

Application

- For technical temperature measurements in combustion processes and hot-gas environments, primarily in all types of furnaces up to 1500°C (shortly 1800°C)
- Fields of application
 - Brickworks, porcelain factories
 - Refuse and hazardous waste incineration
 - Glass annealing ovens, ceramic baking ovens

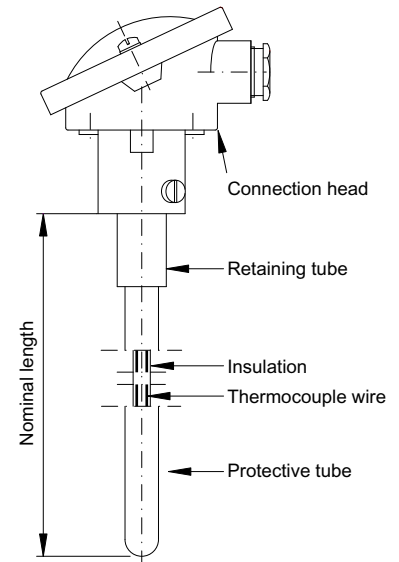
Technical features

- Thermocouple type K, N, R, S or B acc. to IEC 584-1
- Built acc. to DIN 43733
- Connected to the process by adjustable flange, gas-tight flange or compression fitting
- Gas-tight ceramic protective tube in KER 610 or KER 710
- Modular design and standard length minimize the necessary numbers of spares
- Optionally, can be supplied with head mounted transmitter

Ordering

The requested sensor is selected from the table below
The colour code means:

- Standard: Built of standard modules (short delivery time)
- Variant: Modified standard modules
- Special: Special versions and material. We are specialist in temperature measurement. Please contact us and we will to our best do solve your specific measuring task.



Ordering information

Specifications number	1103-	Sensor								Transmitter					
										4mA:	°C	20mA:	°C 4)		
Protective tube, ceramic										Transmitter, 2-wire, 4-20mA output					
KER 610. Al ₂ O ₃ >60% max. 1400°C										0	None				
KER 710. Al ₂ O ₃ >99.7% max. 1700°C										1	FPTU galvanic isolated. As terminal block (in cap)				
15mm OD. 2 mm wall. KER 610		0								2	FPTU galvanic isolated. EEXialICT4/6. As terminal block (in cap)				
15mm OD. 2.5mm wall. KER 710. Rec. f/ S/R/B		1								a	FPTT galvanic isolated. As terminal block (in cap)				
Special:		s								b	FPTT galvanic isolated. EEXialICT4/6. As terminal block (in cap)				
										s	Special:				
										Note 4: Please specify measuring range					
Nominal length (mm)										Tolerance acc. to IEC 584-2					
500		0	5	0	0					0	Class 2, for K and N, i.e. ± 2.5°C or 0.0075 x t _{actual} (°C) 3)				
710		0	7	1	0					1	Class 2, for R, S and B, i.e. ± 1.5°C or 0.0025 x t _{actual} (°C) 3)				
1000		1	0	0	0					2	Class 1, for K and N, i.e. ± 1.5°C or 0.0040 x t _{actual} (°C) 3)				
1400		1	4	0	0					Note 3: The highest value apply					
2000		2	0	0	0										
Interim lengths (Min. 250, max. 2000)		x	x	x	x										
Retaining tube										Number of thermocouples					
22 OD. L=150 mm steel 35		0								0	1				
22 OD. L=500 mm steel 35		1								1	2				
22 OD. L=1000 mm steel 35		2													
22 OD. L=xxxx mm steel 35		9a													
Special:		s													
										Thermocouple					
										Max. temperature 2)					
										0	NiCr-Ni	K	3.0mm	1000°C	1200°C
										1	NiCrosil-Nisil	N	3.0mm	1150°C	1250°C
										2	Pt10% Rh-Pt	S	0.3mm	1300°C	1600°C
										3	Pt10% Rh-Pt	S	0.5mm	1450°C	1600°C
										4	Pt13% Rh-Pt	R	0.3mm	1300°C	1600°C
										5	Pt13% Rh-Pt	R	0.5mm	1450°C	1600°C
										6	Pt30% Rh-Pt 6%Rh	B	0.5mm	1500°C	1800°C
										7	Pt10% Rh-Pt	S	0.35mm	1400°C	1600°C
										8	Pt13% Rh-Pt	R	0.35mm	1400°C	1600°C
										1	Special				
										s	Special				
										Note 2: The values apply for the thermocouple					
Process connection (see page 2)										Accessories					
None		0								Process connection: See data sheet 9113					
Fig. 1 Adjustable flange		1								Transmitter: See data sheet 9168					
Fig. 1+2 Adjustable flange (for metallic tube)+counter flange		2													
Fig. 3 1" BSP Compression fitting for 22mm OD retaining tube		3													
Special:		s													
Connection head										Customer information					
A: Degree of protection IP 53		0								Name:					
AHSH: Degree of protection IP 53, high cap for transmitter		1								Tel.:					
Special:		s													

Accessories

Process connection: See data sheet 9113
Transmitter: See data sheet 9168

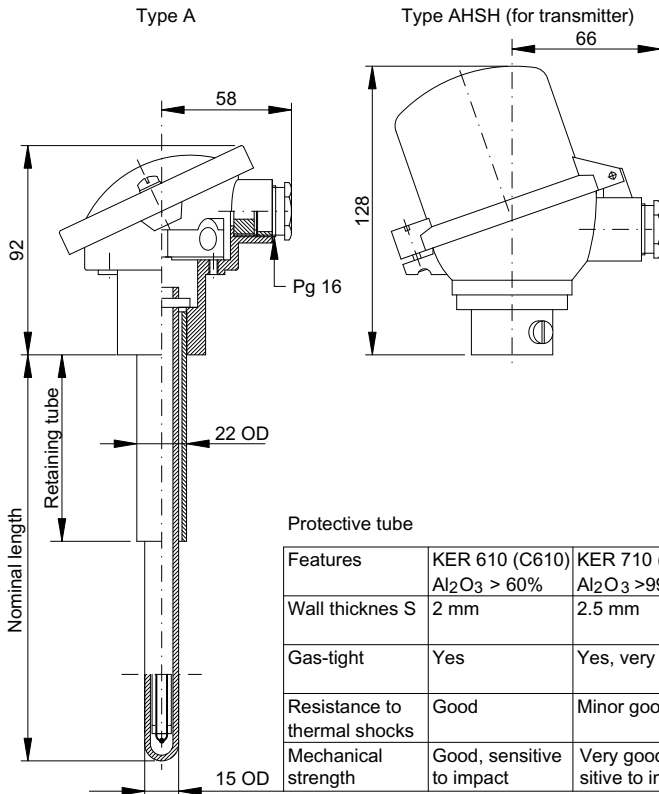
Customer information

Name:
Tel.:

Dimensions

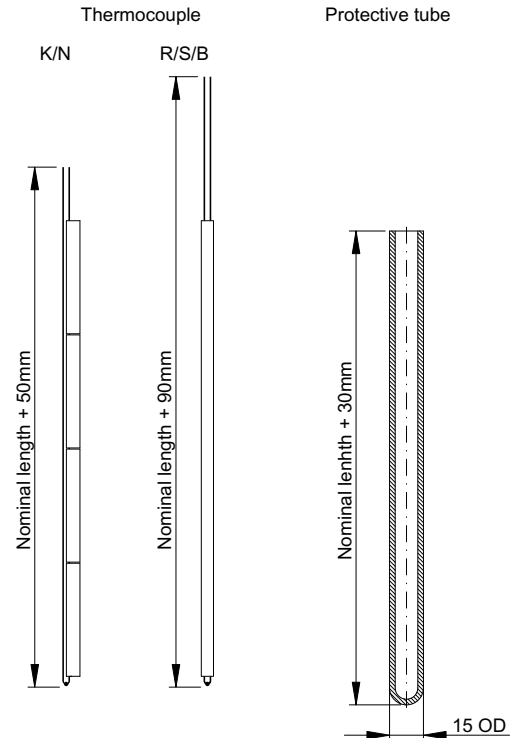
Thermocouple assembly AK
Connection head

Parts for AK thermocouple assembly

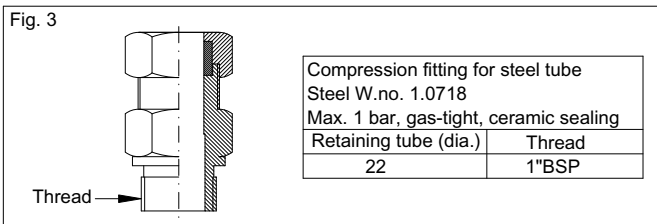
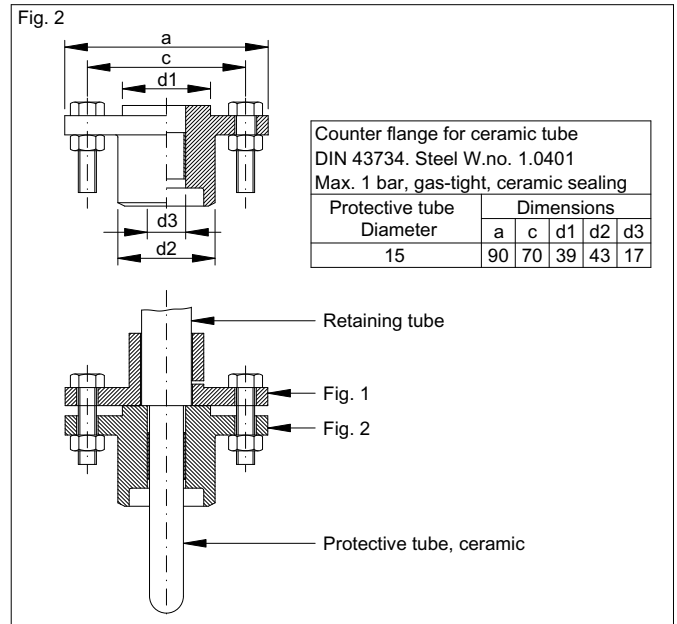
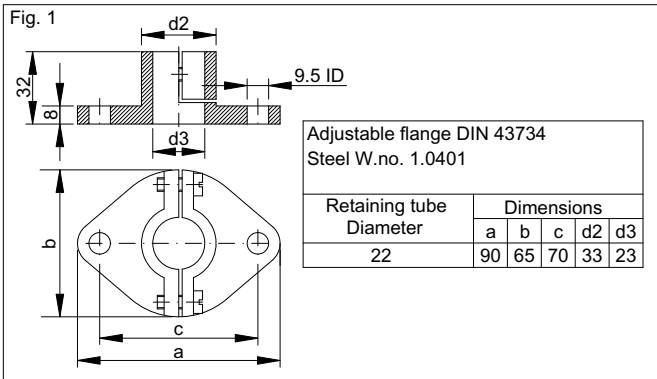


Protective tube

Features	KER 610 (C610) Al ₂ O ₃ > 60%	KER 710 (C799) Al ₂ O ₃ > 99,7%
Wall thickness S	2 mm	2.5 mm
Gas-tight	Yes	Yes, very much
Resistance to thermal shocks	Good	Minor good
Mechanical strength	Good, sensitive to impact	Very good, sensitive to impact



Process connection



Response time

Protective tube Diameter	Response times in seconds (guidelines)			
	In water @ 0.4m/sec.		In air @ 3m/sec.	
	t _{0.5}	t _{0.9}	t _{0.5}	t _{0.9}
15	-	-	250	700

Note:

The 0.5/0.9 time is the time that it takes the sensor to reach 50%/90% of the final value of a temperature change of a medium. If media and velocity are different from the ones stated, the time can change significantly.

Connection diagram

