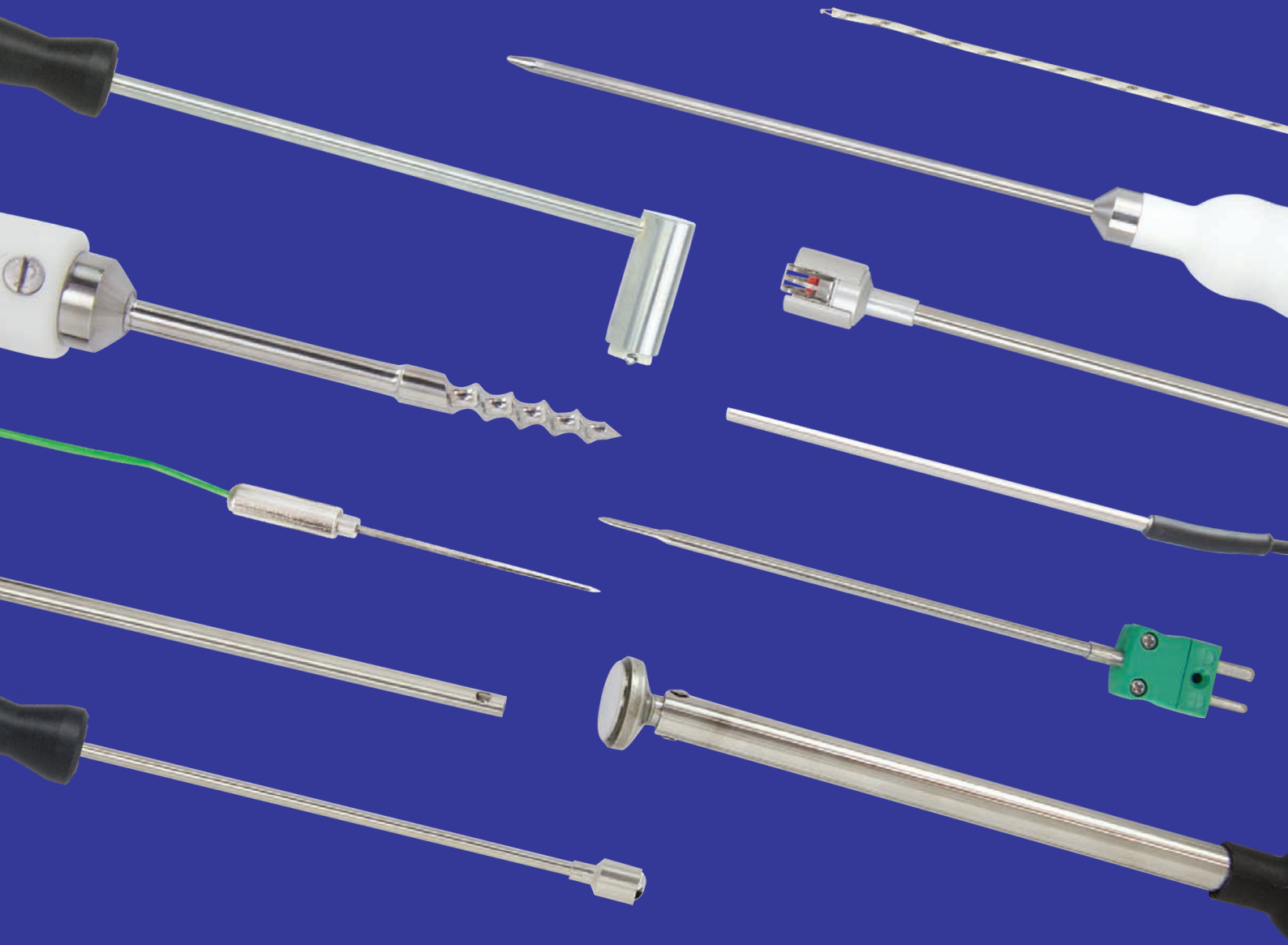
Thermometer Probes

for accurate temperature measurement

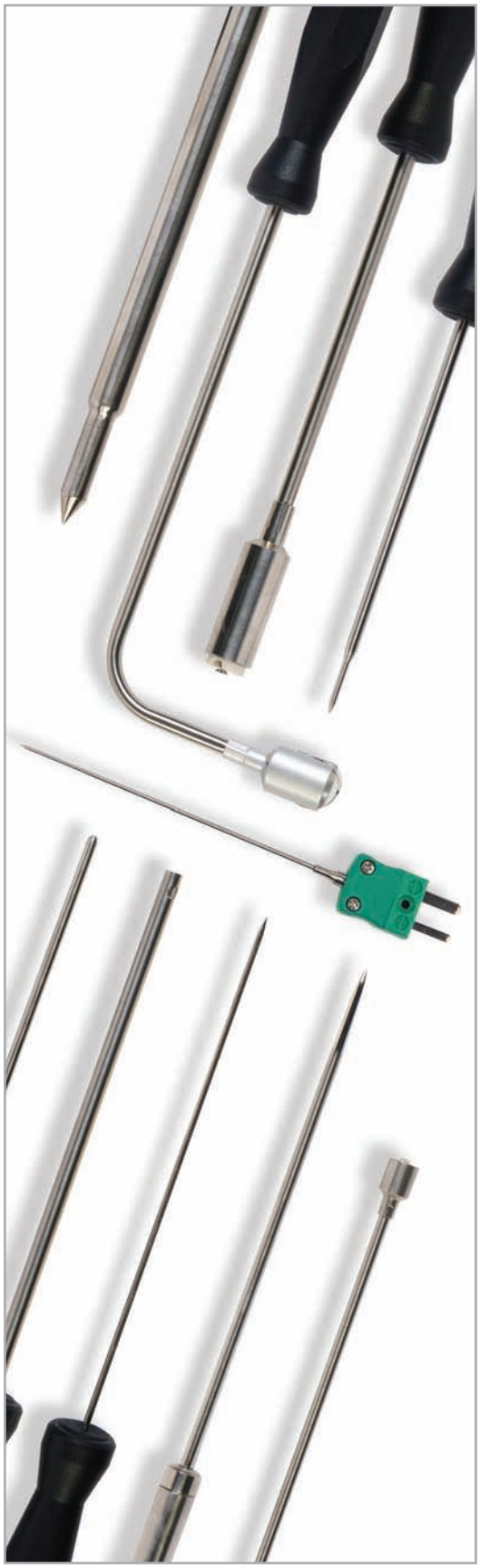


THE QUEEN'S AWARDS FOR ENTERPRISE: 2017

specialists in the design & manufacture of temperature measuring equipment for over 30 years

Temperature Probes & Sensors

designed & manufactured in the UK



Since our launch in 1983 Electronic Temperature Instruments Ltd (ETI) has developed a reputation as a British manufacturer and supplier of quality and value-for-money temperature instrumentation, probes and sensors. ETI has two factories in Worthing, West Sussex, one of which is dedicated to making temperature probes and sensors.

product guarantee

All ETI manufactured temperature probes and sensors carry a six-month guarantee against defects in either components or workmanship. During this period, probes and sensors that prove to be defective will, at the discretion of ETI, be either repaired or replaced without charge.

The product guarantee does not cover damage caused by fair wear and tear, abnormal storage conditions, incorrect use, accidental misuse, abuse, neglect, misapplication or modification. Further guarantee information can be obtained from our website.

Full details of liability are available on our website within ETI's terms and conditions of sale, at www.etiltd.com/terms. In line with our policy of continuous development, we reserve the right to amend our product specification without prior notice.

quality

ETI's Quality Management System is assessed to ISO 9001:2008 by the British Standards Institution. As part of our policy of continuous product development we reserve the right to change specifications at any time.

copyright

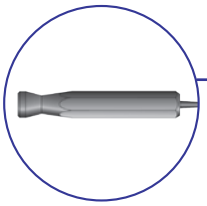
Temperature Probes

thermocouple, PT100/RTD & NTC thermistor

Thermometers are only part of the system; of equal importance is the design of the temperature probes used to physically measure the item. ETI manufacture an extensive range of probes/sensors to compliment our range of hand held thermometers, data-loggers and instrumentation.

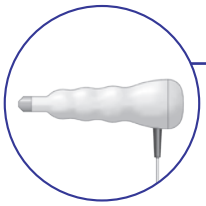
handle types

Where appropriate, each probe is supplied with a hexagonal, small round, ribbed heavy duty or T-shaped handle. To reduce bacterial growth, probe handles contain 'Biomaster' anti-bacterial additive.



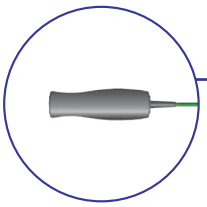
Hexagonal

manufactured from nylon and available in black. Maximum temperature is 105 °C.



Ribbed Heavy Duty

manufactured from polypropylene and available in black or white. Maximum temperature is 85 °C. (available with colour-coded caps)



Small Round

manufactured from nylon and available in black. Maximum temperature is 105 °C.

T-shaped

manufactured from polypropylene and available in black or white. Maximum temperature is 105 °C.

probe accuracy specifications

Type K Thermocouple Probes/Sensors

All type K thermocouple probes/sensors are manufactured from Class 1 type K thermocouple wire as detailed in the British Standard BS EN 60584-1:2013, and meet the following accuracy specification:

- ±1.5 °C between -40 & 375 °C
- ±0.4 % between 375 & 1000 °C

High Accuracy Type K Thermocouple Probes/Sensors (indicated in the catalogue with the HIGH ACCURACY icon)

ETI high accuracy type K probes are manufactured from Class 1 type K thermocouple wire which is chosen for improved accuracy and performance and meet the following accuracy specification:

- ±0.5 °C between 0 & 100 °C

Type T Thermocouple Probes/Sensors

All type T thermocouple probes/sensors are manufactured from Class 1 type T thermocouple wire as detailed in the British Standard BS EN 60584-1:2013, and meet the following accuracy specification:

- ±0.5 °C between -40 & 125 °C
- ±0.4 % between 125 & 400 °C

High Accuracy Type T Thermocouple Probes/Sensors (indicated in the catalogue with the HIGH ACCURACY icon)

ETI high accuracy type T probes are manufactured from Class 1 type T thermocouple wire which is chosen for improved accuracy and performance and meet the following accuracy specification:

- ±0.2 °C between -20 & 70 °C

NTC Thermistor Probes/Sensors

The tolerance specification for all ETI manufactured thermistor probes is as follows:

- ±0.4 °C between -20 & 100 °C
- ±0.3 °C between -10 & 0 °C
- ±0.2 °C between 0 & 70 °C
- ±0.4 °C between 70 & 100 °C

PT100/RTD Probes/Sensors

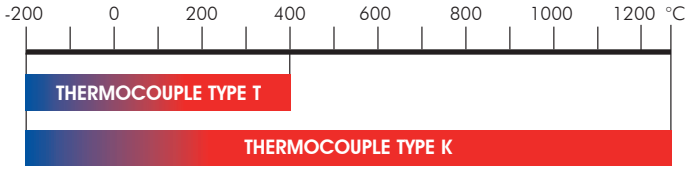
All PT100/RTD probes/sensors are manufactured from Class A PT100/RTD 100 Ω (ohmns) detectors as detailed in the IEC 60751 (2008) standard, and meet the following accuracy specification:

- ±0.15 °C ±0.2 % between -200 & 600 °C

Thermocouple Probes

for thermometers, data-loggers & instrumentation

Thermometers are only part of the system; of equal importance is the design of the temperature probes used to physically measure the item. ETI manufactures an extensive range of type K or T thermocouple probes to compliment our range of thermometers, data-loggers and instrumentation.



response times

The response time is the time taken for the sensor to reach 66.6 % of the final reading and is the industry standard means of measuring probe response times. Five times the quoted response time is the figure normally required to obtain 100 % of the reading. Response times are dependent upon the substance being measured and in the case of liquid or gas, upon the degree of agitation. It is therefore difficult to quote an accurate response time without knowledge of the application.

The results given in this catalogue were obtained in a stirred oil bath and may differ from those obtained under other conditions but can be used as a general guide.

PVC & PU coiled leads

PVC straight lead is a general purpose lead and available in lengths up to 100 metres. As standard and where appropriate, each probe is supplied with a one metre straight PVC lead and a connector. As an alternative, a one metre coiled PU lead is available, simply replace the first digit (1) of the order code with the number 3. Maximum temperature for both PVC and PU coiled leads is 80 °C.

Stainless Steel Braided leads

Some industrial and high temperature probes are available with a stainless steel, fibreglass insulated over-braided lead. As standard and where appropriate, each probe is supplied with a two metre stainless steel lead and a connector. Maximum temperature of 350 °C.

applications

Applications quoted are typical for the specific probe, although there are many alternative uses for which the probe could be equally suitable. For advice on a specific probe for a particular application, please contact the ETI technical sales team. Where requirements cannot be met from the existing standard range of probes, then bespoke designs can be manufactured.

Hand Held Temperature Probes

type K or T thermocouple

		T/C	order code
penetration probe  Ø3.3 x 130 mm	This stainless steel penetration probe is strong, versatile and ideal for measuring liquids and semi-solids. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	123-160
		T	127-160
penetration probe  Ø3.3 x 300 mm	This extended, stainless steel penetration probe is strong, versatile and ideal for measuring liquids and semi-solids. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	123-168
		T	127-168
fast response probe  Ø3.3 x 100 mm	This reduced tip (Ø1.8 x 25 mm) fast response, stainless steel penetration probe is ideal for liquids or semi-solids i.e. soft rubber and other similar materials. • response time less than 2 seconds • probe temperature range -75 to 250 °C	K	123-159
		T	127-159
needle penetration probe  Ø1.8 x 130 mm	This fast response, stainless steel needle penetration probe is ideal for liquids or semi-solids i.e. soft rubber or plastic. • response time less than 2 seconds • probe temperature range -75 to 250 °C	K	123-100
		T	127-100
oven probe  Ø3.3 x 130 mm	This oven probe has a stainless steel handle and a two metre PTFE high temperature lead. An oven probe without a handle is available. • response time less than 4 seconds • probe temperature range -75 to 250 °C	K	133-170 133-173 *(no handle)*
		T	137-170 137-173 *(no handle)*
rigid between pack probe  Ø4.5 x 130 mm	This rigid, stainless steel between pack probe is strong and versatile, designed specifically to measure between packets or boxes of produce. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	123-060
		T	127-060
high temperature probe  Ø1.5 x 130 mm	This flexible, mineral insulated (MI) probe can be bent to any shape without affecting its performance. Ideal for measuring high temperatures i.e. fryers or furnaces. • response time less than 2 seconds • probe temperature range -200 to 1100 °C	K	123-204
high temperature probe  Ø3 x 130 mm	This flexible, mineral insulated (MI) probe can be bent to any shape without affecting its performance. Ideal for measuring high temperatures i.e. fryers or furnaces. • response time less than 2 seconds • probe temperature range -200 to 1100 °C	K	123-212
high temperature probe  Ø3 x 300 mm	The above flexible, mineral insulated (MI) probe is also available with an extended 300 mm probe.	K	123-213

for a coiled lead, replace the first digit (1) of the order code with the number 3

Hand Held Temperature Probes

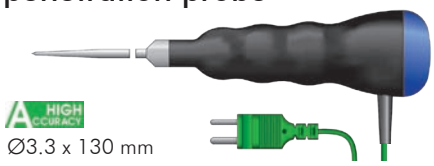
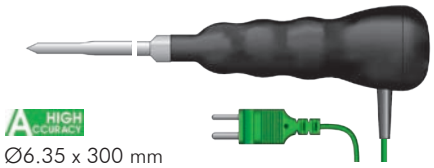
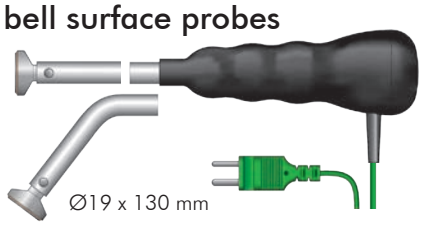
type K or T thermocouple

		T/C	order code
Binder probe  Ø3 x 130 mm	This rounded tip, stainless steel probe is designed for inserting into Binder self-sealing glands to measure the temperature of vessels or radiators. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	123-240
		T	127-240
air or gas probe  Ø4.5 x 130 mm	This stainless steel, fast response air or gas probe is ideal for measuring air temperature in chill cabinets, fridges, freezers, offices, storage areas and similar. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	123-300
		T	127-300
ribbon surface probe  Ø15 x 130 mm	This precision, ribbon surface probe utilises flat ribbon technology that ensures a fast, accurate response with minimal heat loss. A right-angled version is also available. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	123-030 123-032 *(right-angled)*
ribbon surface probe  Ø8 x 130 mm	This precision, ribbon surface probe utilises flat ribbon technology that ensures a fast, accurate response with minimal heat loss. A right-angled version is also available. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	123-044 123-052 *(right-angled)*
		T	127-044 127-052 *(right-angled)*
waterproof surface probe  Ø8 x 130 mm	This waterproof, ribbon surface probe incorporates a moulded mini plug and utilises flat ribbon technology to ensure a fast, accurate response with minimal heat loss. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	123-046
surface probe  Ø6 x 130 mm	This surface probe incorporates a spring-loaded copper disc sensing tip. The probe is ideal for a variety of surface temperature measurements. • response time less than 2 seconds • probe temperature range -100 to 600 °C	K	123-000
heavy duty surface probe  Ø12 x 130 mm	This high temperature surface probe is ideal for measuring the temperature of griddles, hotplates etc. A right-angled version is also available. • response time less than 1 second • probe temperature range -100 to 1000 °C	K	123-020 123-028 *(right-angled)*
penetration probe  Ø3.3 x 100 mm	This small handled, stainless steel penetration probe is strong, versatile and ideal for measuring liquids and semi-solids. A fast response version with a reduced tip is also available. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	123-162 123-158 *(reduced tip)*
		T	127-162 127-158 *(reduced tip)*

for a coiled lead, replace the first digit (1) of the order code with the number 3

Waterproof Temperature Probes

heavy duty type K thermocouple

		T/C	order code
penetration probe  Ø3.3 x 130 mm	This stainless steel, waterproof penetration probe is strong, versatile and incorporates a heavy duty handle with a colour-coded end cap. Suitable for liquids and semi-solids. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	143-161 143-162 143-164 143-165 143-166 143-167
reduced tip probe  Ø6.35 x 300 mm	This extended, waterproof, stainless steel probe incorporates a reduced tip (Ø4.5 x 25 mm) and heavy duty ribbed handle, ideal for heavy duty applications including food processing, asphalt and other similar materials. • response time less than 10 seconds • probe temperature range -75 to 250 °C	K	143-120
bell surface probes  Ø19 x 130 mm	These fast response, waterproof surface probes utilise a bell-shaped housing with a thin, flat, stainless steel measuring disc that ensures a fast, accurate response. Ideal for measuring a variety of surface temperatures. • response time less than 5 seconds • probe temperature range -75 to 200 °C	K	143-080 *(straight)* 143-084 *(45° angle)* 143-086 *(90° angle)*

for a coiled lead, replace the first digit (1) of the order code with the number 3

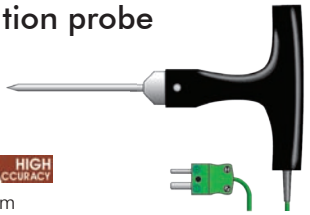
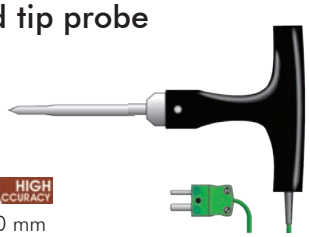
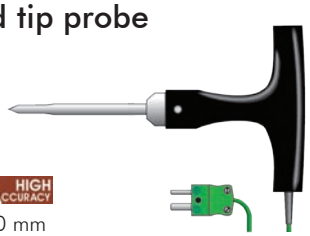
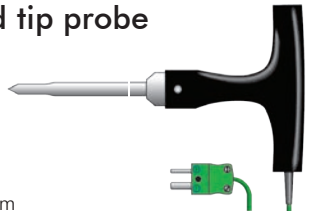
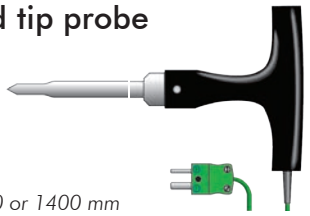
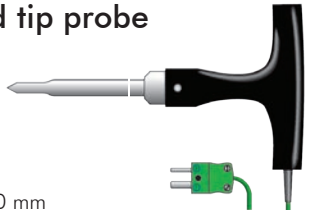
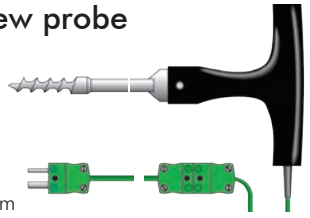
Interchangeable Probe Handle

& plug-mounted type K thermocouple probes

		T/C	order code
interchangeable probe handle  Ø25 x 151 mm	This probe handle incorporates a miniature thermocouple socket, to be used in conjunction with our range of plug-mounted probes. Supplied with a one metre coiled PU lead and miniature plug.	K	323-950
		T	327-950
penetration probe  Ø3.3 x 120 mm	This stainless steel, penetration probe is strong, versatile and ideal for liquids or semi-solids. A fast response version with reduced tip is also available. • response time less than three seconds • probe temperature range -75 to 250 °C	K	133-161 133-153 *(reduced tip)*
		T	137-161 137-153 *(reduced tip)*
air or gas probe  Ø3.3 x 120 mm	This probe has a perforated stainless steel tip for fast response. Ideal for chill cabinets, fridges, freezers and HVAC units. • response time less than one second • probe temperature range -75 to 250 °C	K	133-301
		T	137-301
surface probe  Ø8 x 120 mm	This stainless steel surface probe uses flat ribbon technology ensuring a fast, accurate response with minimal heat loss. A right-angled version is also available. • response time less than one second • probe temperature range -75 to 250 °C	K	133-045 133-046 *(right-angled)*

Heavy Duty Temperature Probes

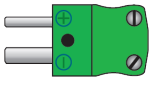
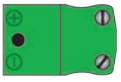
type K or T thermocouple

		T/C	order code
penetration probe  Ø4 x 100 mm	This robust, stainless steel penetration probe incorporates a T-shaped polypropylene handle and is ideal for a variety of heavy duty applications including food processing and other similar industries. • response time less than 4 seconds • probe temperature range -75 to 250 °C	K	133-124
		T	137-124
reduced tip probe  Ø6.35 x 100 mm	This robust, stainless steel, reinforced probe incorporates a T-shaped polypropylene handle and a reduced sensing tip (Ø4.5 x 25mm) for faster response. Ideal for a variety of heavy duty applications including food processing etc. • response time less than 9 seconds • probe temperature range -75 to 250 °C	K	133-126
		T	137-126
reduced tip probe  Ø6.35 x 300 mm	This extended robust, stainless steel, reinforced probe incorporates a T-shaped polypropylene handle and a reduced sensing tip (Ø4.5 x 25mm) for faster response. Ideal for a variety of heavy duty applications including food processing etc. • response time less than 9 seconds • probe temperature range -75 to 250 °C	K	133-120
		T	137-120
reduced tip probe  Ø8 x 500 mm	This extended, stainless steel, reinforced probe incorporates a T-shaped polypropylene handle and a reduced sensing tip (Ø6.35 x 25mm) for faster response. Ideal for a variety of heavy duty applications including food processing etc. • response time less than 10 seconds • probe temperature range -75 to 250 °C	K	133-130
reduced tip probe  *Ø9.5 x 1000 or 1400 mm*	This Ø9.5 mm stainless steel, reinforced probe incorporates a T-shaped polypropylene handle and a reduced sensing tip (Ø6.35 x 25mm) for faster response. Ideal for applications where a longer probe is required, i.e. grain silos. • response time less than 17 seconds • probe temperature range -75 to 250 °C	K	133-136 *(1000 mm)* 133-135 *(1400 mm)*
reduced tip probe  Ø9.5 x 2000 mm	This extended stainless steel, reinforced probe incorporates a T-shaped polypropylene handle and a reduced sensing tip (Ø6.35 x 25mm) for faster response. Ideal for applications where a very long probe is required, i.e. grain silos. • response time less than 17 seconds • probe temperature range -75 to 250 °C	K	133-133
corkscrew probe  Ø8 x 100 mm	This stainless steel probe incorporates a heavy duty T-shaped polypropylene handle and a corkscrew design sensing tip. Ideal for industrial and food processing applications. Supplied with a one metre PVC detachable lead. • response time less than 9 seconds • probe temperature range -75 to 250 °C	K	133-175
		T	137-175

for a coiled lead, replace the first digit (1) of the order code with the number 3

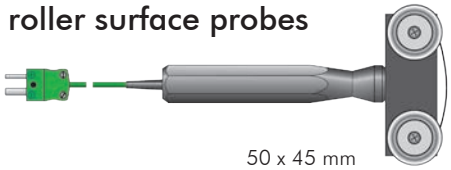
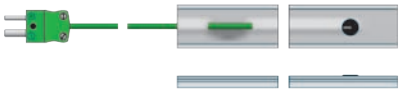
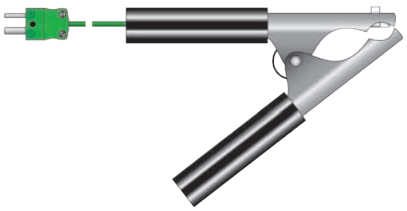
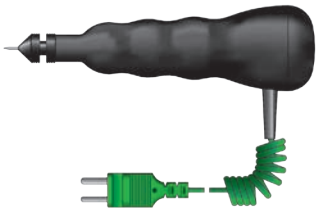
Fast Response Temperature Probes

exposed junction wire type K or T thermocouple

		T/C	order code
PTFE wire probe  Ø1.5 x 1000 or 2000 mm	This PTFE insulated, exposed junction wire probe is suitable for measuring the air temperature in fridges, freezers, ovens etc. Extended probe lengths over two metres are available upon request. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	133-362 *(1000 mm)* 133-363 *(2000 mm)*
		T	137-362 *(1000 mm)* 137-363 *(2000 mm)*
heavy duty PTFE wire probe  Ø2.4 x 1000 or 2000 mm	This heavy duty, PTFE insulated wire probe is ideal for measuring the air temperature in fridges, freezers, ovens etc. Extended probe lengths over two metres are available upon request. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	133-372 *(1000 mm)* 133-373 *(2000 mm)*
		T	137-372 *(1000 mm)* 137-373 *(2000 mm)*
fibreglass wire probe  Ø1.5 x 1000 or 2000 mm	This fibreglass, exposed junction wire probe is ideal for measuring the air temperature of ovens, hot cupboards and similar appliances. Extended probe lengths over two metres are available upon request. • response time less than 0.5 of a second • probe temperature range -60 to 350 °C	K	133-382 *(1000 mm)* 133-383 *(2000 mm)*
		T	137-382 *(1000 mm)* 137-383 *(2000 mm)*
high temperature wire probe  Ø3 x 1000 or 2000 mm	This high temperature, fibreglass wire probe is insulated with a stainless steel braid and is ideal for ovens, hot cupboards and similar appliances. Supplied with a one or two metre stainless steel braided lead. • response time less than 0.5 of a second • probe temperature range -60 to 600 °C	K	133-387 *(1000 mm)* 133-389 *(2000 mm)*
		T	137-387 *(1000 mm)* 137-389 *(2000 mm)*
attachment pads  12 x 18 mm	These easy to use attachment pads are recommended for attaching small diameter wire thermocouples to surfaces. Supplied in packs of 25. • for use over the range of -50 to 200 °C		600-485
probe extension lead - straight  1000 or 2000 mm	This probe extension lead enables the user to connect to any ETI thermocouple type K probe, extending reach up to an additional 1000 or 2000 mm. Supplied with a PVC straight lead with MPK to MSK.	K	627-732 *(1000 mm)* 627-733 *(2000 mm)*
probe extension lead - coiled  1000 or 2000 mm	This probe extension lead enables the user to connect to any ETI thermocouple type K probe, extending reach up to an additional 1000 or 2000 mm. Supplied with a PU coiled lead with MPK to MSK.	K	627-740 *(1000 mm)* 627-741 *(2000 mm)*
miniature plug or socket  MPK  MSK 16 x 19 mm 16 x 25 mm	Miniature thermocouple plugs and sockets are a must for accurate readings when joining probe cables. The flat pins (plug) and socket are manufactured from compatible thermocouple material and can accommodate wires up to Ø0.5 mm.	K	625-217 *(plug)* 421-501 *(socket)*

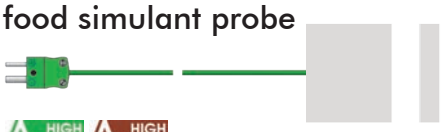
Special Temperature Probes

type K or T thermocouple

		T/C	order code
miniature needle probe  Ø1.4 reducing to Ø1 mm tip x 50 mm	This miniature, stainless steel needle probe is supplied with a one or two metre PTFE lead. Ideal for measuring small semi-solid items and sous vide cooking. • response time less than 1 second • probe temperature range -75 to 250 °C	K	133-180 *(1m lead)* 133-182 *(2m lead)*
		T	137-180 *(1m lead)* 137-182 *(2m lead)*
fast response meat probe  Ø1 mm tip x 90 mm	This fast response, meat penetration probe is specially designed for measuring burger patties etc. Supplied with a one metre coiled lead. • response time less than 1 second • probe temperature range -75 to 250 °C	K	133-150
		T	137-150
magnet surface probe  Ø24 x 28 mm	This magnet probe is supplied with a 500 mm PTFE lead. Ideal for monitoring the surface temperature of ferrous metals, e.g. radiators or hotplates. • response time less than 20 seconds • probe temperature range -20 to 80 °C	K	133-017
		T	137-017
roller surface probes  50 x 45 mm	These roller surface probes have either s/steel or PTFE wheels and are designed for measuring moving surfaces. Max. speed 100 m/min. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	123-038 *(s/steel)* 123-036 *(PTFE)*
velcro pipe probe  20 x 500 mm	This 500 mm wrap-around velcro pipe probe is suitable for medium and large pipe temperature measurement in the HVAC industry. Supplied with a two metre lead. • response time less than 20 seconds • probe temperature range -10 to 100 °C	K	133-080
pipe clamp probe 	This robust, pipe clamp probe is suitable for measuring the surface temperature of pipes in refrigeration, heating and ventilating systems etc. Simple clamp-on design for simplicity of use, suitable for pipes from Ø6 to Ø30 mm. • response time less than 2 seconds • probe temperature range -10 to 100 °C	K	133-040
adjustable tyre probe  Ø1 x 10 mm	This fast response probe has an adjustable depth stop (1 to 10 mm) which the user can manually set. This probe has been specifically designed for measuring tyre temperatures, supplied with a one metre coiled lead and moulded thermocouple connector. • response time less than 0.5 of a second • probe temperature range -75 to 250 °C	K	343-100

Special Temperature Probes

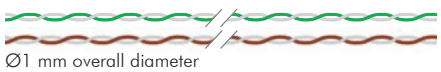
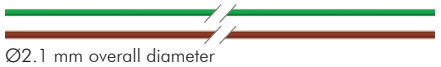
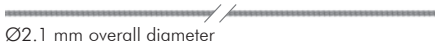
type K or T thermocouple

		T/C	order code
oven/air probe  HIGH ACCURACY Ø3.5 x 50 mm	This oven/air probe is ideal for monitoring air temperatures. Using the grate clip provided, attach the probe to an oven rack/shelf. Supplied with a two metre stainless steel braided lead. • response time less than 10 seconds • probe temperature range -50 to 350 °C	K	133-441
			830-530 *(spare clip)*
crocodile clip oven probe  HIGH ACCURACY Ø4 x 20 mm with 2000 mm lead	Oven probe incorporating a crocodile clip that can easily be attached to an oven rack or similar. Supplied with a two metre stainless steel braided lead. • response time less than 2 seconds • probe temperature range -50 to 350 °C	K	133-041
penetration probes  HIGH ACCURACY Ø4 x 225 mm	These stainless steel penetration probes are ideal for continuous monitoring in ovens. Supplied with a two metre stainless steel braided lead or stainless steel armoured lead. • response time less than 10 seconds • probe temperature range -50 to 350 °C	K	133-177 *(braided)* 133-178 *(armoured)*
general purpose probe  HIGH ACCURACY HIGH ACCURACY Ø3.3 x 100 mm	This stainless steel probe is suitable for a wide range of applications. Supplied with a one metre PTFE insulated lead and connector. • response time less than 3 seconds • probe temperature range -75 to 250 °C	K	133-158
		T	137-158
food simulant probe  HIGH ACCURACY HIGH ACCURACY 9 x 100 x 100 mm	This polypropylene, simulant probe is designed for use in refrigeration, food storage and chill cabinets. Supplied with a one metre PTFE insulated lead and connector. • probe temperature range 0 to 100 °C	K	133-350
		T	137-350

longer leads are available for the probes above, please contact our technical sales office for more information.

thermocouple cable

When connecting thermocouples to measuring instruments, it is important that extension or compensation cable is used. It is essential that the same polarity is maintained (copper cable should never be used). All cable is manufactured to BS4937 and is IEC colour-coded. A variety of insulation materials are available in 100 metre reels.

		T/C	order code
 Ø1 mm overall diameter	**PTFE insulated - twin-twisted 1/0.2 mm** one strand of Ø0.2 mm wire	K	627-908
		T	627-912
 Ø2.1 mm overall diameter	**PTFE insulated - flat pair 7/0.2 mm** seven strands of Ø0.2 mm wire	K	628-048
		T	628-052
 Ø4.7 mm overall diameter	**PVC insulated - flat pair 7/0.2 mm** seven strands of Ø0.2 mm wire	K	627-833
		T	627-837
		VX	627-839
 Ø2.4 mm overall diameter	**glassfibre insulated - s/s overbraid 7/0.2 mm** seven strands of Ø0.2 mm wire	K	628-308
		T	628-312
 Ø2.1 mm overall diameter	**glassfibre insulated - flat pair 7/0.2 mm** seven strands of Ø0.2 mm wire	K	628-310

Industrial Probes

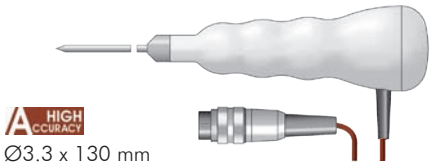
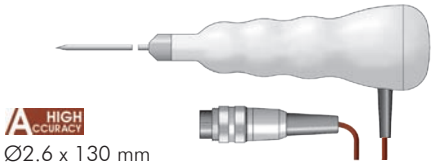
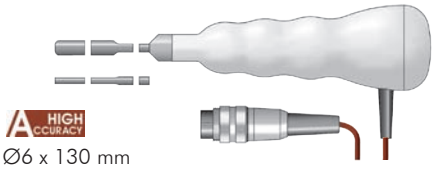
type K or T thermocouple

		T/C	order code
Ø4.8mm standard probes  Ø4.8 x 100 or 150 mm	These Ø4.8 mm general purpose, stainless steel probes are ideal for a variety of applications and available in two lengths. Supplied with a two metre PVC lead. • response time less than 9 seconds • probe temperature range -50 to 100 °C	K	133-453 *(100 mm)* 133-454 *(150 mm)*
		T	137-453 *(100 mm)* 137-454 *(150 mm)*
Ø6mm standard probes  Ø6 x 100 or 150 mm	These Ø6 mm general purpose, stainless steel probes are ideal for a variety of applications and available in two lengths. Supplied with a two metre PVC lead. • response time less than 10 seconds • probe temperature range -50 to 100 °C	K	133-448 *(100 mm)* 133-449 *(150 mm)*
		T	137-448 *(100 mm)* 137-449 *(150 mm)*
Ø6.35mm standard air probe  Ø6.35 x 150 mm	This Ø6.35 mm stainless steel air or gas probe is ideal for measuring air temperatures in chill cabinets, fridges, freezer, storage areas or similar. Supplied with a two metre PVC lead. • response time less than 5 seconds • probe temperature range -50 to 100 °C	K	133-499
		T	137-499
mineral insulated probes  Ø1.5 or 3 x 180 mm	These high temperature MI probes can be bent to any shape without affecting performance. Supplied with a plain pot seal and a two metre PTFE lead. • response time less than 2 seconds • probe temperature range -200 to 1100 °C	K	133-420 *(Ø1.5 mm)* 133-425 *(Ø3 mm)*
mineral insulated probes  Ø1.5 or 3 x 500 or 1000mm	These extended, high temperature MI probes can be bent to any shape without affecting performance. Supplied with a plain pot seal and a two metre PTFE lead. • response time less than 2 seconds • probe temperature range -200 to 1100 °C	K	133-421 *(Ø1.5 x 500mm)* 133-428 *(Ø3 x 500mm)* 133-422 *(Ø1.5 x 1m)* 133-429 *(Ø3 x 1m)*
pipe probes  Ø50, Ø75 or Ø100 mm	These pipe probes are ideal for measuring the surface temperature of pipes in refrigeration, heating, ventilating systems etc. Simple design for simplicity of use. Supplied with a two metre PVC lead. • response time less than 10 seconds • probe temperature range -50 to 100 °C	K	133-460 *(Ø50 mm)* 133-461 *(Ø75 mm)* 133-462 *(Ø100 mm)*
submersible probe  19 x 100 mm	This stainless steel, weighted probe is fully submersible. Ideal for use in water tanks and similar vessels. Supplied with a one, two or three metre PVC lead. • response time less than 10 seconds • probe temperature range -50 to 100 °C	K	133-304 *(1m lead)* 133-305 *(2m lead)* 133-306 *(3m lead)*

longer leads are available for the probes above, please contact our technical sales office for more information.

Hand Held Temperature Probes

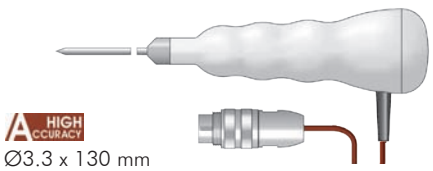
type T thermocouple probes with lumberg connectors

		T/C	order code
penetration probe  HIGH ACCURACY Ø3.3 x 130 mm	This stainless steel penetration probe is strong, versatile and incorporates a heavy duty, ribbed, polypropylene handle with a white end cap. Ideal for measuring liquids, semi-solids and granular materials. • response time less than 3 seconds • probe temperature range -75 to 250 °C	T	177-166
fast response probe  HIGH ACCURACY Ø2.6 x 130 mm	This stainless steel, fast response, needle penetration probe incorporates a heavy duty ribbed, polypropylene handle. Suitable for liquids and soft semi-solid materials including fish, fruit and other soft or delicate materials. • response time less than 1 second • probe temperature range -75 to 250 °C	T	177-100
rigid between pack probe  HIGH ACCURACY Ø6 x 130 mm	This rigid, stainless steel, between pack probe is strong, versatile and incorporates a heavy duty ribbed, polypropylene handle. The probe has been specifically designed to measure between packs or boxes of produce. • response time less than 3 seconds • probe temperature range -75 to 250 °C	T	177-060
air or gas wire probe  Ø2.4 x 1000 mm PTFE lead HIGH ACCURACY	This fast response, air or gas wire probe is ideal for measuring air temperatures in fridges, freezers, chill cabinets and similar. Supplied complete with a one metre PTFE lead. • response time less than 0.5 seconds • probe temperature range -75 to 250 °C	T	177-372

Please note: the above type T thermocouple probes are suitable for use with the Therma 22 & Therma 22 Plus

Waterproof Temperature Probes

type T thermocouple probes with lumberg connectors

		T/C	order code
penetration probe  HIGH ACCURACY Ø3.3 x 130 mm	This waterproof, stainless steel, penetration probe is strong, versatile and incorporates a heavy duty, ribbed, polypropylene handle with a white end cap. Ideal for measuring liquids, semi-solids and granular materials. • response time less than 3 seconds • probe temperature range -75 to 250 °C	T	177-266
penetration probe  Ø3.3 x 100 mm HIGH ACCURACY	This waterproof, stainless steel, plug-mounted probe is strong, versatile and ideal for measuring liquids, semi-solids and granular materials. • response time less than 3 seconds • probe temperature range -75 to 250 °C	T	177-200

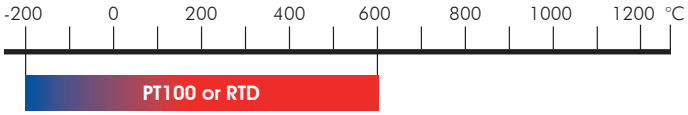
Please note: the above type T thermocouple probes are suitable for use with the Therma 22 Plus

RTD/PT100 Probes

for use with Precision/Precision Plus thermometers

Thermometers are only part of the system; of equal importance is the design of the temperature probes used to physically measure the item. ETI manufactures an extensive range of PT100 (RTD) probes to compliment our range of portable, hand held thermometers and data-loggers.

Resistance temperature detector probes are slower to respond to changes in temperature than thermocouple probes, but are generally more accurate.



resistance temperature detectors

Resistance temperature detector (PT100 or RTD) probes consist of flat film or a wire wound platinum resistance sensor element. The measurement resistance value changes in line with the temperature being measured.

lead types

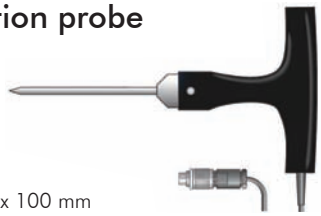
PVC lead is a general purpose lead and available in lengths up to 100 metres. Stainless steel braided lead is a high temperature (fibreglass insulated) lead with a maximum temperature of 350 °C. As standard and where appropriate, each probe is supplied with a one metre straight PVC lead and a connector. Maximum temperature for both PVC and PU leads is 80 °C.

applications

Applications quoted are typical for the specific probe, although there are many alternative uses for which the probe could be equally suitable. For advice on a specific probe for a particular application, please contact the ETI technical sales team. Where requirements cannot be met from the existing standard range of probes, then bespoke designs can be manufactured.

PT100 Class A Temperature Probes

for use with the Precision 0.1 °C thermometer

		order code
penetration probe  Ø3.3 x 130 mm	This stainless steel penetration probe is strong, versatile and ideal for measuring liquids and and semi-solids accurately in a variety of applications. • response time less than 4 seconds • probe temperature range -50 to 200 °C	160-160
air or gas probe  Ø3.3 x 130 mm	This stainless steel air or gas probe is ideal for measuring air or gas temperatures accurately in rooms and ducts in HVAC and industrial applications. • response time less than 4 seconds • probe temperature range -50 to 200 °C	160-300
liquid probe  Ø3.3 x 130 mm	This liquid probe features a rigid, stainless steel stem with a flat tip. The probe is suitable for accurate temperature measurement in a wide variety of laboratory applications. • response time less than 4 seconds • probe temperature range -50 to 200 °C	160-220
air or gas wire probe  Ø3.7 x 30 mm with 1000 mm FEP lead	This FEP insulated air or gas wire probe is ideal for measuring air or gas temperatures accurately in a variety of HVAC and industrial applications. • response time less than 4 seconds • probe temperature range -50 to 200 °C	160-372
penetration probe  Ø4 or Ø6.35 x 100 mm	Available in Ø4 or Ø6.35 mm diameter, this robust, stainless steel penetration probe incorporates a T-shaped polypropylene handle and is ideal for a variety of heavy duty applications. • response time less than 12 seconds • probe temperature range -50 to 200 °C	160-124 *(Ø4 mm)* 160-126 *(Ø6.35 mm)*

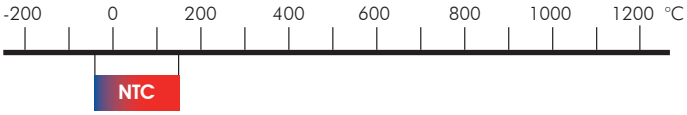
PT100 1/10 DIN Temperature Probes

for use with the Precision Plus 0.01 °C thermometer

		order code
liquid probe  Ø3.3 x 130 mm	This hand held liquid probe features a rigid, stainless steel stem with a flat tip. Suitable for high accuracy temperature measurement in a wide variety of laboratory applications. • response time less than 4 seconds • probe temperature range -200 to 200 °C	160-222
liquid probe  Ø4.8 x 250 mm with 2000 mm PTFE lead	This liquid probe features a rigid, stainless steel stem with a flat tip. Suitable for high accuracy temperature measurement in a wide variety of laboratory applications. • response time less than 10 seconds • probe temperature range -200 to 200 °C	160-446

thermistor probes
for thermometers & data-loggers

Thermometers are only part of the system; of equal importance is the design of the temperature probes used to physically measure the item. ETI manufactures an extensive range of thermistor probes to compliment our range of thermometers, data-loggers and instrumentation.



NTC thermistor probes

Thermistor probes are accurate probes that exhibit a change in resistance with a change of temperature. Thermistor probes have a negative temperature co-effective (NTC), the resistance decreases with the increase in temperature. Thermistor probes cover a limited temperature range and are generally slower to respond to changes in temperature than thermocouples but quicker than PT100 probes. Thermistor probes tend to be smaller than PT100 probes but larger than thermocouple probes. Thermistor probes are not recommended for the measurement of surface temperatures.

lead types

PVC lead is a general purpose lead. FEP (fluoroethylene -propylene) lead is a low temperature lead ideal for working in sub-zero environments to a minimum temperature of -100 °C. As standard and where appropriate, each probe is supplied with a one metre straight PVC lead and is fitted with a compatible Lumberg or binder connector. Maximum temperature for both PVC and PU leads is 80 °C.

applications

Applications quoted are typical for the specific probe, although there are many alternative uses for which the probe could be equally suitable. For advice on a specific probe for a particular application, please contact the ETI technical sales team. Where requirements cannot be met from the existing standard range of probes, then bespoke designs can be manufactured.

NTC Thermistor Temperature Probes

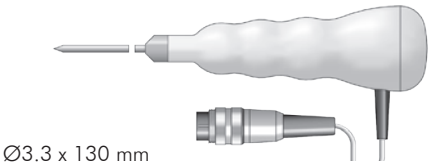
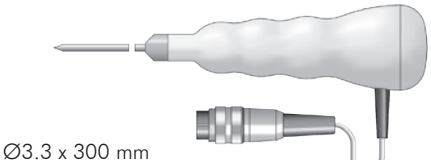
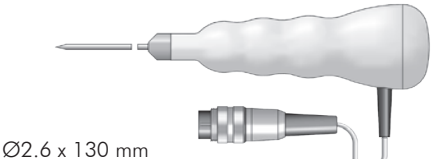
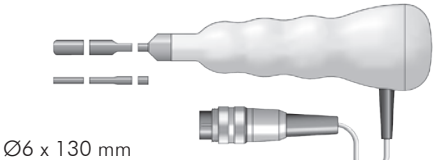
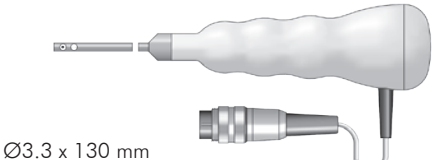
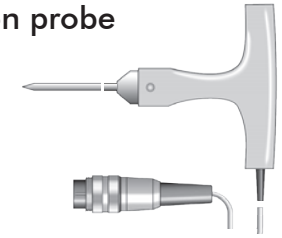
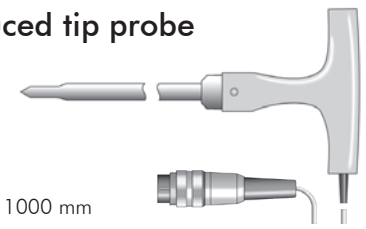
for use with ThermaData® loggers

		order code
general purpose probe  Ø3.3 x 100 mm	This stainless steel penetration probe is suitable for a wide range of remote monitoring applications. Supplied with a one, two or three metre PUR/PVC lead and three-pin Binder connector. • response time less than 2 seconds • probe temperature range -40 to 125 °C	172-011 *(1000 mm)* 172-012 *(2000 mm)* 172-013 *(3000 mm)*
general purpose probe  Ø3.3 x 300 mm	This extended, stainless steel penetration probe is suitable for a wide variety of remote monitoring applications. Supplied with a one metre PUR/PVC lead and three-pin Binder connector. • response time less than 2 seconds • probe temperature range -40 to 125 °C	172-168
liquid probe  Ø3.3 x 100 mm	This liquid probe features a rigid, stainless steel stem with a flat tip. Ideal for a wide variety of pharmaceutical applications. Supplied with a one, two or three metre PUR/PVC lead and three-pin Binder connector. • response time less than 2 seconds • probe temperature range -40 to 125 °C	172-382 *(1000 mm)* 172-383 *(2000 mm)* 172-384 *(3000 mm)*
air or gas probe  Ø3.7 x 30 mm	This stainless steel, air or gas probe is ideal for measuring air temperature in chill cabinets, fridges/freezers, offices, storage areas etc. Supplied with a one, two or three metre PUR/PVC lead and three-pin Binder connector. • response time less than 1 second • probe temperature range -40 to 125 °C	172-372 *(1000 mm)* 172-373 *(2000 mm)* 172-374 *(3000 mm)*
food simulant probe 9 x 100 x 100 mm	This polypropylene, probe is designed for use in food storage, chill cabinets and refrigeration where simulation of food temperature is required. The probe incorporates a one metre PUR/PVC lead and three-pin Binder connector. • probe temperature range 0 to 100 °C	172-350
logger extension lead  150 mm PVC lead	This logger extension lead enables the user to connect any ETI NTC thermistor probe, fitted with a Lumberg connector to a ThermaData logger. The extension lead can be extended up to a maximum of two metres without adversely affecting the readings or accuracy. • maximum temperature 80 °C	172-015

Please note: the maximum temperatures quoted are probe tip temperatures. The maximum PUR/PVC lead temperature is 80 °C.

Hand Held Temperature Probes

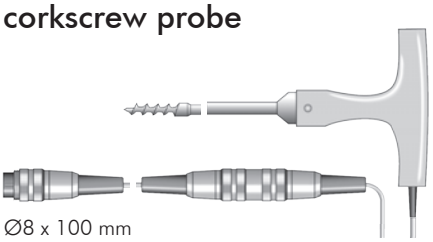
NTC thermistor probes with lumberg connectors

		order code
penetration probe  Ø3.3 x 130 mm	This stainless steel penetration probe is strong, versatile and incorporates a heavy duty, ribbed, polypropylene handle with a colour-coded end cap. Ideal for measuring liquids, semi-solids and granular materials. • response time less than 2 seconds • probe temperature range -40 to 150 °C	174-161 174-162 174-164 174-165 174-166 174-167
penetration probe  Ø3.3 x 300 mm	This extended, stainless steel penetration probe is strong, versatile and incorporates a heavy duty, ribbed, polypropylene handle with a white end cap. Ideal for measuring liquids, semi-solids and granular materials. • response time less than 2 seconds • probe temperature range -40 to 150 °C	174-168
fast response probe  Ø2.6 x 130 mm	This stainless steel, fast response, needle penetration probe incorporates a heavy duty ribbed, polypropylene handle. The probe is suitable for liquids and soft semi-solids including fish, fruit and other delicate materials. • response time less than 1 second • probe temperature range -40 to 150 °C	174-100
rigid between pack probe  Ø6 x 130 mm	This rigid, stainless steel between pack probe is strong, versatile and incorporates a heavy duty ribbed, polypropylene handle. The probe has been specifically designed to measure between packs or boxes of produce. • response time less than 3 seconds • probe temperature range -40 to 150 °C	174-060
air or gas probe  Ø3.3 x 130 mm	This stainless steel, fast response air or gas probe incorporates a heavy duty ribbed, polypropylene handle. The probe is ideal for measuring air temperature in refrigeration units, storage areas and other similar applications. • response time less than 2 seconds • probe temperature range -40 to 150 °C	174-300
penetration probe  Ø4 x 100 mm	This robust, stainless steel penetration probe incorporates a heavy duty, T-shaped polypropylene handle. The strong, durable probe is suitable for a wide variety of heavy duty, general purpose industrial or food processing applications. • response time less than 5 seconds • probe temperature range -40 to 150 °C	170-169
reduced tip probe  Ø9.5 x 1000 mm	This extended robust Ø9.5 mm stainless steel, reinforced probe incorporates a heavy duty, T-shaped polypropylene handle and a reduced sensing tip (Ø6.35 x 25mm) for faster response. Ideal for a wide variety of heavy duty, general purpose industrial or food processing applications. • response time less than 18 seconds • probe temperature range -40 to 150 °C	170-136

Please note: the above NTC thermistor probes are suitable for use with the Therma 20, 22, 20 Plus, 22 Plus, DTR & 8100 Plus

Hand Held Temperature Probes

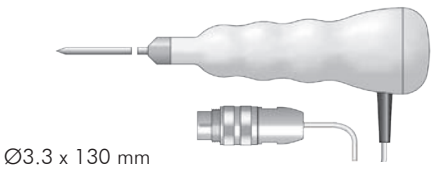
NTC thermistor probes with lumberg connectors

		order code
corkscrew probe  Ø8 x 100 mm	This frozen food probe incorporates a heavy duty T-shaped, polypropylene handle and a corkscrew design sensing tip. Ideal for measuring deep frozen foods or other frozen materials. Supplied with a one metre PVC detachable lead. • response time less than 6 seconds • probe temperature range -40 to 150 °C	170-175
food simulant probe  9 x 100 x 100 mm	This polypropylene, probe is designed for use in food storage, chill cabinets and refrigeration where simulation of food temperature is required. The probe incorporates a one metre PUR/PVC lead and compatible Lumberg connector. • probe temperature range 0 to 100 °C	170-350
air or gas wire probe  Ø3.7 x 30 mm with 1000 mm FEP lead	This fast response, air or gas wire probe is ideal for measuring air temperature in chill cabinets, fridges, freezers, offices, storage areas and similar. Supplied with a one metre FEP lead. • response time less than 1 second • probe temperature range -40 to 150 °C	170-372
foil between pack probe  40 x 50 mm with 1000 mm FEP lead	This easy to use, flexible, fast response, foil between pack probe has been designed to measure between packs or boxes of produce in a variety of applications. • response time less than 3 seconds • probe temperature range 0 to 100 °C	170-090

Please note: the above NTC thermistor probes are suitable for use with the Therma 20, 22, 20 Plus, 22 Plus, DTR & 8100 Plus

Waterproof Temperature Probes

NTC thermistor probes with lumberg connectors

		order code
penetration probe  Ø3.3 x 130 mm	This waterproof, stainless steel penetration probe is versatile, strong and incorporates a heavy duty, ribbed, polypropylene handle with a white end cap. Ideal for measuring liquids, semi-solids and granular materials. • response time less than 3 seconds • probe temperature range -40 to 150 °C	174-266
penetration probe  Ø3.3 x 100 mm	This waterproof, stainless steel plug-mounted penetration probe is versatile and strong. Ideal for measuring liquids, semi-solids and granular materials in a wide variety of applications. • response time less than 3 seconds • probe temperature range -40 to 150 °C	172-000

Please note: the above NTC thermistor probes are suitable for use with the Therma 20 Plus, Therma 22 Plus & 8100 Plus

In 2017 ETI proudly received, for the third time in five years,
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