

TEMPERATURE PROBES – THERMOCOUPLES

Senseca offers a wide choice of K-type thermocouples, meeting the characteristics defined by the IEC 60584 standard.

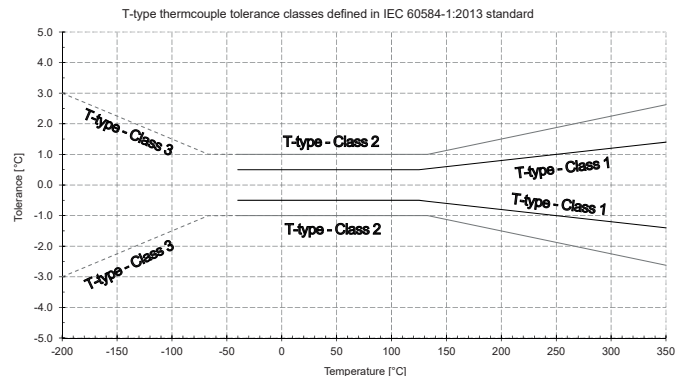
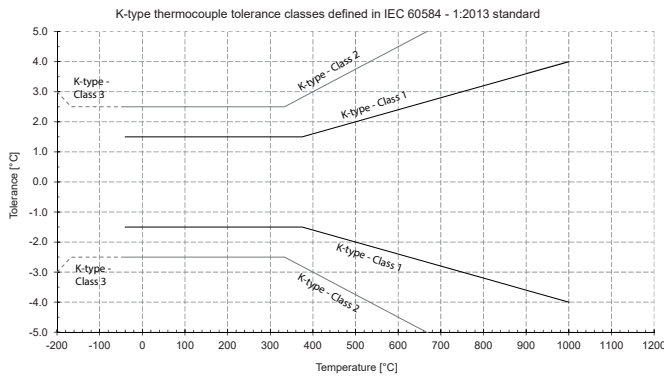
The response time $\tau_{0.63}$ indicated for each probe is the reaction time of the sensor to a temperature variation, with a variation of the measured signal corresponding to the 63% of the total variation. The response times are referred:

- in water at 100 °C for immersion probes;
- to the contact with a metal surface at 200 °C for surface probes;
- to an air temperature of 100 °C for air probes.

The IEC 60584-1:2013 standard defines the tolerance classes of the thermocouples as summarized in the following table:

Thermocouple Type	Class 1		Class 2		Class 3	
	Tolerance ¹	Temp. range	Tolerance ¹	Temp. range	Tolerance ¹	Temp. range
T	0.5 °C or 0.004· t	-40 °C...+350 °C	1 °C or 0.0075· t	-40 °C...+350 °C	1 °C or 0.015· t	-200 °C...+40 °C
E	1.5 °C or 0.004· t	-40 °C...+800 °C	2.5 °C or 0.0075· t	-40 °C...+900 °C	2.5 °C or 0.015· t	-200 °C...+40 °C
J		-40 °C...+750 °C		---		
K		-40 °C...+1000 °C		-40 °C...+1200 °C	2.5 °C or 0.015· t	-200 °C...+40 °C
N		-40 °C...+1000 °C		-40 °C...+1200 °C		
R	1 °C [1+0.003·(t-1100)]	0 °C...+1100 °C	1.5 °C or 0.0025· t	0 °C...+1600 °C	---	---
S		+1100 °C...+1600 °C		0 °C...+1700 °C	---	---
B	---	---	0.01· t	+600 °C...+1700 °C	4 °C or 0.005· t	600 °C...+1700 °C
C	---	---		+426 °C...+2315 °C	---	---
A	---	---		+1000 °C...+2500 °C	---	---

¹ Tolerance is expressed as a numerical value or as a function of temperature. The greater of the two values is valid



The elements that make up the thermocouple wires, with their respective polarity, are shown below.

Thermocouple type	Alloy standard elements and composition	
	Positive conductor	Negative conductor
R	Platinum - 13 % Rhodium	Platinum
S	Platinum - 10 % Rhodium	Platinum
B	Platinum - 30 % Rhodium	Platinum
J	Iron	Copper - Nickel
T	Copper	Copper - Nickel
E	Nickel - Chrome	Copper - Nickel
K	Nickel - Chrome	Nickel - Aluminium
N	Nickel - Chrome - Silicon	Nickel - Silicon
C	Tungsten - 5 % Rhenium	Tungsten - 26 % Rhenium
A	Tungsten - 5 % Rhenium	Tungsten - 20 % Rhenium

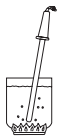
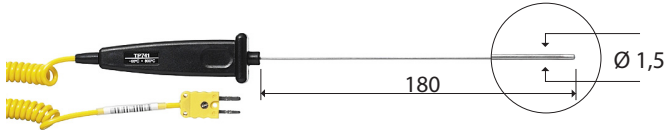
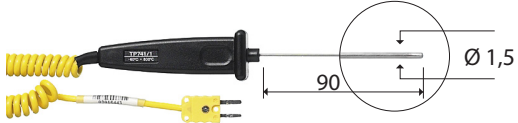
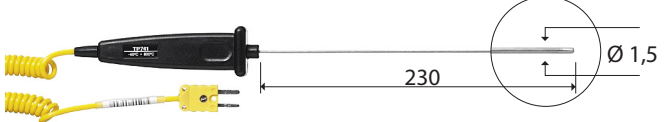

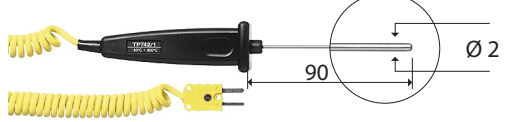
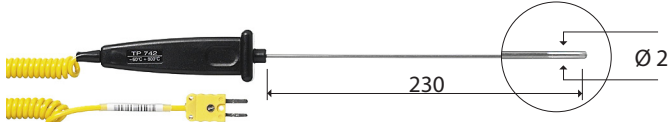


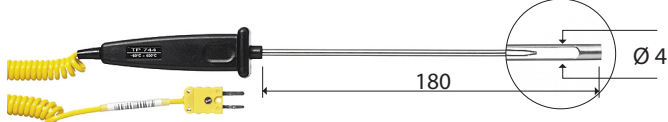


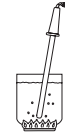
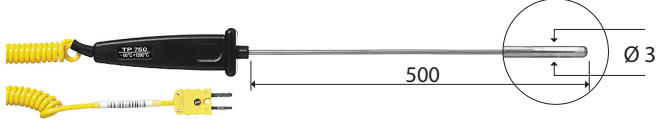
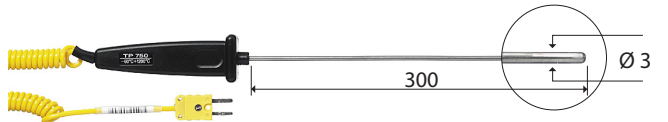
By means of the calibration, the purchased instrument can be metrologically characterized, determining the systematic error of the thermometer and ensuring at the same time the traceability to international standards. Senseca Laboratories are able to provide this service by issuing calibration reports according to ISO 9001 or ACCREDIA LAT certificates in compliance with ISO/IEC 17025 standard, recognized internationally through ILAC MRA agreements.




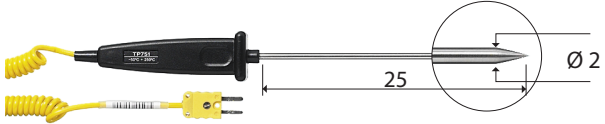

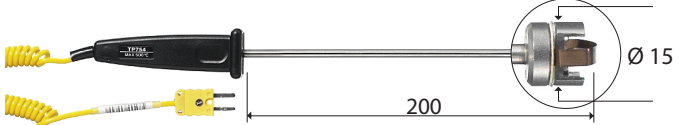
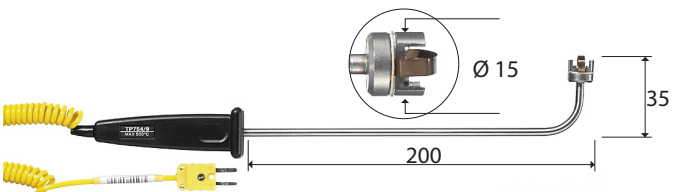
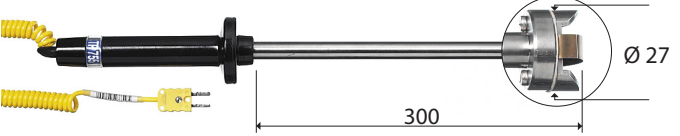
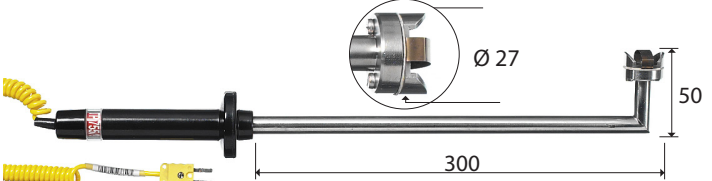


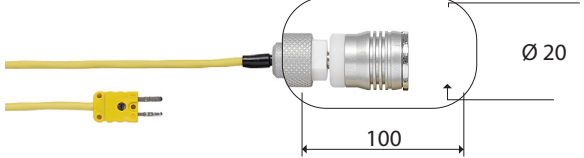

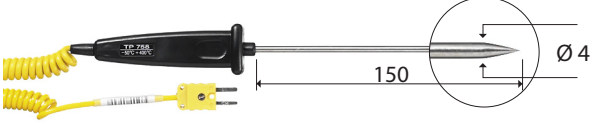
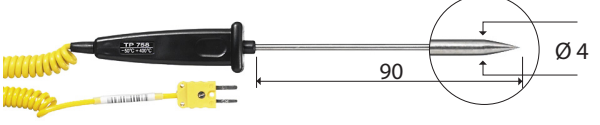
LAT N° 124

Temperature - Humidity - Pressure - Air speed
Photometry/Radiometry - Acoustics

"K" type THERMOCOUPLES - Chromel (Ni-Cr) / Alumel (Ni-Al) - Class 1

CODE	T _{max} (°C)	USE	τ _{0.63}	DIMENSIONS
TP741	+800		2s	
TP741/1	+400		2s	
TP741/2	+800		2s	
TP742	+800		2s	
TP742/1	+400		2s	
TP742/2	+800		2s	
TP743	+800		3s	
TP744	+400		4s	
TP745	+500		5s	
TP746	+250		2s	
TP750	+1000		3s	
TP750.0	+800		3s	


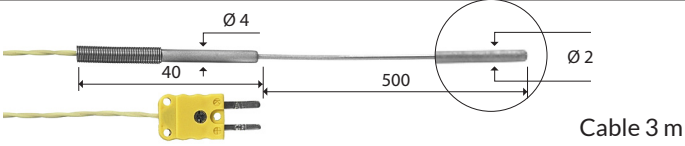

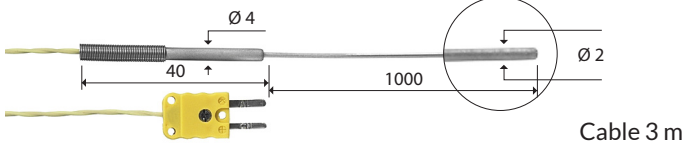

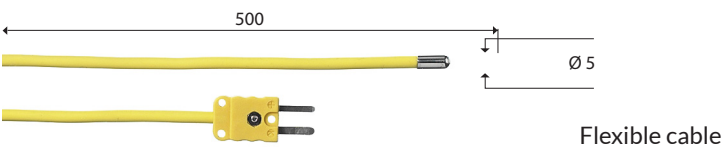
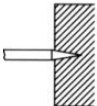
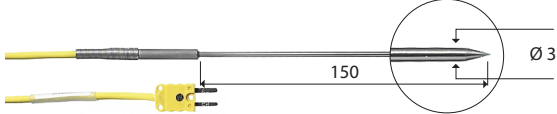
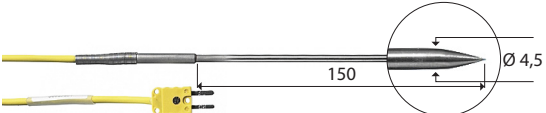
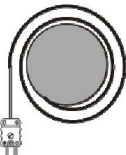
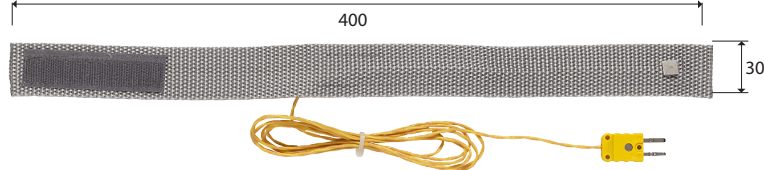
"K" type THERMOCOUPLES - Chromel (Ni-Cr) / Alumel (Ni-Al) - Class 1

CODE	T _{max} (°C)	USE	τ _{0,63}	DIMENSIONS
TP751	+200		2s	
TP754	+300		2s	
TP754/9	+300		2s	
TP755	+300		2s	
TP755/9	+300		2s	
TP756	+200			2s
TP757	+180		30s	Magnetic probe for contact measurements on magnetic metal surfaces 
TP758	+400		4s	
TP758.1	+400		4s	


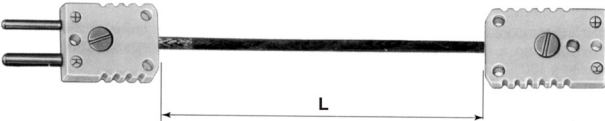
"K" type THERMOCOUPLES - Chromel (Ni-Cr) / Alumel (Ni-Al) - Class 1

CODE	T _{max} (°C)	USE	τ _{0.63}	DIMENSIONS
TP772	+400		3s	
TP776	+200		2s	
TP777	+200		3s	
TP647	+300		2s	Fiberglass cable
TP647/2				
TP647/3				
TP647/5				
TP647/10				
TP647/20				
TP651	+1200		6s	
TP652	+1200		6s	
TP655	+180		2s	
TP656	+200		1s	

"K" type THERMOCOUPLES - Chromel (Ni-Cr) / Alumel (Ni-Al) - Class 1

CODE	T _{max} (°C)	USE	τ _{0.63}	DIMENSIONS
TP656/1	+1000		1s	 Cable 3 m
TP656/2	+1000		1s	 Cable 3 m
TP657/1	+100		5s	 Flexible cable
TP659	+400		3s	
TP660	+400		4s	
TP662	+180		120s	 Strap probe with velcro for measurements on pipes with Ø max 110 mm

THERMOCOUPLE CONNECTORS AND CABLES

CM CS	"K"	 CS CM
PW PW5 PW10	"K"	 Cable Length: 2 m/5 m/10 m

GARANZIA

Il fabbricante è tenuto a rispondere alla “garanzia di fabbrica” solo nei casi previsti dal Decreto Legislativo 6 settembre 2005, n. 206. Ogni strumento viene venduto dopo rigorosi controlli; se viene riscontrato un qualsiasi difetto di fabbricazione è necessario contattare il distributore presso il quale lo strumento è stato acquistato. Durante il periodo di garanzia (24 mesi dalla data della fattura) tutti i difetti di fabbricazione riscontrati sono riparati gratuitamente. Sono esclusi l’uso improprio, l’usura, l’incuria, la mancata o inefficiente manutenzione, il furto e i danni durante il trasporto. La garanzia non si applica se sul prodotto vengono riscontrate modifiche, manomissioni o riparazioni non autorizzate. Soluzioni, sonde, elettrodi e microfoni non sono garantiti in quanto l’uso improprio, anche solo per pochi minuti, può causare danni irreparabili.

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INFORMAZIONI TECNICHE

Il livello qualitativo dei nostri strumenti è il risultato di una continua evoluzione del prodotto. Questo può comportare delle differenze fra quanto riportato nel manuale e lo strumento che avete acquistato. Ci riserviamo il diritto di modificare senza preavviso specifiche tecniche e dimensioni per adattare alle esigenze del prodotto.

INFORMAZIONI SULLO SMALTIMENTO



Le apparecchiature elettriche ed elettroniche con apposto specifico simbolo in conformità alla Direttiva 2012/19/UE devono essere smaltite separatamente dai rifiuti domestici. Gli utilizzatori europei hanno la possibilità di consegnarle al Distributore o al Produttore all’atto dell’acquisto di una nuova apparecchiatura elettrica ed elettronica, oppure presso un punto di raccolta RAEE designato dalle autorità locali. Lo smaltimento illecito è punito dalla legge.

Smaltire le apparecchiature elettriche ed elettroniche separandole dai normali rifiuti aiuta a preservare le risorse naturali e consente di riciclare i materiali nel rispetto dell’ambiente senza rischi per la salute delle persone.

