



TK || Long-Distance Expansion Thermometer

Application

The long-distance expansion thermometer TK serves as indicator, monitor, and controller.

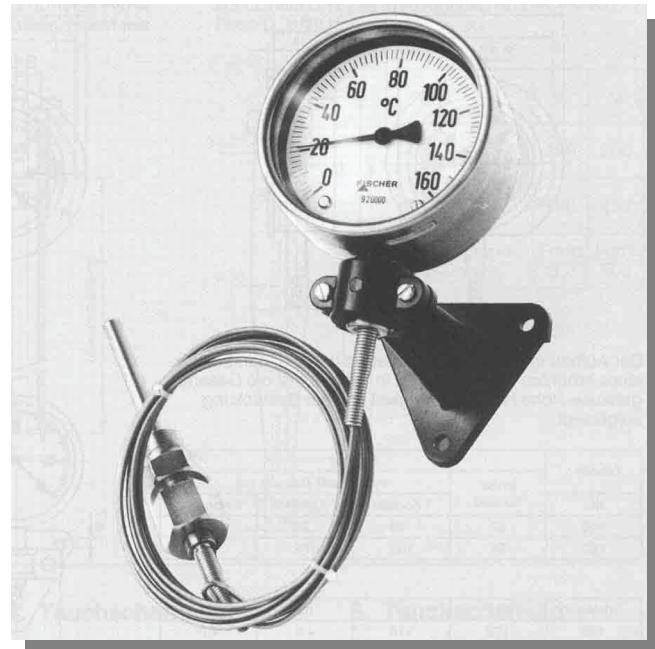
It is used in all industries where temperature shall be registered.

Operation

The instrument's temperature detection part is filled with nitrogen. Temperature changes at the end of the probe stem cause pressure changes in the filled system. An integrated coil spring converts this pressure change to a tension which is intensified by a motion work and transferred to the 270° scale.

Measuring Ranges

Code	Temperature range [°C] [°F]	
25	-30 .. +50	-22 .. 122
23	-30 .. +30	-22 .. 86
26	-20 .. +40	-4 .. 104
28	-10 .. +50	14 .. 122
31	0 .. +60	32 .. 140
32	0 .. +80	32 .. 176
40	0 .. +100	32 .. 212
41	0 .. +120	32 .. 248
51	0 .. +160	32 .. 320
60	0 .. +200	32 .. 392
61	0 .. +250	32 .. 482
70	0 .. +300	32 .. 572
80	0 .. +400	32 .. 752
90	0 .. +500	32 .. 932
91	0 .. +600	32 .. 1112
99	special ranges up to 800°C on request	

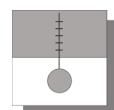


Main Features

- rugged and vibration resistant measuring system
- moisture resistant case
- high accuracy (class 1) acc. to DIN EN 13190
- very short reaction time
- mechanical working
- ambient temperature compensation and zero correction
- suitable for equipment of contact devices
- suitable in combination with Pt100 measuring resistance
- long-distance indication using capillary tube transmission line between probe and casing

Typical Applications

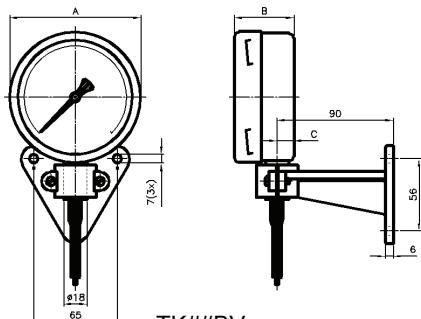
- process technology
- environmental technology
- heating systems, ventilating and air-conditioning systems
- food technology



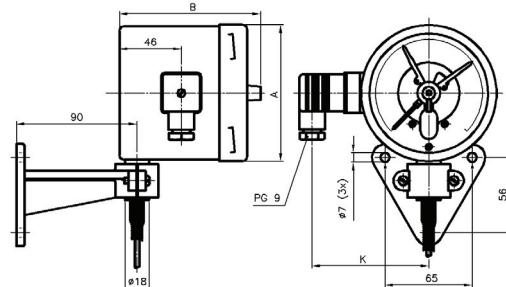
Specifications

Case Model / Probe Arrangement (all units in mm unless stated otherwise)

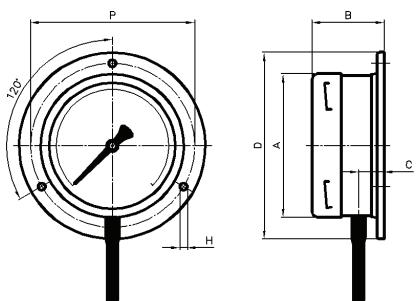
TK##KV....



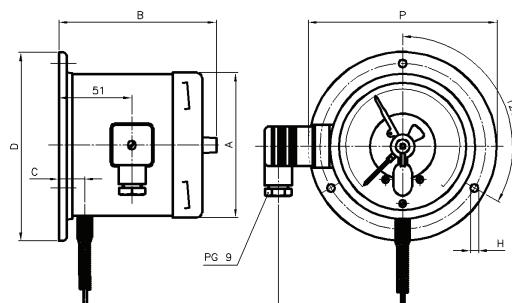
TK##KV....with inbuilt contacts



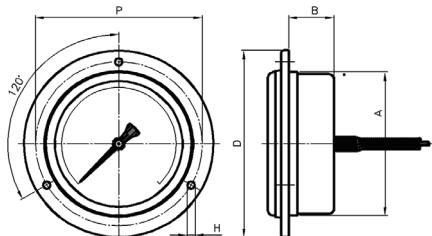
TK##BV....



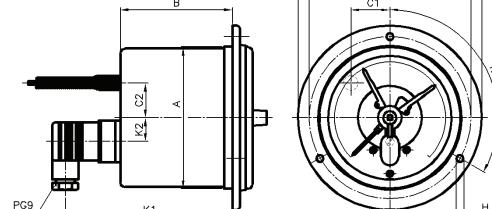
TK##BV....with inbuilt contacts



TK##HV....



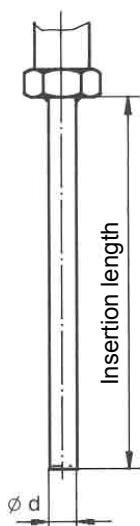
TK##HV....
with inbuilt contacts



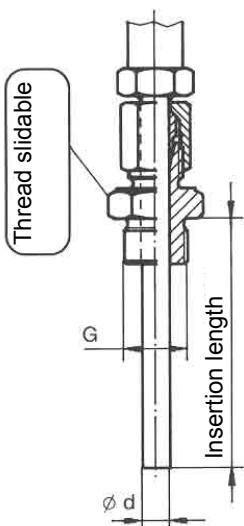
Probes without protective sleeve (all units in mm unless stated otherwise)

Probe and screw connection consist of stainless steel 1.4571.

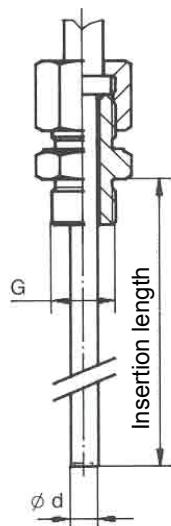
Type A
plain stem



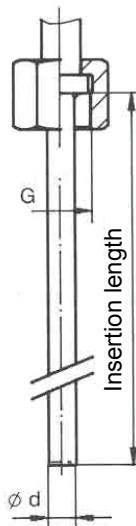
Type J
like type A, with
slideable
compression fitting



Type B
stem with union, union
nut, and loose screw
connection



Type C
stem with union and
union nut

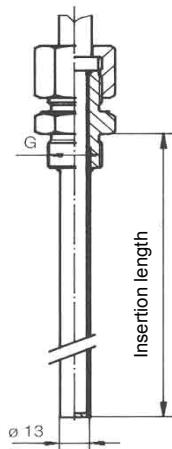


Probes with additional Protective Sleeve (all units in mm unless stated otherwise)
only for probes with Ø10mm

The additional protective sleeve is available of the following materials: stainless steel (1.4571), steel C22.8 (only type K and M)

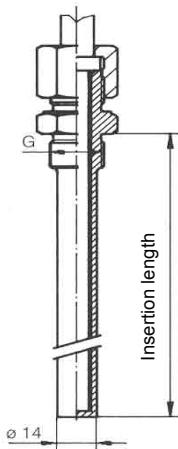
Type E

like probe type C, but with additional protective sleeve PN 25
(not with connection G3/8)



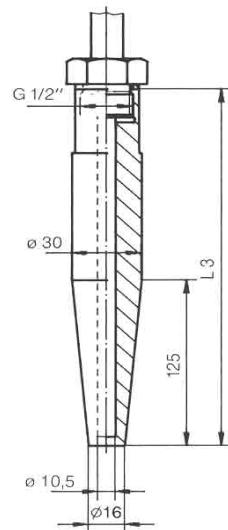
Type F

like probe type C, but with additional protective sleeve PN 64 of solid material (not with connection G3/8).



Type K and M

like probe type B and J with screw connection G1/2, but with additional weld-in protective sleeve PN 250 in the style of DIN 43772 type D, Ø 30 mm.



Type	K	M
Length of protective sleeve L3	200	260
Insertion length L	190	250
Basic probe type	Type B, J	Type B, J

Insertion Length and Diameter (Ød)

A minimum insertion length is essential to get the same temperature for the expansion liquid enclosed in the probe as the temperature of the medium which shall be measured. This minimum insertion length depends on the diameter of the probe. Please note that probes with protective sleeve must have a diameter of Ø 10 mm.

Insertion length-(Ød) [mm]	Ø6	Ø8	Ø10	Ø12	Ø14
Minimum insertion length L _{min} [mm]	150	90	70	40	35

Insertion lengths are available from 60 to 400 mm, see the Ordering Code for details. Intermediate lengths are available on request.

Connection

We offer the following screw connections of stainless steel 1.4571 for pipe mounting : G1/2, G3/4, G1, G3/8. Other connections are available on request. The expansion thermometer is available without screw connection, too.

Capillary Tube Transmission Line

The capillary tube transmission line consists of stainless steel 1.4571. The following lengths are available 1/ 2/ 3/ 5/ 7,5/ 10 m. Please state the desired length with your order. Other lengths are available only on request.

Ordering Code

Long-Distance Expansion Thermometer

TK

Measuring Range

Code number (acc. to page 1, please state).....>

Case Model / Probe Arrangement

Rear mounting, probe, capillary tube and connection of 1.4571	> B	V
Front mounting, probe, capillary tube and connection of 1.4571	> H	V
Wall mounting, probe, capillary tube and connection of 1.4571	> K	V

Case Type

NS 100 bayonet ring case IP54 stainless steel 1.4301	> 7
NS 160 bayonet ring case IP54 stainless steel 1.4301	> 8

Probes Without Protective Sleeve

Plain stem	> A
Plain stem with slideable compression fitting	> J
Stem with union, union nut, and loose screw connection	> B
Stem with union and union nut	> C

Probes With Additional Protective Sleeve: (only for probes with Ø10mm)

Stem with union, union nut with additional protective sleeve PN 25 type E	> E
Stem with union, union nut with additional protective sleeve PN 64 type F	> F
Stem with union, union nut and loose screw connection with additional protective sleeve PN 250 type K	> K
Stem with union, union nut and loose screw connection with additional protective sleeve PN 250 type M	> M

Protective Sleeve Material

Stainless steel (1.4571)	> V
Steel C22.8 (1.0460) (only type K and M).....	> S
For probes without protective sleeve	> -

Screw connection

no screw connection	> 0
G 1/2	> 2
G 3/4	> 3
G 1	> 4
G 3/8	> 5
other (please state)	> 9

Insertion Length

60 mm (only for Ø12 and Ø14 possible)	> 1
100 mm	> 2
160 mm	> 3
250 mm	> 4
400 mm	> 5
other lengths (please state)	> 9

Probe-Ød

Ø 6	> 2
Ø 8	> 3
Ø 10	> 4
Ø 12	> 5
Ø 14	> 6

Liquid Filling

Without liquid filling	> 0
With glycerine	> 1
With Napvis (always with inbuilt contacts)	> 2
Without silicon oil	> 3

Additional Pointer

Without additional pointer	> 0
Adjustable reference pointer	> 1

Contact Expansion Thermometer

without contacts	> 0
Inbuilt contacts acc. to separate data sheet	> 1
Inbuilt turning angle transmitter acc. to separate data sheet	> 2
Surface mounted contacts acc. to separate data sheet	> 3
Surface mounted turning angle transmitter acc. to separate data sheet	> 4

Capillary length

1 m	> 1
2 m	> 2
3 m	> 3
5 m	> 4
7,5 m	> 5
10 m	> 6
other length (please state)	> 9

