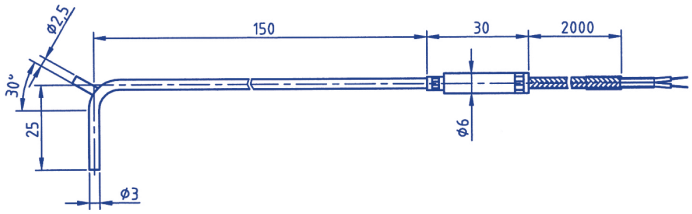
W06

Rohranlegefühler für definierte Ø
Tube surface probe for defined Ø



W07

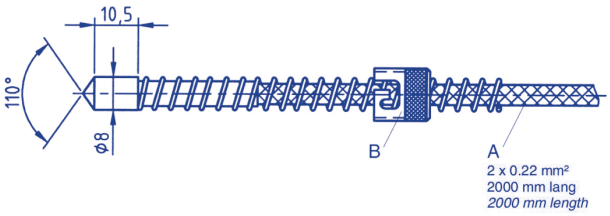
Einstechfühler mit Haltenippel für Feder
Penetration probe with fixing nipple for spring



W08

Zylinderfühler
Cylindrical probe

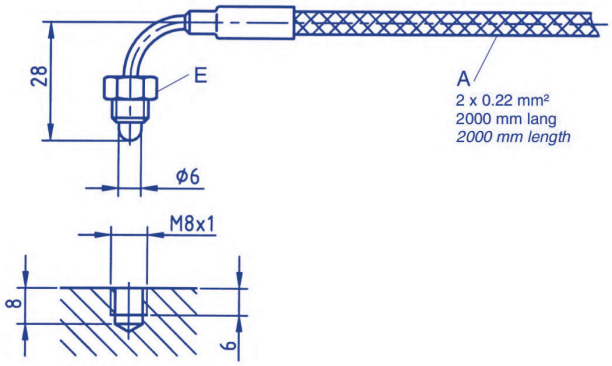
- (B) durch Drehen auf einer Druckfeder in der Einbautiefe verstellbar
- *(B) by turning the compression spring, the fitting depth can be adjusted*



W09

Zylinderfühler in abgewinkelter Form
Cylindrical probe in angular shape

- mit Einschraubnippel (E) M8x1
- *with screw-in nipple (E) M8x1*

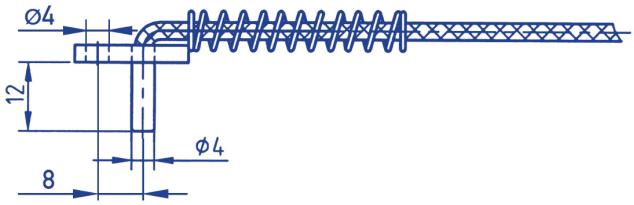


Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm	(NL) Nennlänge in mm	(KL) Kabellänge in mm	
(EL) built-in length in mm	*(NL) nominal length in mm*	*(KL) cable length in mm*	
(A) Ausgleichsleitung	(B) Bajonett Kappe	(L) Länge	Sensor: Pt 100, Pt 1000, andere nach Auftrag
(A) compensating cable	*(B) bayonet-cap*	*(L) length*	*Sensor: Pt 100, Pt 1000, others acc. to order*

W10

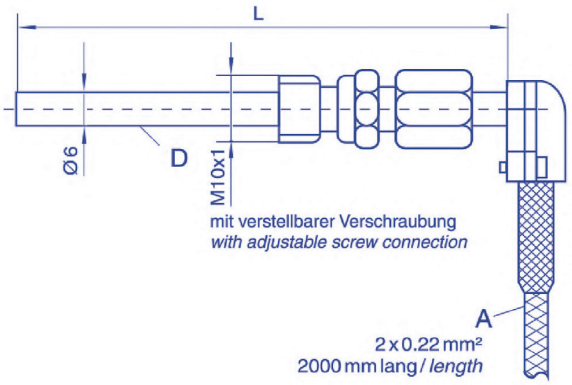
Winkelfühler
Angle probe



W11

Zylinderfühler mit rechtwinkligem Abgang
Cylindrical probe with right angle exit

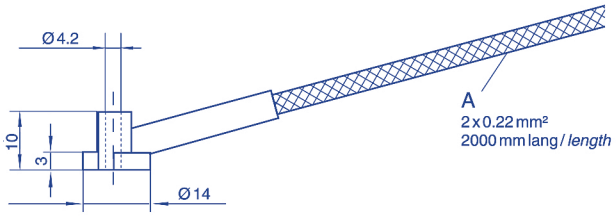
- Fühlerrohr (D)
- *sensor tube (D)*



W12

Flächenfühler
Surface probe

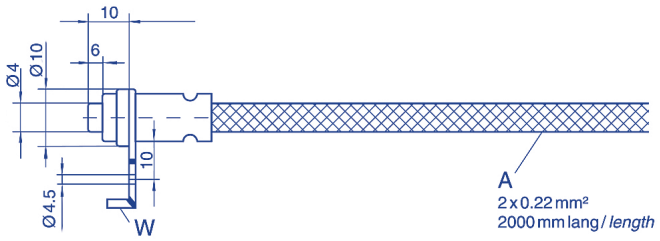
- Fühlerfläche Ø 14 mm zum Befestigen mit einer zentralen Schraube M4
- *sensor plane Ø 14 mm for installation with a central screw M4*



W13

Flächenfühler
Surface probe

- (W) Befestigungswinkel durch eine Schraube M4 anzubringen
- *(W) fixing bracket for installation with screw M4*



Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm
(EL) built-in length in mm
(A) Ausgleichsleitung
(A) compensating cable

(NL) Nennlänge in mm
(NL) nominal length in mm
(B) Bajonett Kappe
(B) bayonet-cap

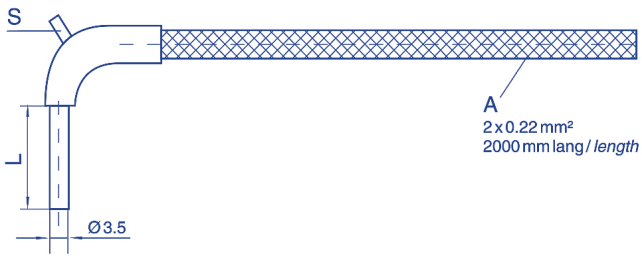
(KL) Kabellänge in mm
(KL) cable length in mm
(L) Länge
(L) length

Sensor: Pt 100, Pt 1000, andere nach Auftrag
Sensor: Pt 100, Pt 1000, others acc. to order

W14

Streckfühler für Bohrungen von Ø 3,6 mm
Plug-in probe for bores of Ø 3,6 mm

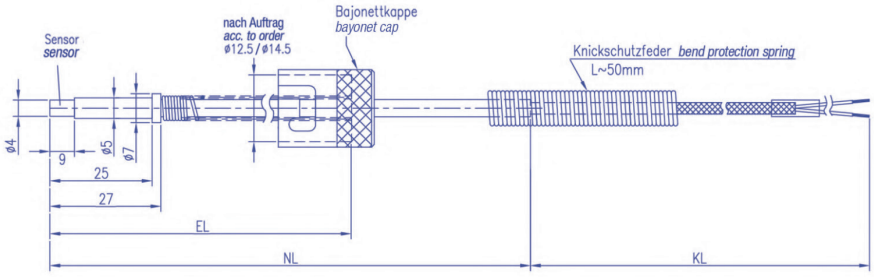
- (S) Spannnase
- Fühler wird durch eine Feder in der Bohrung gehalten
- *(S) tension spring*
- *probe is fixed in the bore hole with a tension spring*



W15

Zylinderfühler
Cylindrical probe

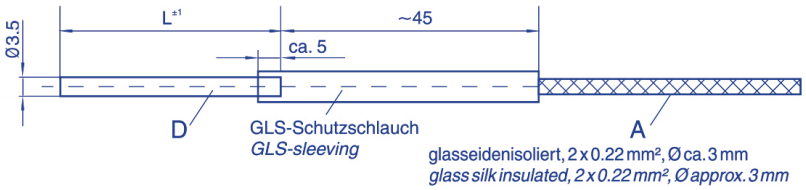
- (B) für variable Einbaulänge
- *(B) for variable installation length*



W16

Zylinderfühler
Cylindrical probe

- Fühlerrohr (D)
- Länge (L) 30 oder 40 mm
- Mantel aus Edelstahl
- *sensor tube (D)*
- *length (L) 30 or 40 mm*
- *sheath from stainless steel*



Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm
(EL) built-in length in mm
(A) Ausgleichsleitung
(A) compensating cable

(NL) Nennlänge in mm
(NL) nominal length in mm
(B) Bajonett Kappe
(B) bayonet-cap

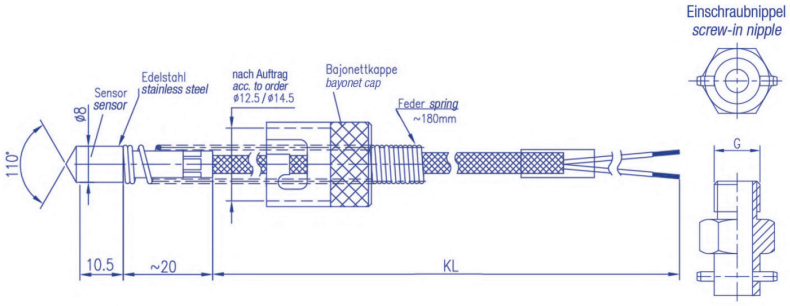
(KL) Kabellänge in mm
(KL) cable length in mm
(L) Länge
(L) length

Sensor: Pt 100, Pt 1000, andere nach Auftrag
Sensor: Pt 100, Pt 1000, others acc. to order

W17

Zylinderfühler mit Einschraubnippel
Cylindrical probe with screw-in nipple

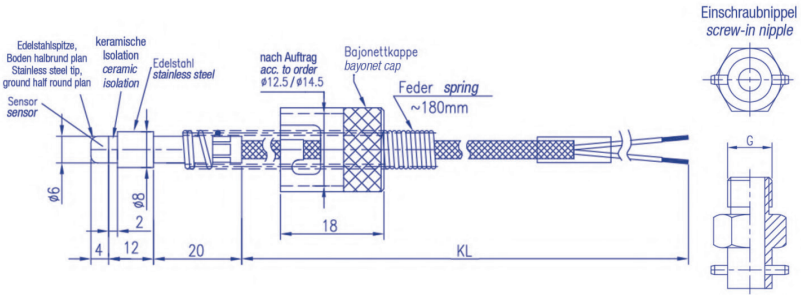
- mit Einschraubnippel (E) R 3/8", auf Wunsch M14x1,5 oder R 1/4"
- *with screw-in nipple (E) R 3/8", on request M14x1.5 or R 1/4"*



W18

Zylinderfühler mit isolierter freiliegender Spitze
Cylindrical probe with insulated tip

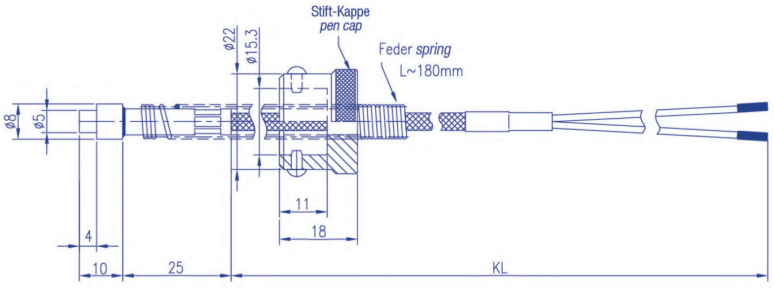
- Fühlerspitze rund mit keramischer Isolation
- *round sensor tip and ceramic insulation*



W19

Zylinderfühler
Cylindrical probe

- (B) durch Drehen auf einer Druckfeder in der Einbautiefe verstellbar
- *(B) by turning the compression spring, the fitting depth can be adjusted*



Examples resistance thermometers for plastics converting machines

(EL) Einbaulänge in mm
(EL) built-in length in mm
(A) Ausgleichsleitung
(A) compensating cable

(NL) Nennlänge in mm
(NL) nominal length in mm
(B) Bajonett Kappe
(B) bayonet-cap

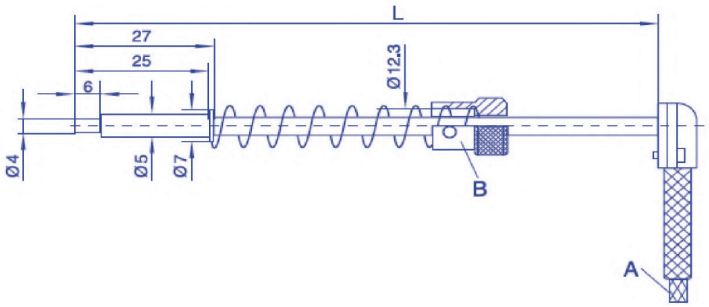
(KL) Kabellänge in mm
(KL) cable length in mm
(L) Länge
(L) length

Sensor: Pt 100, Pt 1000, andere nach Auftrag
Sensor: Pt 100, Pt 1000, others acc. to order

W20

Winkelfühler mit Bajonettverschluss
Angle probe with cap bayonet

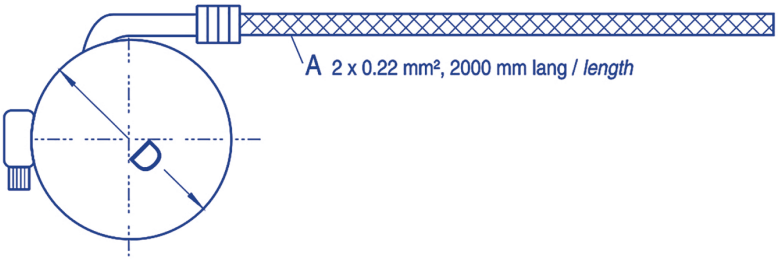
- (B) durch Drehen auf einer Druckfeder in der Einbautiefe verstellbar
- *(B) by turning the compression spring, the fitting depth can be adjusted*



W22

Spannbandfühler
Clamping band probe

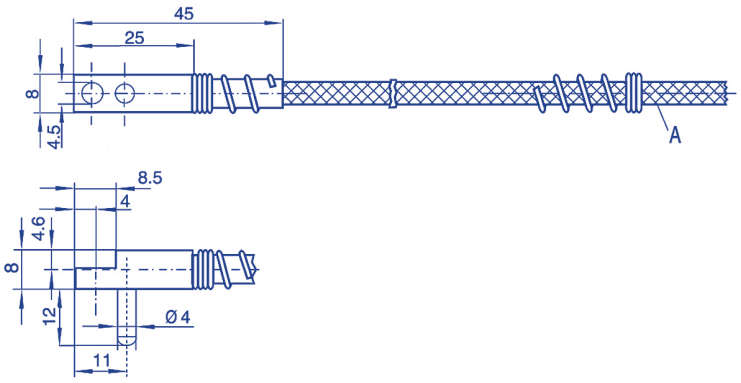
- Bandbreite 9 mm für Spannbereiche zwischen 12 mm und 110 mm
- Fühler wird auf den zu messenden Zylinder wie eine Schlauchschelle aufgeschraubt
- *band width of 9 mm for range of clamping diameters between 12 mm and 110 mm*
- *sensor is fixed onto the cylinder, which has to be measured, like a hose clip*



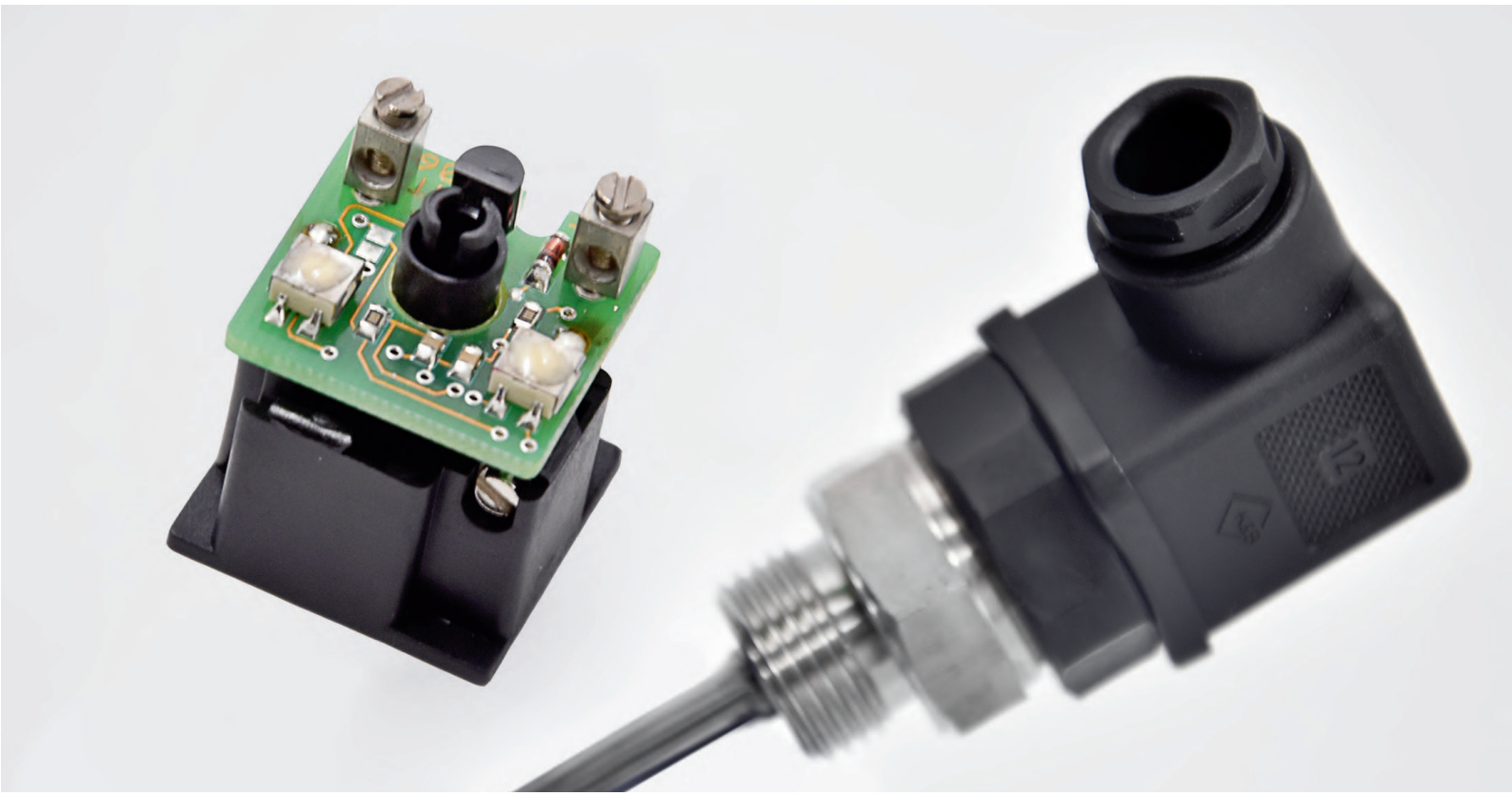
W68

Kleiner Zylinderfühler
Small cylindrical probe

- Fühler-Schutzrohr aus Edelstahl
- *sensor protective tube made from stainless steel*



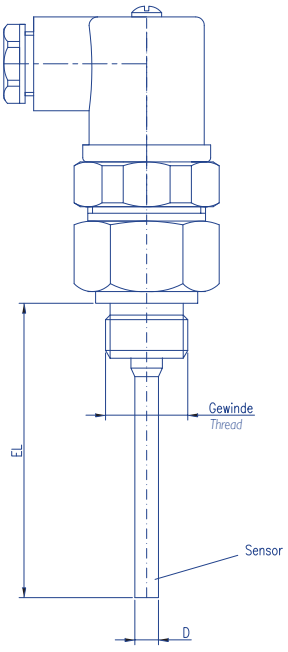
RESISTANCE THERMOMETERS WITH TRANSMITTER MATPI



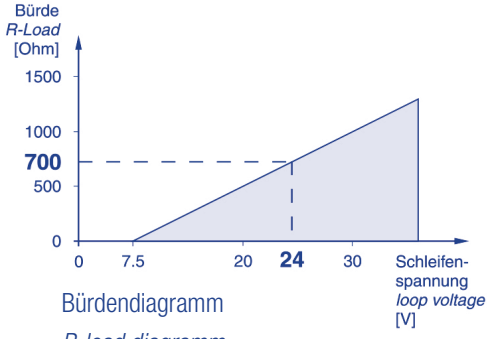
The resistance thermometer with the transmitter MATPI transforms the temperature-sensitive resistance of a RTD into a 4 to 20 mA standard signal accurately. The housing of the transmitter is a female connector acc. to DIN 43650. Thus the refitting of a transmitter for a temperature sensor with a power connector is simply possible by replacement of the junction box.

PARAMETERS

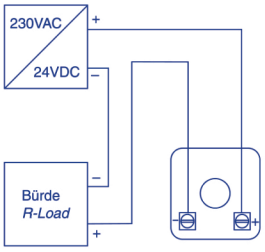
- Sensor: Platinum RTD acc. to EN 60751 (e.g. Pt 100)
- Connector: power connector DIN EN 175301 - 803 (DIN 43650), Binder MSD4, Hirschmann GDM or the like
- Sensor connection: 2-wire circuit
- Measuring current: 0.8 mA
- Output signal: 4 ... 20 mA, 2-wire current loop
- Loop voltage: 7.5 ... 36 VDC
- Sensor fracture: > 24 mA
- Sensor short circuit: < 2.6 mA
- Type of clamps: screw clamps
- Clamps range: 0.1 ... 1.5 mm²
- Error of linearity: < ±1 % temperature
- Dependency: < ±100 ppm
- Weight: approx. 30 g
- Female connector with built-in transmitter is also available separately
- Screw-in temperature probe with power connector



EL = Einbaulänge in mm
EL = built-in length in mm

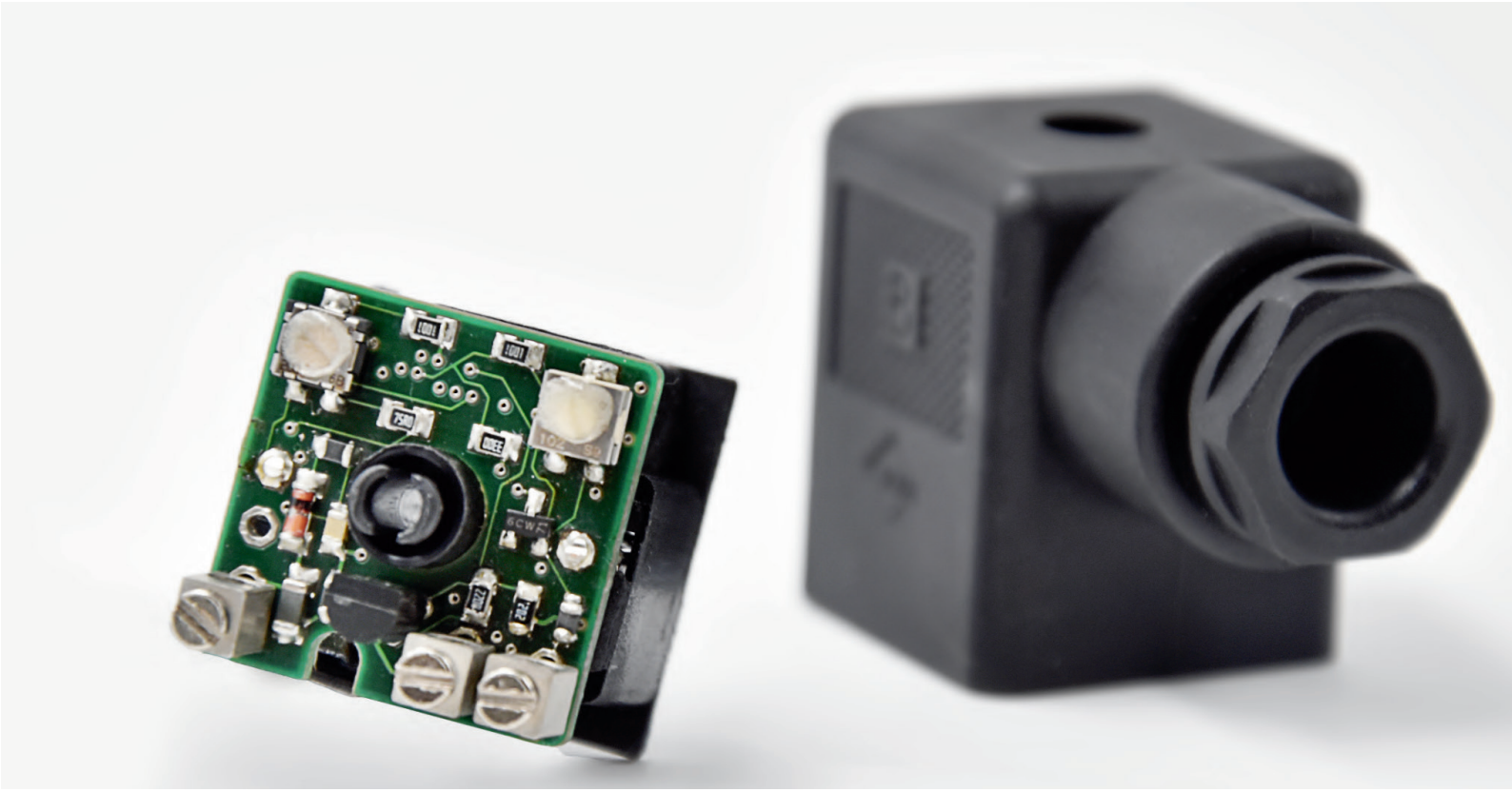


Bürdendiagramm
R-load diagramm

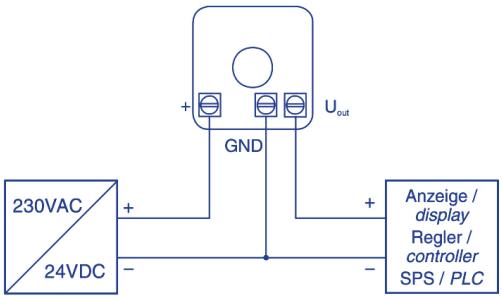


Beschaltung
Circuit

TEMPERATURE TRANSMITTER 0 TO 10 V MATPU



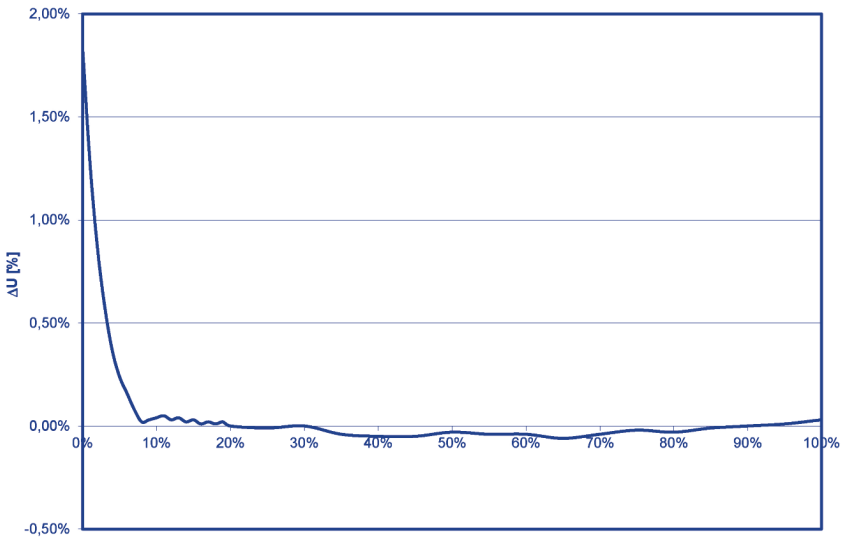
The transmitter MATPU transforms the temperature-depend
resistance of a RTD into a standard 0 to 10 V voltage signal w
high accuracy. For the housing, a four-pole female MA conne
is used. This enables retrofitting a transmitter for a temperatu
sensor with magnetic valve plug connector simply by replacin
the connector.



Beschaltung *Circuit*

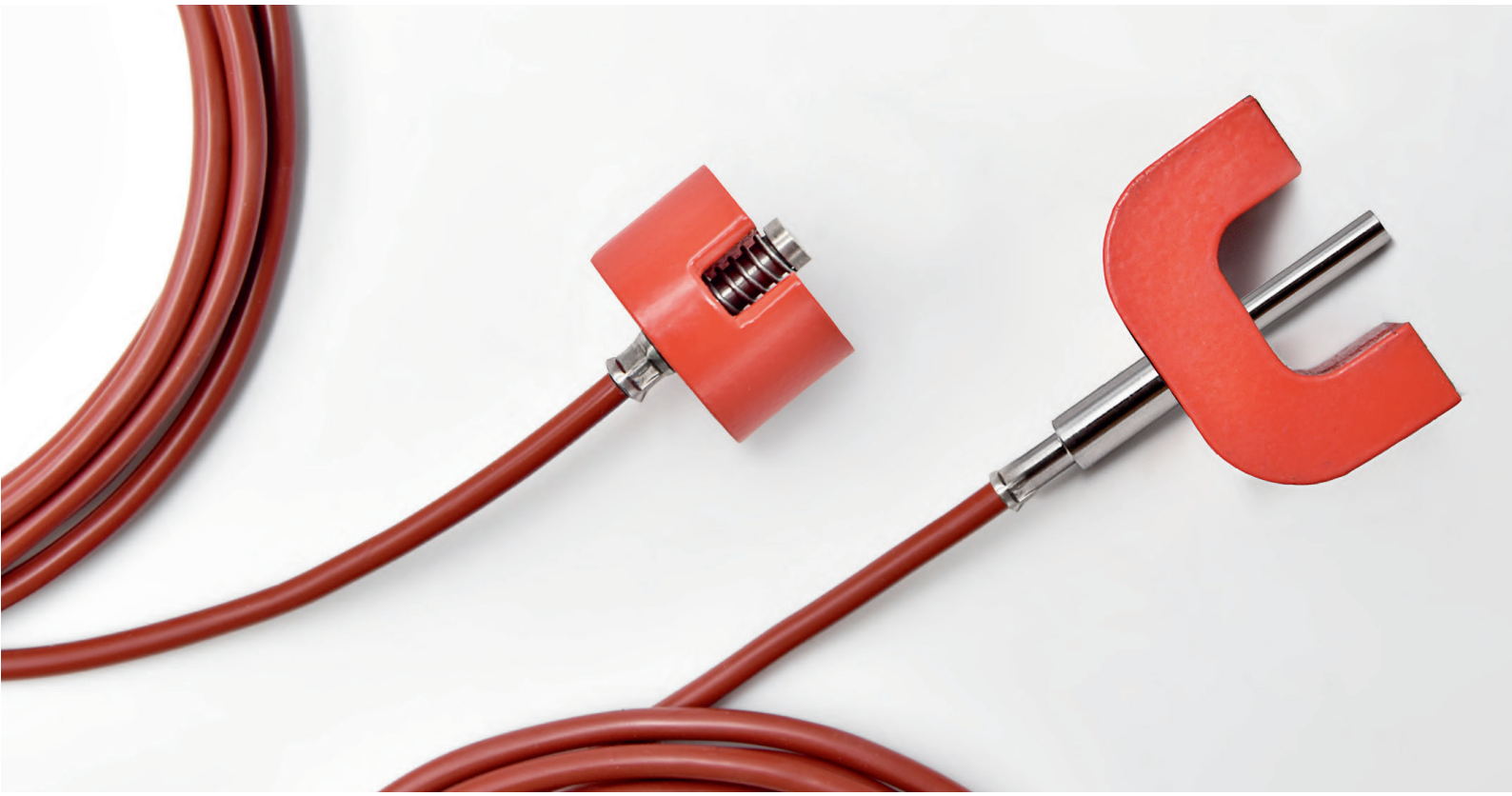
PARAMETERS

- Sensor: Platinum RTD acc. to EN 60751 (e.g. Pt 100)
- Connector: Binder MSD4, Hirschmann GDM or the like
- Sensor connection: 2-wire circuit
- Measuring current: 1.0 mA
- Output signal: 0 ... 10 VDC, independent of load for RL > 500 Ω
- Error of linearity: ±0.25 % from 5 % of measuring span
- Temperature dependency: ±100 ppm
- Supply voltage: 24 VDC ±30 %
- Current consumption: < 25 mA
- Sensor fracture: > 10.5 VDC
- Sensor short circuit: < 0.2 VDC
- Type of clamps: screw clamps
- Clamps range: 0.1 ... 1.5 mm²
- Weight: approx. 30 g



Linearisierungsfehler
Linearization error

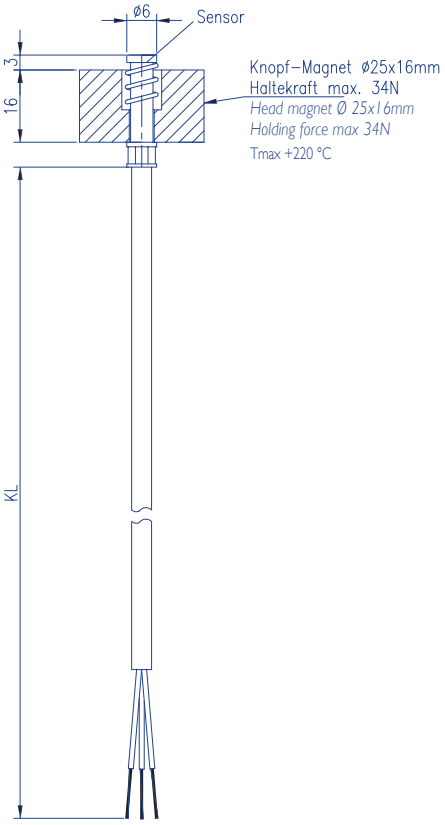
MAGNET PROBES



The surface temperature of magnetic metals can be easily measured by the adhesion of the strong magnetic probe. No editing of the component is required for this. So there is no danger of damages.

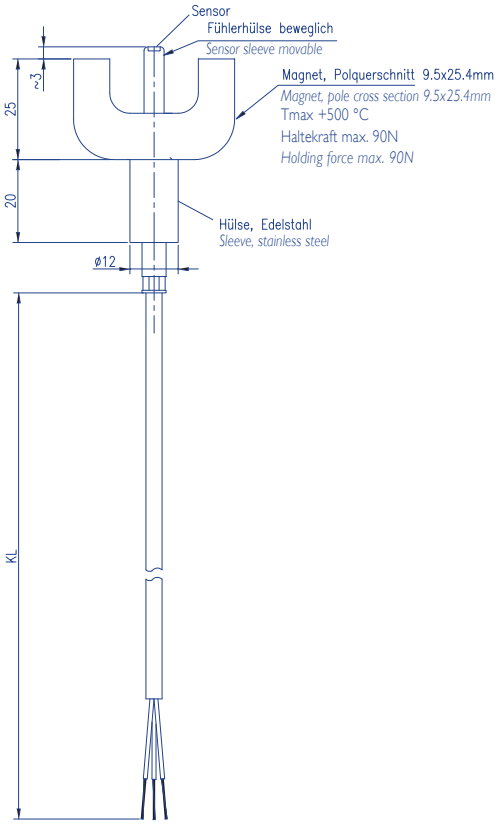
PARAMETERS

- Operating voltage: ≤10 V
- Sensor current, maximum: 0.3 mA for Pt 1000; 1.0 mA for Pt 100
- Nominal resistance: 100 ...1000 Ω / 0 °C
- Connection type: 2-, 3- or 4-wire connection, acc. to order
- Connection cable: teflon/silicone, teflon/teflon, glass fibre or VA-shield - acc. to order
- Other magnets and operating temperatures on request



Magnetfühler 25 x 16 mm

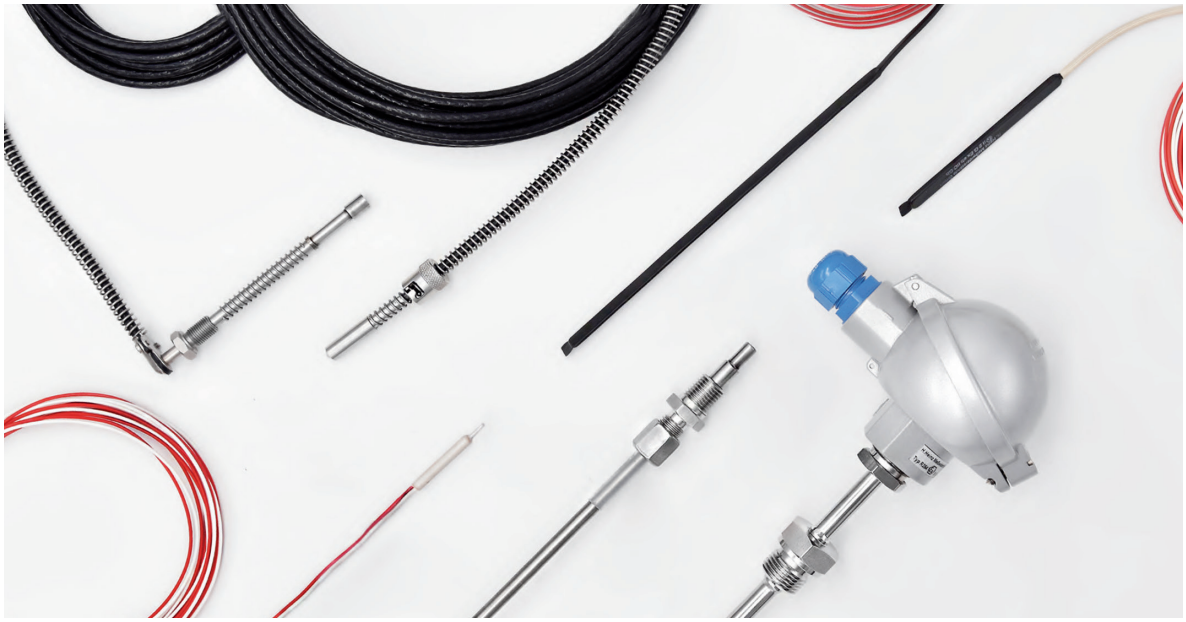
Magnet probe 25 x 16 mm



Magnetfühler 28 x 9,5 x 25,4 mm

Magnet probe 28 x 9,5 x 25,4 mm

TEMPERATURE PROBES FOR SHIPPING AND OFFSHORE



These probes are suitable for temperature measurement for shipping and offshore.

Series:
- Resistance thermometer with screwed end
- Resistance thermometer with right-angled outlet, springmounted
- Cylindrical probe with bayonet cap
- Slot sensor resistors
- End winding probes
- Mineral insulated resistance thermometer with clamp connection

PARAMETERS

- Sensor type: Pt 100
- Measuring circuits: 1 or 2
- Protective tube material: stainless steel
- Type approval: (DNV-GL)
- Operating temperature:
    - Resistance thermometer with right-angled outlet, spring-mounted
      –60 °C ... +180 °C
    - Cylindrical probe with bayonet cap
      –60 °C ... +180 °C
    - Resistance thermometer with screwed end
      –200 °C ... +800 °C
    - Slot sensor resistors
      –50 °C ... +180 °
    - End winding probes
      –55 °C to +180 °C
    - Mineral insulated resistance thermometer with clamp connection
      –200 °C bis +600 °C

Further technical data is specified in the type approvals / drawings.

RAILWAY PROBES

Transmission probes

This probe is used for temperature detection on gear wheel bearings.

- Measuring circuits: 1 or 2
- Sensor: 1x Pt 100 Ω or 2x Pt 100
- Version: diameter, installation length according to order
- Protective material: stainless steel
- Cable: as a wiring harness with a plug or free ends

Indoor probes

- Indoor probe in surface-mounted housing
- Temperature range: 0 - 50 °C
- Sensor: acc. to order

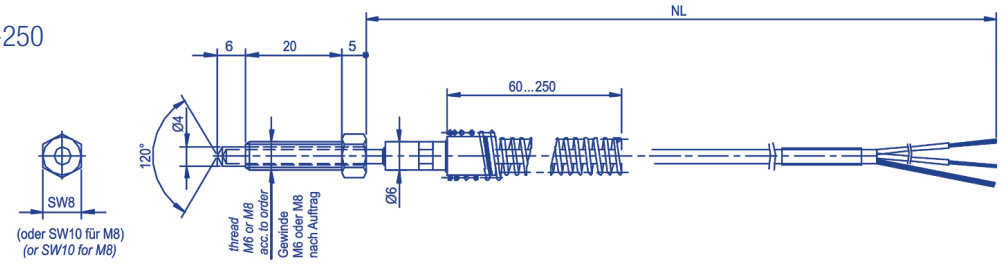
BEARING TEMPERATURE PROBES

Bearing temperature probes are designed to measure the temperature in the end shields and windings of high voltage motors. The sensors can be screwed in directly. Our products are available with or without approval acc. to ATEX. The exact data of our ATEX probes can be found in our product catalogue "Temperature sensors with Approval acc. to ATEX".

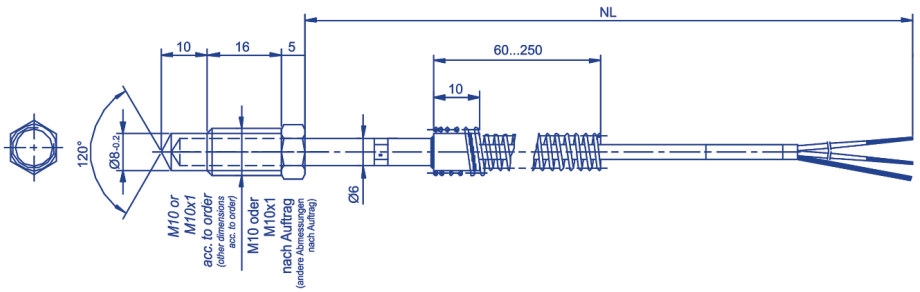
PARAMETERS
TYPES WTH 160-250, WTH 280-400

- Operating voltage: U ≤30 V
- Sensor current, maximum: 2 mA
- Maximum power: 10 mW
- Maximum energy: 10 Joule
- Self-heating: ≤1K
  (at max. power in still air)
- Nominal resistance: 100 Ω / 0 °C, 500 Ω / 0 °C,
  1000 Ω / 0 °C
- AC proof voltage: 1.0 kV / 50 Hz, 1 min
- Connection type:
  1 sensor: 2-, 3- or 4-wire connection
  2 sensors: 2- or 3-wire connection
- Operating temperature: –55 °C ... +180 °C
- Connection cable: teflon/shield/silicone

WTH 160-250



WTH 280-400



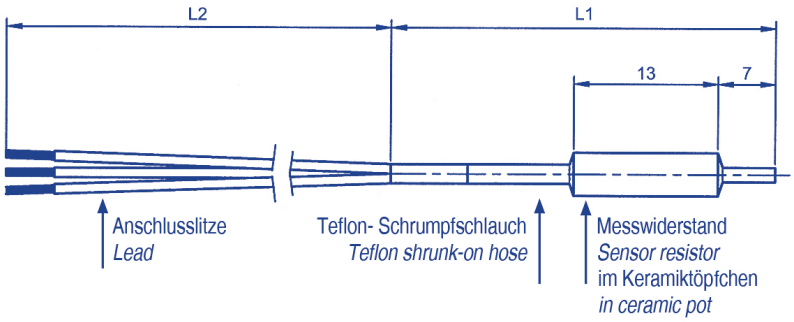
END WINDING PROBES

End winding probes are designed to measure the temperature of the windings in high voltage motors. Our products are available with or without approval acc. to ATEX. Details of our ATEX products can be found in our product catalogue "Temperature sensors with Approval acc. to ATEX".

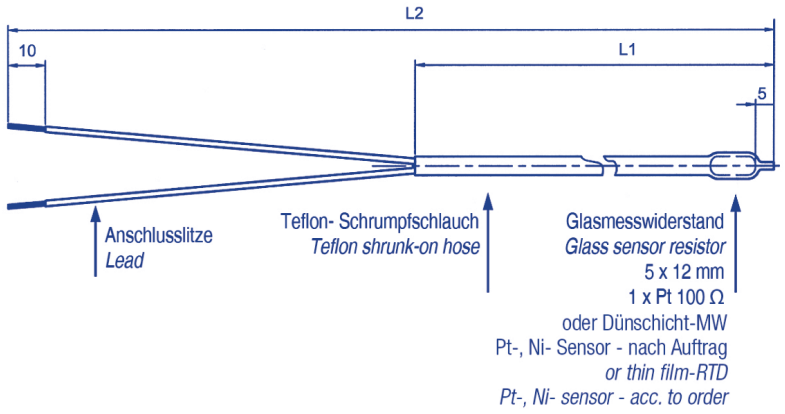
PARAMETERS
TYPES NWT PYRA 8K, PYRA 8G

- Operating voltage: U ≤10 V
- Sensor current: 0,8 mA ... 2 mA
- Maximum active power: 10 mW
- Self-heating: ≤1 K (at maximum power in still air)
- Sensor: Pt- or Ni- element, others on request
- Nominal resistance: 100 Ω ... 1000 Ω / 0 °C
- AC proof voltage: 5.0 kV / 50 Hz, 1 min, sensor in salt water
- Connection type: 2-, 3- oder 4-wire connection
- Operating temperature: −55 °C ... +180 °C
- Connecting cable: teflon

NWT Pyra 8K



NWT Pyra 8G



SLOT SENSOR RESISTORS

Slot sensor resistors are designed to measure the temperature of the windings in high voltage motors. Our products are available with or without approval acc. to ATEX. Details of our ATEX products can be found in our product catalogue "Temperature sensors with Approval acc. to ATEX".

PARAMETERS

- Operating voltage: U ≤10 V
- Sensor current: 0,8 mA ... 2 mA
- Maximum active power: 10 mW
- Self-heating: ≤1K (at maximum power in still air)
- Nominal resistance: 100 Ω ... 1000 Ω / 0 °C
- AC proof voltage: 5.0 kV / 50 Hz, 1 min, sensor in salt water
- Connection type: 2-, 3- oder 4-wire connection
- Operating temperature:
  −50 °C ... +180 °C (für NWT 50C, NWT 200C, NWT 200G)
  −55 °C ... +180 °C (für NWT 100C)
- Connecting cable: teflon connection cable
  (on request also available wih shield or single wires)

NWT 50C / 100C / 200C / 200G / DNW 180-3.1, DNW 180-3...-5

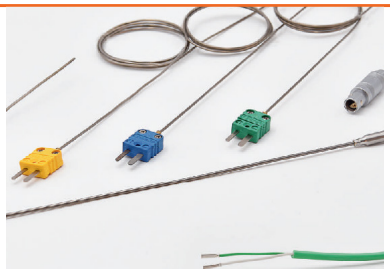
Länge / *Length:*	l	nach Auftrag
Breite / *Width:*	b	acc. to order
Dicke / *Thickness:*	s	

ELVARME

VORES PRODUKTSORTIMENT INKLUDERER:

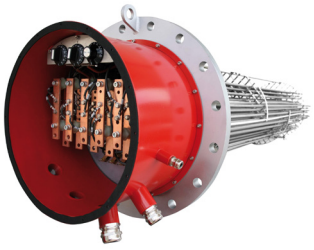
ELPATRONER

VARMEPATRONER



TERMOFØLERE

HSSD



FLANGEVARMELEGEMER KUNDEDES.

TEMPERATURFØLERE

VI FØRER PRODUKTER INDENFOR KATEGORIERNE:

AUTOMATIK

HVAC & BYGNINGS-AUTOMATIK

KØLEPROFILER

NEWTRONIC
Ove Jensens Alle 35 F
DK-8700 Horsens
Denmark
www.newtronic.eu
www.newtronic.dk
+45 7669 7090