TF04

Temperature Probes with Interchangeable Measuring Insert acc. to DIN 43735

- **Resistance thermometer or thermocouples**
- **With replaceable measuring insert**
- **Protective tube with threaded of weld-on connection, or with sliding flange**
- **Measuring ranges: resistance thermometer -200 °C … +600 °C**
- **Thermocouples -40 °C … +1100 °C**
- **Optional with transmitter output 4(0) … 20 mA, 0 … 10 V**

Description:

The resistance thermometers and thermocouples are manufactured to DIN 43770 and are made of a sturdy, heavy duty stainless steel protective tube, a replaceable measuring insert and a connecting head. The standard protective tubes are available with a male-threaded fitting, sliding flange or for welding on. Other options are available with fixed flange, sanitary flange or clamp connection.
Apart from the Form B connecting head, other designs like Form A, stainless steel field housing etc., are available. The measuring insert is a Pt 100 sensor, Class B (optional Class A) or a model K (NiCr-Ni) thermocouple. Alternatively, other resistance sensors or thermocouples can be supplied.
As an option, these temperature probes can be fitted with a transmitter, which can be set at the factory to customer specification for a specific measuring range.

Typical applications:

Resistance thermometers and thermocouples as per DIN 43770 are very suitable for use in heavy industrial machinery and systems, installations and plants, tanks and piping systems, in the chemical industry and in food applications and are the devices of choice for measuring temperature in liquids and gases.

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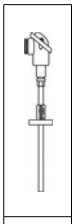
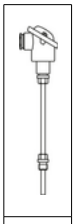
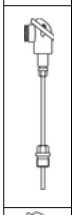
Models:



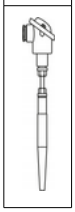
TF04.A…:
with sliding flange
protection tube form A
acc. to DIN 43772



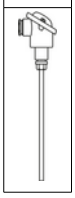
TF04.B…:
with G 1/2 male thread
protection tube form B
acc. to DIN 43772



TF04.C…:
with G 1 male thread
protection tube form C
acc. to DIN 43772



TF04.D…:
with weld on
connection
protection tube form D
acc. to DIN 43772



TF04.E…:
smooth shaft
without additional
protection tube

Technical Data:

Connecting head:	Form B acc. to DIN 43729 made of aluminium metric conduit PG 16 others available on request
Protection class:	IP 54 acc. to EN 60529
Terminal block:	Ceramics (without transmitter)

Resistance thermometer:

Meas. element:	1x Pt 100, 3-wire, Class A acc. to DIN IEC 751, others available on request
Insert tube:	st. steel 1.4571
Protection tube:	st. steel 1.4571
Temp. range:	–200 °C … +600 °C
Measuring range selection:	0…50 °C/100/150/200/300/400/500 °C

All quoted measuring ranges can be altered by ±10 %
e.g. -10…90°

Additional zero setting:	-50…50 °C, e.g. -50…100 °C

Thermocouple:

Meas. element:	1x thermocouple model K NiCr-Ni acc. to DIN IEC 584 class 2, acc. to DIN EN 60584 others available on request
Insert tube:	Inconel 600 2.4816
Protection tube:	steel 1.4841, optional: 1.4749 ceramic
Temp. range:	–40 °C … +1100 °C
Measuring range:	min. 0 … 246 °C to max. 0 … 1232 °C
Zero setting:	±10 % of measuring range, e.g. –50 … 500 °C

Order Code:

Order number:	**TF04.**	**B.**	**P.**	**B0120.**	**0.**	**0**

Temperature Probes with install. fitting

Models:
A = sliding Flange
B = G 1/2 male thread
C = G 1 male thread
D = weld-on protective tube
E = smooth shaft

Measuring element:
P = resistance thermometer 1x Pt 100
K = thermocouple 1x type K

Model and installation length:
A0200 - C1870 = see table 1
D1065 - D6125 = see table 2
E0050 – E2000 = see table 3
S = special version on request

Transmitter: (please specify measuring range) see below
0 = without
1 = output 4…20 mA, 2-wire

Options:
0 = without
xx = See table „Options“

Options:

Description:	Code
Double measuring element	1
Without protective tube, TF04.B(C)... only	2
Shortened neck extension (30, 60 or 90 mm), TF04.B(C) only	3
Terminal connector head Form A	4
Terminal connector head field housing, aluminium, IP 68	5
Terminal connector head field housing, st. steel, IP 68	6
Terminal connector head with screwed cover Form GT	7
Resistance element Pt 500, 3-wire	8
Resistance element Pt 1000, 3-wire	9
Resistance element 4-wire	10
Thermocouple Fe-CuNi, model J	11
Thermocouple Pt13Rh-Pt, model R	12
Thermocouple Pt-RhPt, model S	13
Flange DIN 43734, DN 15 for protective tube Form A	14
fixed flange DN 15…50, please specify in writing	15
sanitary flange, please specify in writing	16
Clamp- flange, please specify in writing	17
Protective tube reduced in diameter to 6 mm at the bottom, 60 mm long	18
Protective tube perforated for liquids	19
Protective tube perforated for gases	20
Connecting head with HAN-7-D plug	21

Setting range for transmitter:

factory preset to the specified measuring range

Transmitter:

Housing:	aluminium
Electr. connection:	terminals
Input signals:	Pt 100, 3-wire NiCr-Ni (K), Fe-CuNi (J), Pt-RhPt (S)
Storage temp.:	–40 °C … +100 °C
Operating temp.:	–20 °C … + 85 °C
Supply voltage:	12 … 30 VDC
Output:	4 … 20 mA, 2-wire (others on request)

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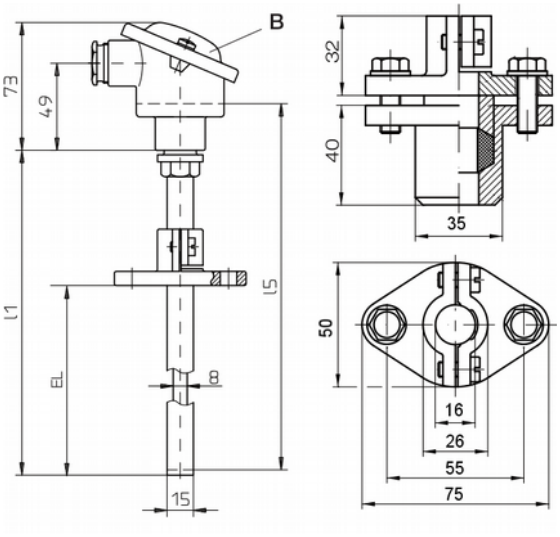
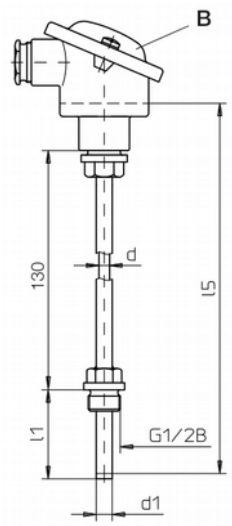
Dimensions:

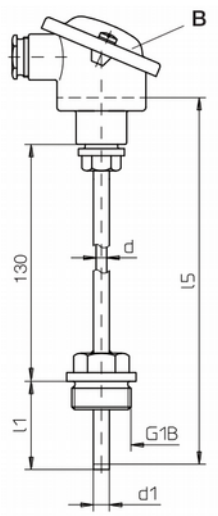
Protective tube Form A acc. to DIN 43764:



Protective tube Form B acc. to DIN 43772

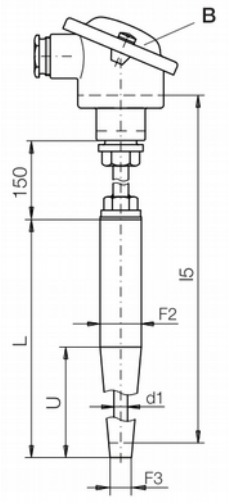


Protective tube Form C acc. to DIN 43772

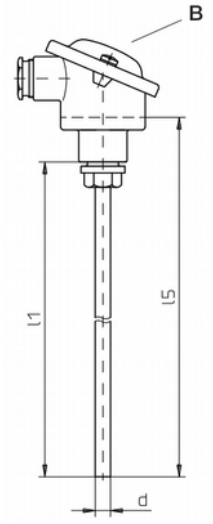


(with neck extension, length 120 mm)

Protective tube Form D acc. to DIN 43772



Form E: smooth shaft, without prot. tube



(with neck extension, length 120 mm)

Table 1:

Form A			Form B and C				Meas. insert
L1[1)]	d	d1	L1[1)]	L1[1)]	d	d1	L5
[mm]							
-	8	15	B0065	C0065	6	Form B9 Form C 11	220
A0200*			B0070	C0070			225
A0250			B0120	C0120			275
A0290			B0160	C0160			315
A0350			B0220	C0220			375
A0380			B0250	C0250			405
-			B0275	C0275			430
A0410			B0280	C0280			435
A0500			B0370	C0370			525
A0530			B0400	C0400			555
A0630			B0500	C0500			655
A0710			B0580	C0580			735
A0800			B0670	C0670			825
A1000			B0870	C0870	8	Form B11 Form C14	1.025
A1250			B1120	C1120			1.275
A1400			B1270	C1270			1.425
A1600			B1470	C1470			1.625
A1800			B1670	C1670			1.825
A2000			B1870	C1870			2.025

[1)] Example: A0200 = design A, L1 = 200 mm

Table 2:

Form D				Measuring insert	
U[2)] [mm]	L [mm]	F2 [mm]	F3 [mm]	L5 [mm]	d1 [mm]
D1065	140	24	12,5	315	6
D2125	200			375	
D4065					
D3125		26	15,0		8
D6125	255			430	
D5125	260	24	12,5	435	6

[2)] Example: D1065 = design D, L1 = 65 mm

Table 3:

Form E		Meas. insert	Form E		Meas. insert
l1[3)] [mm]	D [mm]	l5 [mm]	l1[3)] [mm]	D [mm]	l5 [mm]
E0050	6	75	E0530	6	555
E0100		125	E0630		655
E0150		175	E0710		735
E0200		225	E0800		825
E0250		275	E1000	8	1025
E0290		315	E1250		1275
E0350		375	E1400		1425
E0380		405	E1600		1625
E0410		435	E1800		1825
E0500		525	E2000		2025

[3)] Bsp: E0050 = Bauform E, l1 = 50 mm

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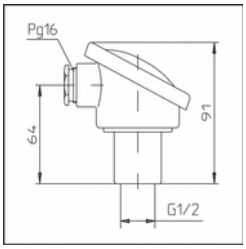
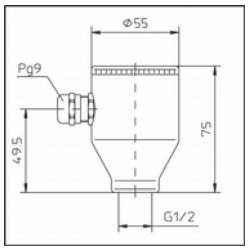
Models:

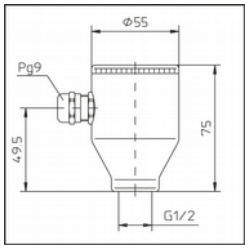
Connecting heads with screw plug



Form: DIN 43729 / Form A
Material: Aluminium
Protection class: IP 54

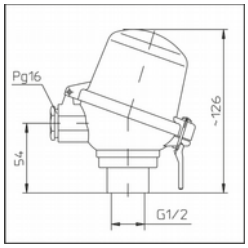


Form: Field housing
Material: Aluminium
Protection class: IP 68

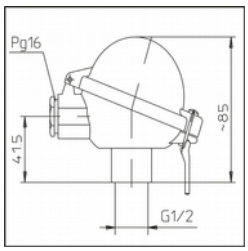


Form: Field housing
Material: St. steel 1.4301
Protection class: IP 68

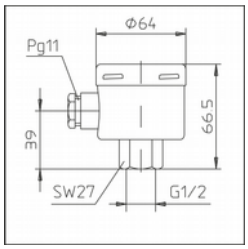
Connecting heads with quick-release connection



Form: Form DANW
Material: Aluminium
Protection class: IP 65

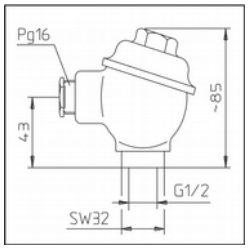


Form: DAN
Material: Aluminium
Protection class: IP 65

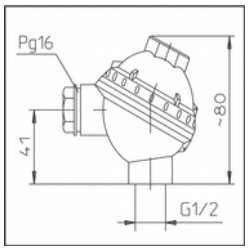


Form: Form C
Material: St. steel 1.4301/ 1.4571
Protection class: IP 65

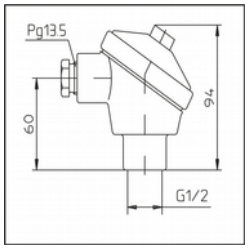
Connecting heads with screw cap



Form: Form GT
Material: Cast iron
Protection class: IP 54



Form: Form NS
Material: ITAMID /NORYL
Protection class: IP 45



Form: Form D
Material: Aluminium
Protection class: IP 65

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