



Temperature Sensors

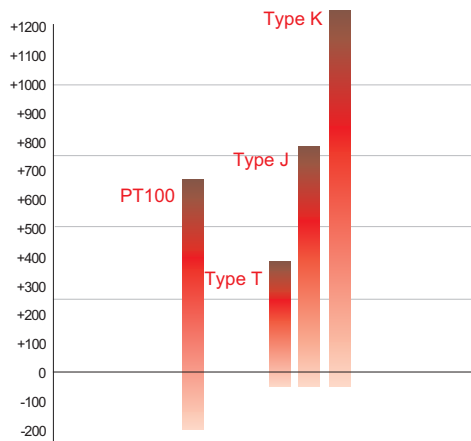
for general Industry

Unitemp manufactures a wide range of temperature sensors. Materials and construction are carefully designed to match the requirements of the various industries.

Recognising the cost of downtime, Unitemp provides a “SOS” service, manufacturing replacement sensors within a few hours after receipt of order.

Unitemp offers mineral insulated thermocouples as small as 0.5mm in diameter and Pt100 sensors down to 1.6mm diameter. Drawings and product codes of frequently used sensors have been compiled on the following pages.

Temperature Range of Sensors

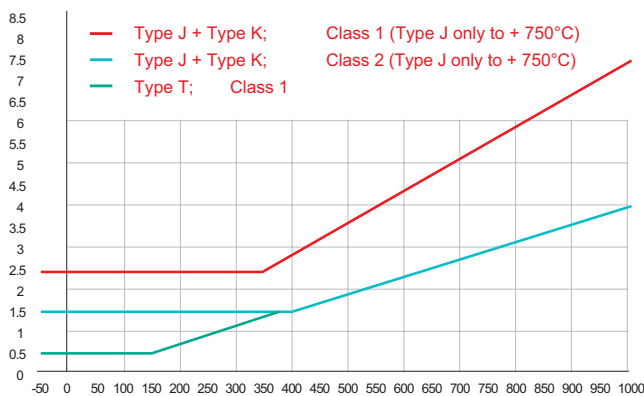


Operating Temperature limit of cables:

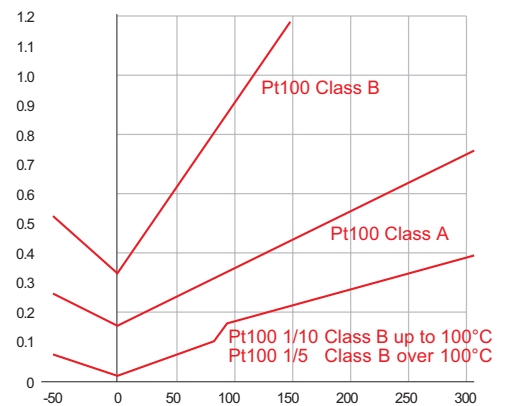
PVC insulated cable:	-40°C +100°C
Teflon insulated cable:	-250°C +250°C
glass fibre insulated cable:	-40°C +350°C
mineral insulation sheath:	up to 1100°C

(can be higher using special alloys)

Accuracy of thermocouples



Accuracy of Pt100 sensors





Order code

US **Construction** **Sensor specification** **Special requirements**

 L= mm D= mm T= mm
Stem length Stem diameter Cable length

Body		Termination		Mounting		Option			Option		Temperature		Configuration		
Wire, fused one end	O	Plain	P	Plain, no fitting	1	Plain	O	Nylon conn. block	N	G	Grounded T/C	0	-100°C to 50°C	S	Simplex T/C (3 wire RTD)
Air tube	A	Crimped cable	C	Spring & bayonet fitting	2	PVC cable (100°C)	P	Ceramic conn. block (large)	L	U	Ungrounded T/C	1	-20°C to 150°C	D	Duplex T/C (2x3 wire RTD)
Two-sectional stem	B	Cable Stress relief spring	R	1/4" BSPT	6	Teflon cable (250°C)	T	Ceramic conn. block (small)	C	E	Exposed T/C	2	0°C to 260°C	T	Triplex T/C (3x2 wire RTD)
Two-sectional ceramic	C	Nylon head (HN)	N	1/2" BSPT	8	Fibreglass cable (400°C)	G	Spring loaded conn. block	Y	B	Grade "B" RTD	4	0°C to 400°C	A	4 wire simplex RTD
Bare stem	T	Small Alu-head (KS)	S	1/4" BSW	A	S/st braided cable / Fibreglass (400°C)	S	4-20mA transducer	A	X	Grade "A" RTD	8	0°C to 800°C	B	2 x 2 wire RTD / Duplex
Stem with reduced tip	R	Large Alu-head (KN)	L	M6 x 1	B	Silicone rubber cable	Q	Miniature plug (UM 10)	1		Other (specify)			X	Other (specify)
Stem with reduced tip	R	Round Alu-head (DANA)	Q	M8 x 1.25	C	Teflon cable with sprague tubing	U	Standard plug (UM 30)	3	Thermocouples are normally non-insulated ("grounded") unless specified otherwise					
Two-sectional, L-shaped	D	Rubber sleeve & Cable	O	M10 x 1	D			Other (specify)	X						
L-shaped	L	Potseal	A	M12 x 1.75	E										
Plate (surface probe)	F	Other (specify)	X	Pipe clamp (specify diameter)	P										
Stud (rigid)	S			Other (specify)	X										
Ceramic insert	I														
Swivel-stud	W														
Angle head	E														
Pocket with insert	Z														
Other (specify)	X														

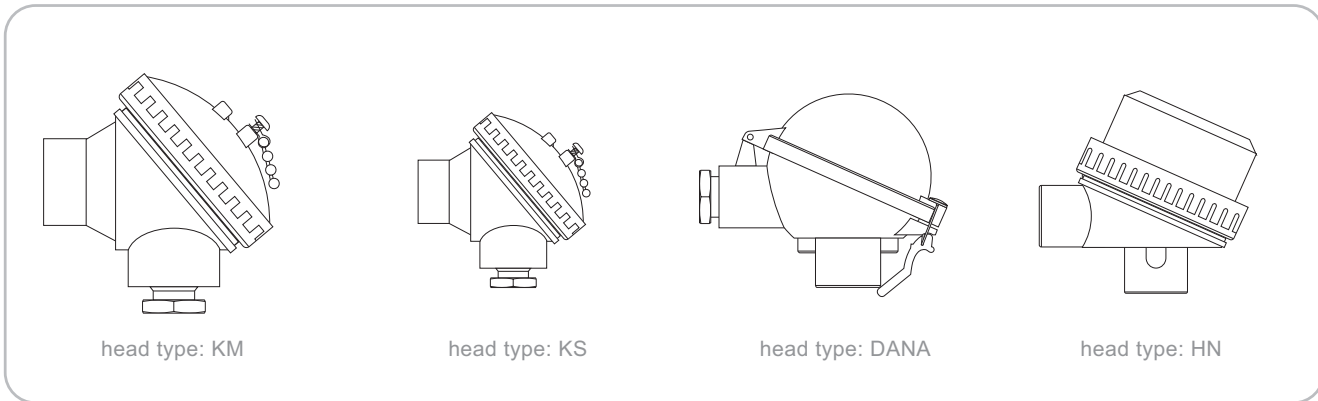
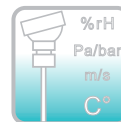
Sensor		
T	Cu-CuNi	-40°C to +300°C
K	NiCr-NiAl	-40°C to +1100°C
J	Fe-CuNi	-40°C to +700°C
R	Pt-13% Rh	0°C to +1550°C
S	Pt-10% Rh	0°C to +1550°C
P	Pt 100	-100°C to +400°C
A	Pt1000	-100°C to +400°C
X	Other	

For selection and ordering

Drawings and product codes of frequently used temperature sensors have been compiled on the following pages for ease of selection and ordering. In addition, unitemp offers mineral-insulated thermocouples in diameters down to 0,5 mm and Pt 100 sensors down to 1,6 mm.

Ordering: Please indicate the appropriate stock code when ordering. Sensors are supplied with a label attached, stating the part number, batch reference and sensor code.

unitemp manufactures all types of temperature sensors to customers specifications. Please contact us with your requirements if none of the standard sensors fit your application.

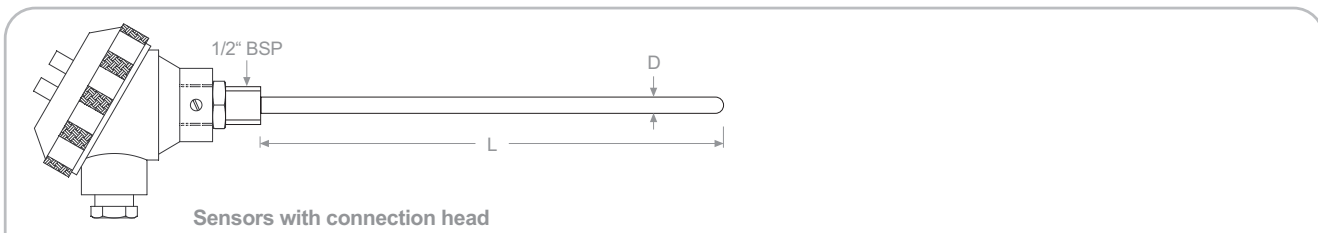


head type: KM

head type: KS

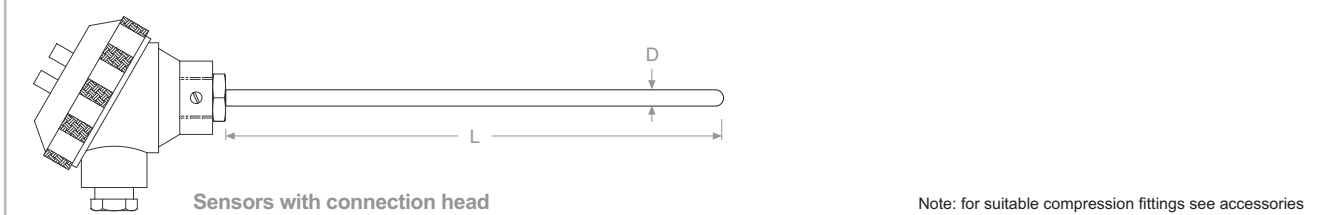
head type: DANA

head type: HN



Sensors with connection head

stock code	Sensor	D (mm)	L (mm)	Accuracy	Maximum	Head Type	Remarks
				Class	Temperature (°C)		
USTL8L-KY1426F	K	6	150	2	900	KM	Grounded
USTL8L-PY1419F	Pt100	6	150	A	400	KM	
USTL8L-KS8G	K	(specify)	(specify)	2	900	KM	Grounded
USTL8L-PS4A	Pt100	(specify)	(specify)	A	400	KM	
USTN8N-KY1428F	K	6	150	2	100	HN	Grounded
USTN8N-PY1421F	Pt100	6	150	A	100	HN	
USTN8N-KS8G	K	(specify)	(specify)	2	100	HN	Grounded
USTN8N-PS4A	Pt100	(specify)	(specify)	A	100	HN	
USTS8C-KY1427F	K	6	150	2	900	KS	Grounded
USTS8C-PY1420F	Pt100	6	150	A	400	KS	
USTS8C-KS8G	K	(specify)	(specify)	2	900	KS	Grounded
USTS8C-PS4A	Pt100	(specify)	(specify)	A	400	KS	

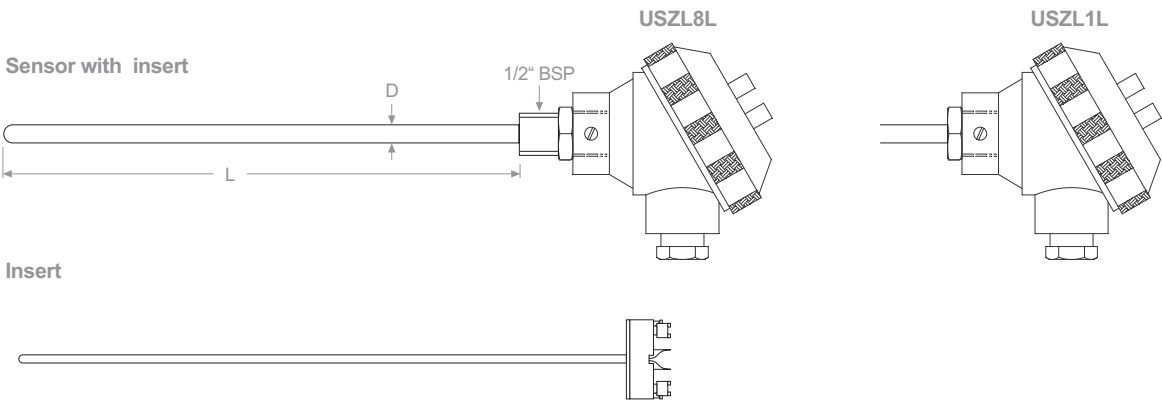
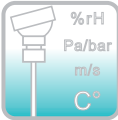


Sensors with connection head

Note: for suitable compression fittings see accessories

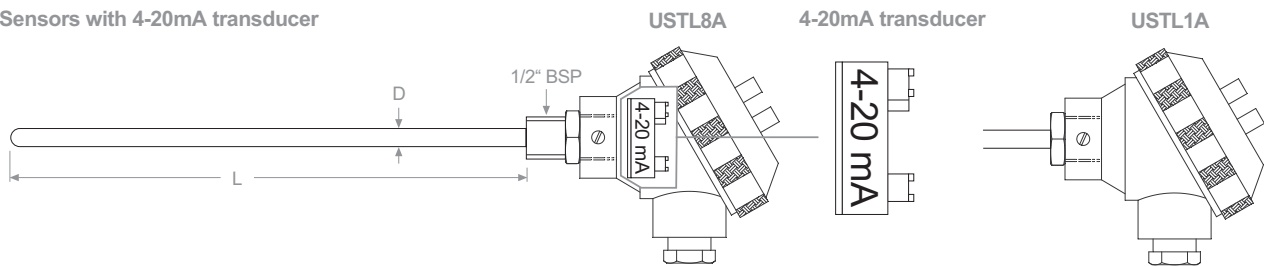
stock code	Sensor	D (mm)	L (mm)	Accuracy	Maximum	Head Type	Remarks
				Class	Temperature (°C)		
USTL1L-KY1426F	K	6	150	2	900	KM	Grounded
USTL1L-PY1419F	Pt100	6	150	A	400	KM	
USTL1L-KS8G	K	(specify)	(specify)	2	900	KM	Grounded
USTL1L-PS4A	Pt100	(specify)	(specify)	A	400	KM	
USTN1N-KY1428F	K	6	150	2	100	HN	Grounded
USTN1N-PY1421F	Pt100	6	150	A	100	HN	
USTN1N-KS8G	K	(specify)	(specify)	2	100	HN	Grounded
USTN1N-PS4A	Pt100	(specify)	(specify)	A	100	HN	
USTS1C-KY1427F	K	6	150	2	900	KS	Grounded
USTS1C-PY1420F	Pt100	6	150	A	400	KS	
USTS1C-KS8G	K	(specify)	(specify)	2	900	KS	Grounded
USTS1C-PS4A	Pt100	(specify)	(specify)	A	400	KS	

Note: All standard thermocouples are grounded. Please specify ungrounded if required.



stock code	Sensor	D (mm)	L (mm)	Accuracy Class	Temperature range (°C)	Head Type	Remarks
Pocket with insert							
USZL8L-KS8G	K	(specify)	(specify)	2	900	KM	welded fitting 1/2" BSP
USZL8L-PS4A	Pt100	(specify)	(specify)	A	400	KM	welded fitting 1/2" BSP
USZL1L-KS8G	K	(specify)	(specify)	2	900	KM	compression fitting*
USZL1L-PS4A	Pt100	(specify)	(specify)	A	400	KM	compression fitting*
Pocket with spring-loaded insert							
USZL8Y-KS8G	K	(specify)	(specify)	2	900	KM	welded fitting 1/2" BSP
USZL8Y-PS4A	Pt100	(specify)	(specify)	A	400	KM	welded fitting 1/2" BSP
USZL1Y-KS8G	K	(specify)	(specify)	2	900	KM	compression fitting*
USZL1Y-PS4A	Pt100	(specify)	(specify)	A	400	KM	compression fitting*
Insert only							
USTP1L-KS8G	K	(specify)	(specify)	2	900	KM	
USTP1L-PS4A	Pt100	(specify)	(specify)	A	400	KM	
Spring-loaded insert only							
USTP1Y-KS8G	K	(specify)	(specify)	2	900	KM	
USTP1Y-PS4A	Pt100	(specify)	(specify)	A	400	KM	

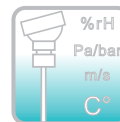
Sensors with 4-20mA transducer



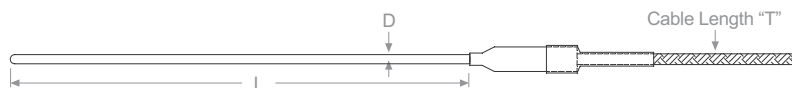
stock code	Sensor	D (mm)	L (mm)	Accuracy Class	Temperature range (°C)	Head Type	Remarks
USTL8A-KS8G	K	(specify)	(specify)	2	(specify)	KM	welded fitting 1/2" BSP
USTL8A-PS4A	Pt100	(specify)	(specify)	A	(specify)	KM	welded fitting 1/2" BSP
USTL1A-KS8G	K	(specify)	(specify)	2	(specify)	KM	compression fitting
USTL1A-PS4A	Pt100	(specify)	(specify)	A	(specify)	KM	compression fitting

* for suitable compression fittings see accessories

Note: All standard thermocouples are grounded. Please specify ungrounded if required.



Sensors with potseal USTA1



Note: A potseal facilitates the junction of the cable and is used for small stem diameters ($D < 4.7\text{mm}$) and for operating temperatures in excess of 400°C , necessitating mineral insulation of the stem.

stock code	Sensor	D (mm)	L (mm)	Accuracy	Maximum	Cable	Cable	Remarks
				Class	Temp ($^\circ\text{C}$)			
USTA1S-JY0152C2	J	1.5	100	2	900	1500	fibreglass, steel braided	grounded
USTA1S-KY2858A	K	1.5	100	2	900	1500	fibreglass, steel braided	grounded
USTA1S-KY2856A	K	3	150	2	900	1500	fibreglass, steel braided	grounded
USTA1T-PY2857A	Pt100	3	150	A	900	1500	Moisture-proof Teflon	
USTA1S-KS8G	K	(specify)	(specify)	2	900	(specify)	fibreglass, steel braided	grounded
USTA1T-PS4A	Pt100	(specify)	(specify)	A	400	(specify)	Moisture-proof Teflon	
USTA1S-PS4A	Pt100	(specify)	(specify)	A	400	(specify)	fibreglass, steel braided	

Sensor with cable (crimped) USTC1



Note: only for $D > 3\text{mm}$

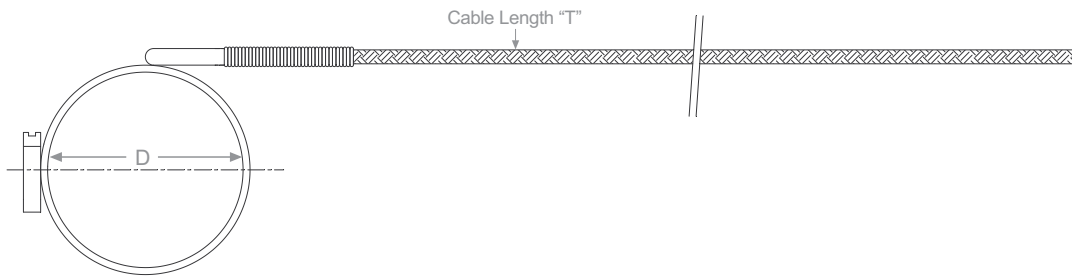
stock code	Sensor	D (mm)	L (mm)	Accuracy	Maximum	Cable	Cable	Remarks
				Class	Temp ($^\circ\text{C}$)			
USTC1S-KY0930C2	K	4.76	100	2	400	1500	fibreglass, steel braided	grounded
USTC1S-KY0819C2	K	6	100	2	400	1500	fibreglass, steel braided	grounded
USTC1P-PY0820C2	Pt100	6	100	A	100	1500	PVC	
USTC1S-PY0928C2	Pt100	4.76	100	A	400	1500	fibreglass, steel braided	
USTC1T-PY0817C2	Pt100	6	100	A	250	1500	Moisture-proof Teflon	
USTC1S-KS8G	K	(specify)	(specify)	2	400	(specify)	fibreglass, steel braided	grounded
USTC1T-PS4A	Pt100	(specify)	(specify)	A	250	(specify)	Moisture-proof Teflon	
USTC1S-PS4A	Pt100	(specify)	(specify)	A	400	(specify)	fibreglass, steel braided	

Sensors with plug



stock code	Sensor	D (mm)	L (mm)	Accuracy	Maximum	Remarks
				Class	Temperature ($^\circ\text{C}$)	
Standard plug						
USTPI3-KS8G	K	(specify)	(specify)	2	900	grounded
USTPI3-PS4A	Pt100	(specify)	(specify)	A	400	
Miniature (flat pin) plug						
USTPI1-KS8G	K	(specify)	(specify)	2	900	grounded
USTPI1-PS4A	Pt100	(specify)	(specify)	A	400	

Note: All standard thermocouples are grounded. Please specify ungrounded if required.



Surface probe with pipe clamp + cable

stock code	Sensor	D (mm)	Accuracy Class	Maximum Temp (°C)	Cable Length (mm)	Cable	Remarks
USFRPS-JY1114A8	J	12--20	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A7	J	16--25	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A1	J	25--40	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A5	J	32--50	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A2	J	40--60	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A3	J	50--70	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A9	J	60--80	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A4	J	70--90	2	400	1500	fibreglass, steel braided	grounded
USFRPS-JY1114A6	J	80--100	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A8	K	12--20	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A7	K	16--25	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A1	K	25--40	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A5	K	32--50	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A2	K	40--60	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A3	K	50--70	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A9	K	60--80	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A4	K	70--90	2	400	1500	fibreglass, steel braided	grounded
USFRPS-KY2901A6	K	80--100	2	400	1500	fibreglass, steel braided	grounded
USFRPS-PY2902A8	Pt100	12--20	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A7	Pt100	16--25	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A1	Pt100	25--40	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A5	Pt100	32--50	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A2	Pt100	40--60	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A3	Pt100	50--70	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A9	Pt100	60--80	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A4	Pt100	70--90	A	400	1500	fibreglass, steel braided	
USFRPS-PY2902A6	Pt100	80--100	A	400	1500	fibreglass, steel braided	

Note: All standard thermocouples are grounded. Please specify ungrounded if required.