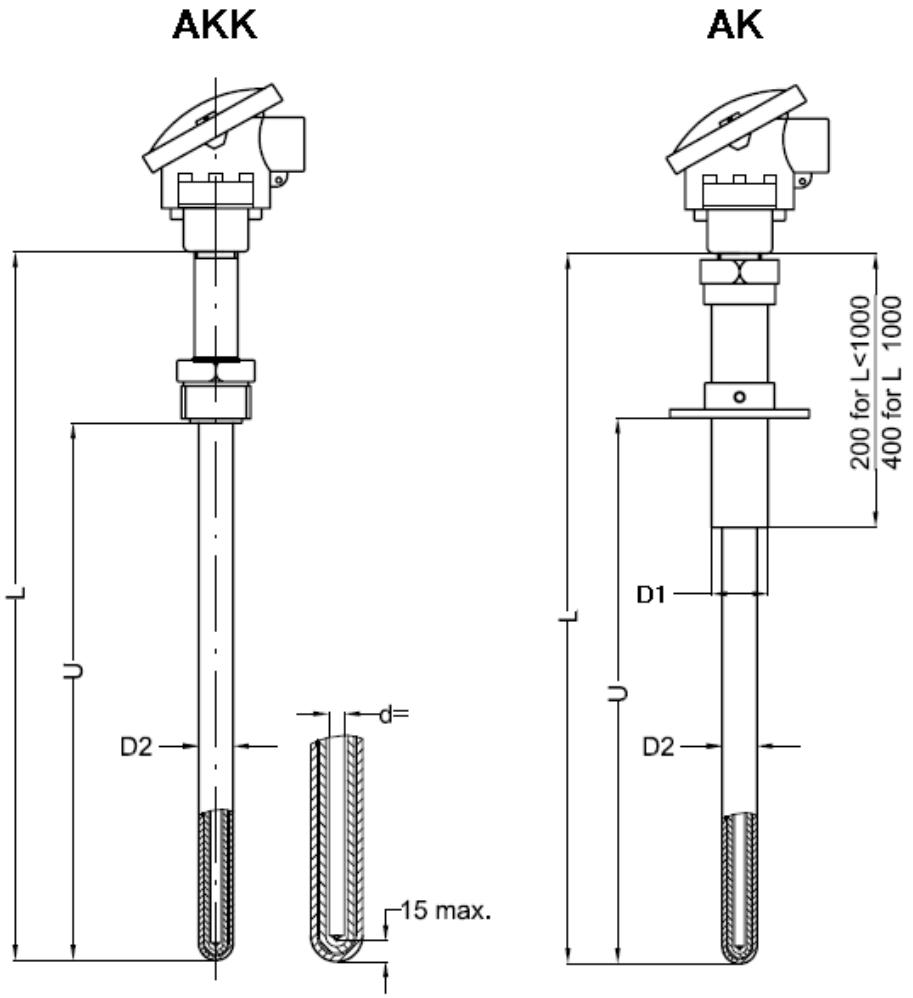
THERMOCOUPLE FOR HIGH TEMPERATURE with ceramic thermowell, TYPE TTS841



Thermocouple probes with precious metal sensors in ceramic insets, and with ceramic thermowells (AKK, AK) according to DIN 43733

APPLICATIONS

- Industrial ovens (heat treatment, incineration)
- Chimneys (combustion gases)
- Fusion baths for metal and glass

DESCRIPTION

These PCI's "Thermo-Sensor" probes are designed specially for measurement of temperatures up to + 1600°C but under low pressures only. They comprise a ceramic thermowell (in contact with the medium) which houses a ceramic inset containing either one or two thermocouple sensors in precious metal.

Each probe also comprises a metal process connection tube with adjustable flange, and a connection head.
The insets can be replaced without removing the thermowell (provided this is undamaged) and without any process interruption.

Two types of thermowell are available:

AKK = thermowell consisting of two ceramic tubes and a metal process connection tube
AK = thermowell consisting of one single ceramic tube and a metal process connection tube.

These probes are not designed for use in explosive environments

HOW TO ORDER

Please specify: model, type of sensor, type of thermowell and immersion, options if any

Example : TTS841-AKK-U=400mm – 4/20mA HART

TERMO SENSOR

1. Limiting temperatures for thermocouples according to wire diameters

The permissible temperatures given below are for exposure to gases. The operating temperature is generally the maximum temperature permitted for the thermowell.

Type of sensor Temperature (°C)	S	R	B
for 0.35 mm dia. wire	1300	1300	1500
for 0.5 mm dia. wire	1600	1600	1800

2. Maximum operating temperature for thermowells

Consult also EN 50112.

Material of thermowell	Gas Temp (°C)	Applications	Critical conditions
KER 710	1600	Fusion baths for glass	Temperature shocks

3. Connection head

Form A or equivalent, according to DIN 43729.
For ambient temperatures: 0 ... + 80°C.
Degree of protection: IP 53.
Thermowell and process connection tube fixed by two M6 screws.
Cable gland with PG 16 thread, optional PG 11 adapter, to be chosen according to the cable entry (see page 2).
PG 16 thread: for cable diameters 10 to 14 mm.
PG 11 thread: for cable diameters 5 to 10 mm.
Terminal block: ceramic, with 2 or 4 screw terminals.

4. Operating position

Because these probes are used for high temperatures which may also cover a wide range, it is advisable to mount them vertically, or at an angle not exceeding 30° from the vertical.
The connection head should be located as far as possible from the hot medium.

5. Process connection tube

The process connection tube can be fitted either with an adjust- able flange or a compression fitting, and gives extra protection for the ceramic thermowell.

The flange according to DIN 43734 cannot fulfil any sealing requirements. In the case that sealing is required, a compression fitting must be used, and the space between the process connection tube and the thermowell must be sealed with an appropriate material.

6. Replacement insets

see type TTS83 data sheet.

7. Relationship between nominal length "L" of temperature sensor, length "Li" of inset, and the corresponding insertion lengths "U"

Normal Length L	Length of Inset Li*	Insertion lengths U AKK, AK values between
500 mm	525 mm	300** - 450 mm
710 mm	735 mm	510** - 660 mm
1000 mm	1025 mm	600** - 950 mm
1400 mm	1425 mm	1000** - 1350 mm

* see type S 03 data sheet,
** Lessen lengths may be obtained by adapting the length of the process connection tube. In this case, indicate lengths "L" and "U" under "Other".

8. Transmitters

Because this type of probe is used for high temperatures, it is preferable to install transmitters outside the connection head.

For the AUZH head however, which has a raised cover, a transmitter may be placed inside provided that the temperature attained by the connection head does not exceed the 80°C mentioned in point 3 above.
Transmitters may be :

- analogue
- digital "HART"® or "PROFIBUS" ®

IMPORTANT

The ceramic thermowells are sensitive to knocks, so should be handled with the greatest of care