



Thermometers

for foodservice & industry



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



new Product Spotlight for **2017**

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Catering Thermometers & thermometer accessories



Selecting the correct thermometer for food and catering applications is very important in order to achieve maximum accuracy and repeatability of temperature.

The selection criteria for a digital thermometer should include:

- measurement range
- resolution of the reading 1 °C, 0.1 °C or 0.01 °C
- desired accuracy
- response time
- additional features such as max/min, hold & backlight

We offer a range of catering thermometers and accessories that are ideal for busy restaurants, cafes, bars and food outlets where food safety is essential.

fridge & freezer temperatures

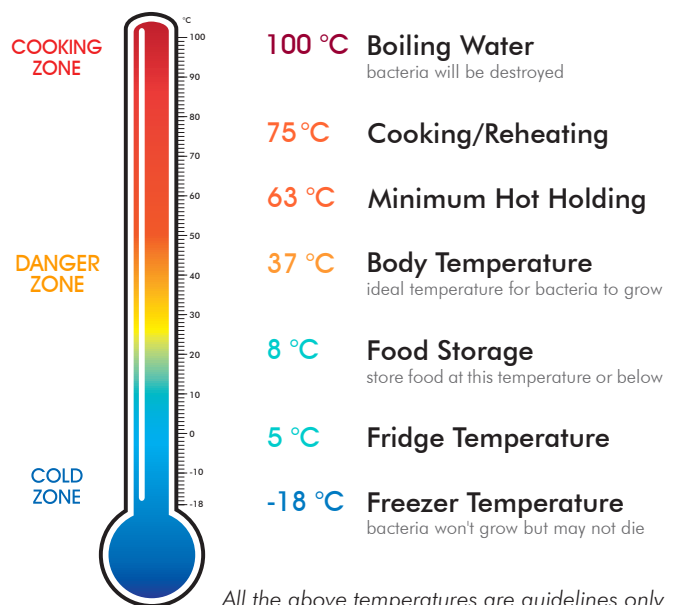
Keeping fridges and freezers at the correct temperature is critical to ensure good food safety during storage.

Food should be stored in a fridge between 1 °C and 5 °C to allow a margin of error below the legal standard of 8 °C.

Food stored in a freezer should be regularly rotated and stored below -18 as bacteria will not grow below this temperature.

safe food temperatures & guide

To prevent food poisoning, it is essential to kill bacteria. Most bacteria are killed quickly between 75 °C and 100 °C. The danger zone is between 8 °C and 63 °C where bacteria will grow rapidly. Therefore it is important when microwaving food that there are no cold spots in the food, likewise when reheating food or sauces that the food is reheated above 75 °C. A safe temperatures guide is available to download via our website.



SuperFast Thermanen[®] 4

digital thermometer

- patented, automatic 360° rotational display
- FREE traceable certificate of calibration
- reaches temperature in just 3 seconds
- waterproof to IP66/67



The SuperFast Thermanen is the UK's number one selling food thermometer measuring temperature over the range of -49.9 to 299.9 °C. Used by hundreds of thousands of people worldwide, it offers a combination of speed, accuracy and convenience of use.

Using advanced technology the Thermanen 4 includes a number of innovative features. The patented 360° self-rotating display can be used in any position, in either hand. The unit incorporates an intelligent backlit display sensing light levels, automatically turning the backlight on/off in varying light conditions. The motion-sensing sleep mode with user changeable time delay, automatically turns the Thermanen 4 on/off when set down or picked up, maximising battery life.

The casing is washable and includes 'Biomaster' additive that reduces bacterial growth and the ergonomic rubber seal minimises the risk of the ingress of water, dust or food. As well as being waterproof to IP66/67, it is still 'probably' the fastest reading contact thermometer on the market today. The true temperature of a product can be tested in just three seconds. The Thermanen 4 incorporates a reduced tip, stainless steel, penetration probe (Ø3.3 x 110 mm) that conveniently folds back through 180° into the side of the instrument when not in use.

The Thermanen 4 is powered by a single AAA battery with a life expectancy of 3000 hours in normal use, without the backlight. Both low battery (icon) and open circuit indication are displayed, when applicable. Each Thermanen 4 is supplied with a FREE traceable certificate of calibration.



truly ambidextrous

Automatic 360° rotational display.
UK Patent No. GB 2504936



intelligent backlit LCD



| order code | description |
|------------|------------------------------|
| 234-407 | Thermanen 4 - grey |
| 234-417 | Thermanen 4 - white |
| 234-427 | Thermanen 4 - yellow |
| 234-437 | Thermanen 4 - green |
| 234-447 | Thermanen 4 - red |
| 234-457 | Thermanen 4 - blue |
| 234-477 | Thermanen 4 - black |
| 234-487 | Thermanen 4 - orange |
| 234-497 | Thermanen 4 - pink |
| 234-507 | Thermanen 4 - purple |
| 830-460 | protective silicone boot |
| 830-465 | silicone boot - glow in dark |
| 830-110 | protective wallet |
| 830-001 | zip pouch |
| 832-002 | s/steel wall bracket |



| specification | SuperFast Thermanen 4 |
|---------------|---|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C or 1 °C - user selectable |
| accuracy | ±0.4 °C (-49.9 to 199.9 °C) otherwise ±1 °C |
| battery | 1 x 1.5 volt AAA |
| battery life | 3000 hours (normal use, without backlight) |
| sensor type | K thermocouple |
| display | 14.5 mm (horizontal) & 11 mm (vertical) LCD |
| dimensions | 19 x 50 x 157 mm |
| weight | 120 grams |

FREE traceable certificate of calibration included



SuperFast Thermapen® 3

digital thermometer

- over 50 % faster response than traditional probes
- FREE traceable certificate of calibration
- reaches temperature in just 3 seconds!
- 2 year guarantee



The SuperFast Thermapen 3 thermometer incorporates a large digital display with a precise read-out of temperature over the range of -49.9 to 299.9 °C with a 0.1 °C resolution and an accuracy of ±0.4 °C.

The resolution can be switched to 1 °C, if required, via a switch in the battery compartment. The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled if not required.

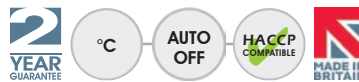
The casing is washable and includes 'Biomaster' additive that reduces bacterial growth and the ergonomic rubber seal minimises the risk of the ingress of water, dust or food. As well as being splashproof, it is still 'probably' the fastest reading contact thermometer on the market today. The true temperature of a product can be tested in just three seconds. The Thermapen 3 incorporates a reduced tip, stainless steel, food penetration probe (Ø3.3 x 115 mm) that conveniently folds back through 180° into the side of the instrument when not in use.

Both low battery (icon) and open circuit indication are displayed, when applicable. Each Thermapen is powered by two lithium coin cell batteries with a minimum life expectancy of 1500 hours.



optional accessories

- **new** stainless steel wall bracket (832-002)
- zip pouch with belt strap (830-001)
- protective silicone boot (830-260)
- glow in the dark protective silicone boot with magnets (830-265)
- protective PVC wallet with belt strap (830-110)



| order code | description |
|------------|------------------------------|
| 231-217 | Thermapen 3 - white |
| 231-227 | Thermapen 3 - yellow |
| 231-237 | Thermapen 3 - green |
| 231-247 | Thermapen 3 - red |
| 231-257 | Thermapen 3 - blue |
| 830-260 | protective silicone boot |
| 830-265 | silicone boot - glow in dark |
| 830-110 | protective wallet |
| 830-001 | zip pouch |
| 832-002 | s/steel wall bracket |

| specification | SuperFast Thermapen 3 |
|---------------|---|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C or 1 °C - user selectable |
| accuracy | ±0.4 °C (-49.9 to 199.9 °C) otherwise ±1 °C |
| battery | 2 x 3 volt CR2032 lithium coin cell |
| battery life | 1500 hours |
| sensor type | K thermocouple |
| display | 14.5 mm LCD |
| dimensions | 19 x 47 x 153 mm |
| weight | 97 grams |

FREE traceable certificate of calibration included



Pro-Surface Thermanen[®] 3

ideal for grills & hotplates

- pivoting probe & swivel tip for perfect contact
- temperature range -49.9 to 299.9 °C

The Pro-Surface Thermanen 3 thermometer measures the temperature of grills, hotplates, and other surfaces over the range of -49.9 to 299.9 °C with a user-selectable resolution of 0.1 or 1 °C. The Pro Surface Thermanen 3 is calibrated "as a system" for improved accuracy.

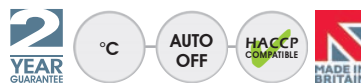
Simply open the probe and take the reading - the pivoting probe and swivel tip ensure perfect surface contact and high accurate measurement. The Pro-Surface features the same specification as the SuperFast Thermanen 3 (see page opposite) and includes a FREE traceable certificate of calibration.



optional accessory



Protect your instrument against accidental damage by fitting a protective silicone boot (830-260)



| order code | description |
|------------|--------------------------|
| 231-279 | Pro-Surface Thermanen 3 |
| 830-260 | protective silicone boot |
| 830-110 | protective wallet |

FREE traceable certificate of calibration included

Sous Vide Thermanen[®] 3

with miniature needle probe

- Ø1.1 mm reduced tip is ideal for delicate foods
- reaches temperature in just 3 seconds!

The Sous Vide Thermanen 3 thermometer has been specifically designed for Sous Vide cooking and areas where precise temperature measurement is required.

This model incorporates a miniature, stainless steel needle probe that has a Ø1.1 x 60 mm reduced tip, that conveniently folds back through 180° into the side of the instrument when not in use.

The Sous Vide Thermanen 3 features the same specification as the SuperFast Thermanen 3 (see page opposite) and includes a FREE traceable certificate of calibration.



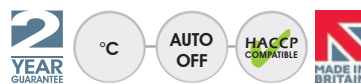
miniature needle probe

Please Note: This probe is delicate and should be treated with care.

optional accessory



Sous Vide foam/tape - one metre (600-475)



| order code | description |
|------------|-----------------------|
| 231-011 | Sous Vide Thermanen 3 |
| 600-475 | Sous Vide foam/tape |

FREE traceable certificate of calibration included



ThermaLite® Thermometers

with assured accuracy for life



- temperature range -39.9 to 149.9 °C, with a high accuracy
- reduced tip provides faster & more accurate readings
- ThermaLite 2 includes CalCheck 0.0 °C function
- FREE traceable certificate of calibration

The ThermaLite digital thermometers display temperature over the range of -39.9 to 149.9 °C with a 0.1 °C resolution and an accuracy of ±0.5 °C (-39.9 to 124.9 °C). This accuracy is guaranteed for life, due to the instruments advanced electronics. The ThermaLite 2 also incorporates CalCheck and hold functions.

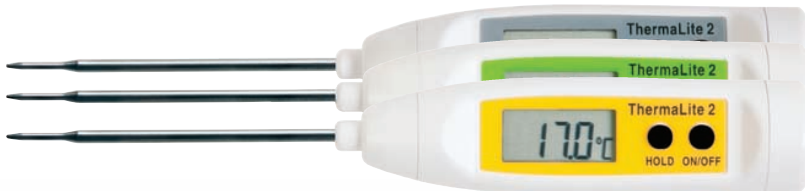


The thermometers weigh only 45 grams including battery, and feature a clear, easy to read LCD display with an open circuit 'Err' and low battery indication. The ThermaLite's auto-power off facility turns the instrument off automatically after ten minutes, maximising battery life. The thermometer is housed in a high impact ABS plastic case which includes the 'Biomaster' additive that reduces bacterial growth, ideal for routine day-to-day food and catering applications.

The Ø3.3 x 80 mm reduced tip, stainless steel, penetration probe is ideal for measuring the temperature of food and semi-solid materials. The ThermaLite is available in six colours, suitable for different applications.

ThermaLite 2 with CalCheck function

- The ThermaLite 2 features a CalCheck 0.0 °C (±0.1 °C) function that allows the user to verify the accuracy of the thermometer at any time, giving confidence that measurements are accurate.



Protective Silicone Boot

Protects your instrument against accidental damage and increases the water resistance to an IP65 rating

| order code | description |
|------------|--------------------------|
| 226-101 | ThermaLite 1 - grey |
| 226-111 | ThermaLite 1 - white |
| 226-121 | ThermaLite 1 - yellow |
| 226-131 | ThermaLite 1 - green |
| 226-141 | ThermaLite 1 - red |
| 226-151 | ThermaLite 1 - blue |
| 226-102 | ThermaLite 2 - grey |
| 226-112 | ThermaLite 2 - white |
| 226-122 | ThermaLite 2 - yellow |
| 226-132 | ThermaLite 2 - green |
| 226-142 | ThermaLite 2 - red |
| 226-152 | ThermaLite 2 - blue |
| 830-280 | protective silicone boot |



| specification | ThermaLite 1 & 2 |
|---------------|---------------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-39.9 to 124.9 °C) |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 5000 hours |
| sensor type | thermistor |
| display | 10 mm LCD |
| dimensions | Ø29 x 196 mm (inc. probe) |
| weight | 45 grams |

FREE traceable certificate of calibration included



TempTest[®] 1 Smart Thermometer

with 360° rotating display

- fast response probe, reaches temperature in just 3 seconds!
- patented, automatic 360° rotational display
- small, compact, waterproof (IP67) design
- auto intelligent backlit display

The TempTest 1 smart thermometer incorporates a large, easy to read digital display, with a precise read-out of temperature over the range of -49.9 to 299.9 °C with a 0.1 °C/°F resolution and an accuracy of ±0.4 °C (-49.9 to 200 °C). The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled.

The thermometer is housed in a waterproof IP67 case with an ergonomic rubber seal, both include 'Biomaster' additive to reduce bacterial growth. As well as being waterproof, it is 'probably' one of the fastest reading contact thermometers on the market today. The true temperature of a product can be measured in just three seconds.

Both low battery (icon) and open circuit indication are displayed, when applicable. Each TempTest 1 is powered by two AAA batteries with a minimum life expectancy of 5000 hours in normal use without the backlight.

Each thermometer is supplied with a permanently attached, pointed stainless steel food penetration probe (Ø3.3 x 80 mm) with fast response tip.

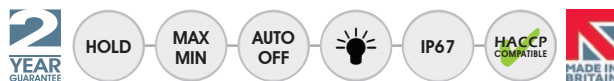
automatic 360° rotational display

The TempTest 1 features an automatic 360° display, which rotates in 90° increments enabling the user to read the temperature in any position ie. left hand, right hand, vertical or horizontal. This feature can be 'locked' by the user, if required.



includes FREE Holster/Wall Bracket

Designed specifically for the TempTest, this plastic wall bracket/holster ensures safe, secure and handy storage



| order code | description |
|------------|-----------------------------------|
| 221-910 | TempTest 1 thermometer |
| 830-431 | protective silicone boot - white |
| 830-432 | protective silicone boot - yellow |
| 830-433 | protective silicone boot - green |
| 830-434 | protective silicone boot - red |
| 830-435 | protective silicone boot - blue |
| 830-437 | protective silicone boot - black |

| specification | TempTest 1 |
|---------------|--|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.4 °C (-49.9 to 200 °C) otherwise ±1 °C |
| battery | 2 x 1.5 volt AAA |
| battery life | 5000 hours (normal use, without backlight) |
| sensor type | K thermocouple |
| display | 11 mm LCD |
| dimensions | 17 x 47 x 200 mm (inc. probe) |
| weight | 105 grams |

FREE traceable certificate of calibration included



TempTest[®] 2 Smart Thermometer

with air, surface or penetration probe

- patented, automatic 360° rotational display
- small, compact, waterproof (IP67) design
- auto intelligent backlit display

new models



The TempTest 2 smart thermometer incorporates a large, easy to read digital display, with a precise read-out of temperature over the range of -49.9 to 299.9 °C with a 0.1 °C/°F resolution and an accuracy of ±0.4 °C (-49.9 to 200 °C). The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled.

The thermometer is housed in a waterproof IP67 case with an ergonomic rubber seal, both include the 'Biomaster' additive to reduce bacterial growth. As well as being waterproof, it is 'probably' one of the fastest reading contact thermometers on the market today. The true temperature of a product can be measured in just three seconds.

Both low battery (icon) and open circuit indication are displayed, when applicable. Each TempTest 2 is powered by two AAA batteries with a minimum life expectancy of 5000 hours in normal use without the backlight. Each unit is supplied with a permanently attached hand held probe with 500 mm PVC lead.

choice of probe styles

The TempTest 2 is now available with two additional probe styles; surface or air. The fast response air or gas probe is an invaluable tool in establishing the correct air temperature quickly in refrigeration units, storage areas and other similar applications. The waterproof, ribbon surface probe is particularly useful for determining the temperature of hot plates, grills, pipework etc. **Please note:** the accuracy and speed of response will be dependant on whether the surface is flat.

penetration probe

Ø3.3 x 100 mm



This fast response, stainless steel penetration probe has a reduced tip and is ideal for measuring a wide variety of applications including liquids and semi-solids.

new air or gas probe

Ø3.3 x 100 mm



This fast response air or gas probe is ideal for measuring the air temperature in fridges, freezers, chill cabinets and similar.

new waterproof surface probe

Ø8 x 100 mm



This ribbon surface probe is ideal for measuring the surface temperature of hotplates, grills and other flat surfaces.



| order code | description |
|------------|--------------------------------|
| 222-910 | TempTest 2 - penetration probe |
| 222-913 | TempTest 2 - air probe |
| 222-914 | TempTest 2 - surface probe |



| specification | TempTest 2 |
|---------------|--|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.4 °C (-49.9 to 200 °C) otherwise ±1 °C |
| battery | 2 x 1.5 volt AAA |
| battery life | 5000 hours (normal use, without backlight) |
| sensor type | K thermocouple |
| display | 11 mm LCD |
| dimensions | 17 x 47 x 120 mm |
| weight | 140 grams |

FREE traceable certificate of calibration included



Thermamite[®] Thermometer

complete with food penetration probe



- FREE traceable certificate of calibration
- temperature range -50 to 300 °C
- compact & robust design
- 2 year guarantee

The Thermamite thermometer offers accuracy, flexibility and ease of use, coupled with the durability and reliability that is required by the food and catering industry in helping to meet today's food hygiene legislation.

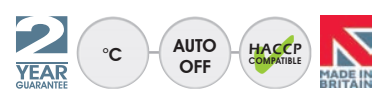
The thermometer incorporates an easy to read, LCD display with a precise read-out of temperature over the range of -50 to 300 °C with a 1 °C resolution. Low battery and open circuit indication are also displayed. The unit will power off automatically after ten minutes, maximising battery life.

The instrument is housed in an ergonomic, robust ABS case that includes 'Biomaster' additive which reduces bacterial growth. Each thermometer is supplied with a permanently attached, pointed stainless steel food penetration probe (Ø3.3 x 100 mm) and a 500 mm PVC lead.



optional accessories

- protective silicone boot - the Thermamite is water resistant to IP65 when used in conjunction with this boot. Various colours are available - see page 14
- stainless steel wall bracket (screws not supplied) and protective white silicone boot (832-050)



| order code | description |
|------------|----------------------------------|
| 261-010 | Thermamite - white |
| 261-020 | Thermamite - yellow |
| 261-030 | Thermamite - green |
| 261-040 | Thermamite - red |
| 261-050 | Thermamite - blue |
| 830-221 | protective silicone boot - white |
| 832-050 | s/steel wall bracket & boot |

| specification | Thermamite |
|---------------|-------------------------------|
| range | -50 to 300 °C |
| resolution | 1 °C |
| accuracy | ±1 °C |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included



Food Check

thermometer & probe

- can be used as part of HACCP procedures
- FREE traceable certificate of calibration
- temperature range -49.9 to 299.9 °C
- 2 year guarantee

The Food Check is designed specifically for the food and catering professional who wishes to purchase an economically priced digital thermometer. The Food Check thermometer will measure temperature quickly and accurately when monitoring cooked and chilled foods as part of HACCP and health and safety procedures.

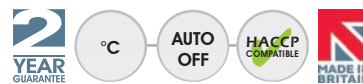
The thermometer is housed in a user-friendly ABS case that includes 'Biomaster' additive which reduces bacterial growth. The Food Check features a large, easy to read, LCD display with open circuit and low battery indication. The instrument incorporates a simple to use on/off push-button and is powered by three AAA batteries that give a minimum of five years battery life. The Food Check will power off automatically after ten minutes, maximising battery life. The thermometer measures temperature over the range of -49.9 to 299.9 °C with a resolution of 0.1 °C.

Each Food Check is supplied with a permanently attached food penetration probe with a 130 mm stainless steel stem and 500 mm PVC lead. This is the ideal choice for routine food inspections.



optional accessories

- protective silicone boot - the Food Check is water resistant to IP65 when used in conjunction with this boot. Various colours are available - see page 14
- stainless steel wall bracket (screws not supplied) and protective white silicone boot (832-050)
- anti-bacterial wipes - see page 35



| order code | description |
|------------|----------------------------------|
| 221-018 | Food Check - white |
| 221-028 | Food Check - yellow |
| 221-038 | Food Check - green |
| 221-048 | Food Check - red |
| 221-058 | Food Check - blue |
| 830-221 | protective silicone boot - white |
| 832-050 | s/steel wall bracket & boot |

| specification | Food Check |
|---------------|---|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C |
| accuracy | ±0.4 °C (-50 to 199 °C) otherwise ±1 °C |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included



CaterTemp[®] Thermometer

complete with food penetration probe

- temperature range -49.9 to 299.9 °C
- FREE traceable certificate of calibration
- 2 year guarantee
- 0.1 °C resolution

The CaterTemp professional digital thermometer is designed with the catering and food processing industry in mind and incorporates a combination of proven circuitry and durability. The CaterTemp thermometer is housed in a robust ABS case that includes 'Biomaster' additive to reduce bacterial growth.

The CaterTemp measures temperature over the range of -49.9 to 299.9 °C with a resolution of 0.1 °C. The instrument features a bright, easy to read LCD, displaying open circuit and low battery indication, when applicable.

The thermometer is powered by three AAA batteries that give a minimum of five years battery life. The CaterTemp will power off automatically after ten minutes, maximising battery life.

Each thermometer is supplied with a permanently attached food penetration probe with a 130 mm pointed, stainless steel stem and one metre coiled PU lead.



optional accessories

- protective silicone boot - the CaterTemp is water resistant to IP65 when used in conjunction with this boot. Various colours available - see page 14
- stainless steel wall bracket (screws not supplied) and protective black silicone boot (832-053)



| specification | CaterTemp |
|---------------|---|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C |
| accuracy | ±0.4 °C (-50 to 199 °C) otherwise ±1 °C |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included

| order code | description |
|------------|----------------------------------|
| 221-046 | CaterTemp |
| 830-227 | protective silicone boot - black |
| 832-053 | s/steel wall bracket & boot |



ThermaCheck Thermometer

complete with thermistor penetration probe

- assured accuracy for the life of the thermometer
- FREE traceable certificate of calibration
- high system accuracy ± 0.4 °C
- range -39.9 to 149.9 °C

The ThermaCheck hand held thermistor thermometer has been specifically designed for use in the catering and food processing industries to cope with routine day-to-day usage.

The ThermaCheck measures temperature over the range of -39.9 to 149.9 °C with a resolution of 0.1 °C and a high system accuracy (probe and thermometer) of ± 0.4 °C (-25 to 110 °C). This accuracy is guaranteed for life, due to the instrument's advanced electronics.

The instrument is housed in an ergonomic, robust ABS case that includes 'Biomaster' additive which reduces bacterial growth. The low power consumption electronics are powered by three AAA batteries, giving the instrument exceptional battery life of up to five years. The auto-power off facility turns the instrument off automatically after ten minutes.

The ThermaCheck thermometer is supplied complete with a permanently attached food penetration probe with a 130 mm stainless steel stem and one metre coiled PU lead.



optional accessories

- stainless steel wall bracket (screws not supplied) and protective white silicone boot (832-050)
- protective silicone boot - the ThermaCheck is water resistant to IP65 when used in conjunction with this boot. Various colours are available - see below



| order code | description |
|------------|-----------------------------------|
| 226-042 | ThermaCheck |
| 830-221 | protective silicone boot - white |
| 830-222 | protective silicone boot - yellow |
| 830-223 | protective silicone boot - green |
| 830-224 | protective silicone boot - red |
| 830-225 | protective silicone boot - blue |
| 830-227 | protective silicone boot - black |
| 832-050 | s/steel wall bracket & boot |

| specification | ThermaCheck |
|---------------|-------------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C |
| accuracy | ± 0.4 °C (-25 to 110 °C) |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (20000 hours) |
| sensor type | thermistor |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 220 grams |

FREE traceable certificate of calibration included



Therma 20 Thermometer

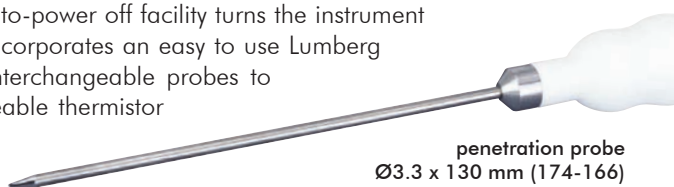
for high accuracy readings

- assured accuracy for the life of the thermometer
- meets the European Standard EN13485
- FREE traceable certificate of calibration
- 2 year guarantee

The Therma 20 thermistor thermometer has been specifically designed for use in the catering industry with HACCP and health and safety procedures in mind.

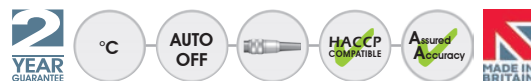
The instrument displays temperature to 0.1 °C over the range of -39.9 to 149.9 °C with a high system accuracy of ±0.4 °C (-25 to 110 °C). This accuracy is guaranteed for life, due to the instrument's advanced electronics. The Therma 20 features an easy to read, LCD display with low battery indication. The thermometer can be used in low ambient working temperatures down to -20 °C, which meets the requirements of the European Standard EN13485 for the temperature monitoring of food through the supply chain, from transport to storage to point of sale.

The instrument is housed in an ergonomic, robust ABS case that includes 'Biomaster' additive which reduces bacterial growth. The thermometer's auto-power off facility turns the instrument off automatically after ten minutes. The Therma 20 incorporates an easy to use Lumberg screw-locking connector, allowing a wide range of interchangeable probes to be used. We offer an extensive range of interchangeable thermistor probes, see pages 68 and 69 for full details.



optional accessories

- thermistor test caps with UKAS Certificate of Calibration are available for checking the accuracy of the Therma 20 and 22 thermometers, see below for details.
- protective silicone boot - the Therma 20 is splashproof to IP64 when used in conjunction with this boot. Various colours are available - see page opposite.



| order code | description |
|------------|----------------------------------|
| 226-040 | Therma 20 |
| 174-166 | penetration probe |
| 286-001 | thermistor test cap -18 °C |
| 286-002 | thermistor test cap 0 °C |
| 286-003 | thermistor test cap 3 °C |
| 286-004 | thermistor test cap 70 °C |
| 286-005 | thermistor test cap 100 °C |
| 830-221 | protective silicone boot - white |
| 832-050 | s/steel wall bracket & boot |

the Therma 20 is exclusive of probe

| specification | Therma 20 |
|---------------|-------------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C |
| accuracy | ±0.4 °C (-25 to 110 °C) |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (20000 hours) |
| sensor type | thermistor |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included



Therma 22 Thermometer

utilises thermistor or type T thermocouple probes

- optional test caps available for checking accuracy
- wide range of interchangeable probes
- temperature range -199.9 to 400 °C
- fast response with high accuracy

The Therma 22 hand held thermistor and thermocouple thermometer has been specifically designed for those who need the versatility of both the thermocouple and thermistor probes in one compact unit.

The thermistor sensor gives greater accuracy for food processing, whilst the type T thermocouple sensor extends the measurement range and provides faster response. Plug the probe of your choice into the Therma 22 and the thermometer will take fast, accurate measurements.

The Therma 22 features an easy to read, LCD display with open circuit and low battery indication. The instrument displays temperature over the range of -39.9 to 149.9 °C (thermistor) or over the range of -199.9 to 400 °C (type T thermocouple).

The unit is housed in a robust ABS case that includes 'Biomaster' additive which reduces bacterial growth. The auto-power off facility maximises battery life, turning the instrument off automatically after ten minutes.

The Therma 22 incorporates a Lumberg screw-locking type connector, allowing a wide range of interchangeable probes to be used. We offer an extensive range of interchangeable type T thermocouple probes, see page 65 and for thermistor probes, see pages 68 and 69.



penetration probe
Ø3.3 x 130 mm (177-166)



optional accessories

- protective silicone boot - the Therma 22 is splashproof to IP64 when used in conjunction with this boot. Various colours are available - see page 14
- thermistor test caps with UKAS Certificate of Calibration - see page 15 for details



| order code | description |
|------------|----------------------------------|
| 227-022 | Therma 22 |
| 177-166 | penetration probe |
| 830-221 | protective silicone boot - white |
| 832-050 | s/steel wall bracket & boot |

the Therma 22 is exclusive of probe

| specification | Therma 22 |
|------------------------------|----------------------------------|
| range - type T thermocouple | -199.9 to 400 °C |
| range - thermistor | -39.9 to 149.9 °C |
| resolution | 0.1 °C to 300 °C thereafter 1 °C |
| instrument only accuracy | ±0.2 °C |
| system accuracy - type T t/c | ±0.5 °C (-50 to 150 °C) |
| system accuracy - thermistor | ±0.4 °C (-25 to 110 °C) |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | thermistor/type T thermocouple |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included



Catering Thermometer Kits

ideal for food & fridge/freezer monitoring

These thermometer and probe kits are designed for the food and catering industry. For a full specification on each thermometer see pages 15, 16 and 45. These kits represent excellent value-for-money as each one is supplied in a FREE carrying case with a FREE temperature log book and a FREE mini tub of 70 QAC free Probe Wipes.

professional catering thermometer kit 0.1 °C

each kit contains:

- Therma 20 thermometer (226-040)
- penetration probe (174-166)
- air wire probe (170-372)
- temperature log book (831-100)
- mini tub of 70 Probe Wipes (836-022)
- ABS carrying case (834-120)



| order code | description | |
|--|---------------------------|--|
| 860-120 | professional catering kit | |
| FREE traceable certificate of calibration included | | |



food hygiene thermometer kit 0.1 °C

each kit contains:

- Therma 22 thermometer (227-022)
- penetration probe (177-166)
- air wire probe (177-372)
- temperature log book (831-100)
- mini tub of 70 Probe Wipes (836-022)
- ABS carrying case (834-120)

| order code | description | |
|--|------------------|--|
| 860-125 | food hygiene kit | |
| FREE traceable certificate of calibration included | | |

budget catering thermometer kit 1 °C

each kit contains:

- Therma 3 thermometer (221-043)
- penetration probe (123-160)
- PTFE wire probe (133-362)
- temperature log book (831-100)
- mini tub of 70 Probe Wipes (836-022)
- ABS carrying case (834-120)

| order code | description | |
|--|---------------------|--|
| 860-025 | budget catering kit | |
| FREE traceable certificate of calibration included | | |



Sous Vide Thermometer Kits

for precise temperature measurement



- fast response, reaches temperature in just 3 seconds!
- delivers consistent results for Sous Vide cooking

Sous Vide cooking has become more popular in professional kitchens over the past few years. New cooking methods require new temperature testing techniques. Therefore, ETI has designed two Sous Vide kits; each containing a high accuracy Therma 1 thermometer, Sous Vide needle probe(s) and Sous Vide foam/tape, all supplied in a FREE carrying case/zip pouch. For a full specification on the Therma 1 thermometer, see page 45.

Sous Vide thermometer kit

each kit contains:

- Therma 1 thermometer (221-041)
- 60 mm Sous Vide needle probe (133-109)
- 120 mm Sous Vide needle probe (133-110)
- water resistant countdown timer (806-150)
- mini tub of 70 Probe Wipes (836-022)
- Sous Vide foam/tape - one metre (600-475)
- ABS carrying case (834-150)



| order code | description |
|------------|---------------------------------|
| 860-035 | Sous Vide thermometer kit |
| 600-475 | Sous Vide foam/tape - one metre |

FREE traceable certificate of calibration included




Budget Sous Vide thermometer kit

each kit contains:

- Therma 1 thermometer (221-041)
- 60 mm Sous Vide needle probe (133-109)
- Sous Vide foam/tape - one metre (600-475)
- zip pouch (830-037)

| order code | description |
|------------|----------------------------------|
| 860-036 | budget Sous Vide thermometer kit |
| 600-475 | Sous Vide foam/tape - one metre |

FREE traceable certificate of calibration included

| | | order code |
|---|---|---------------------|
| Sous Vide needle probe  Ø1.1 x 60 or 120 mm | This miniature, stainless steel needle probe is supplied with a one metre PTFE lead. The needle probe is ideal for delicate foods. <ul style="list-style-type: none"> ● response time less than 1 second ● probe temperature range -60 to 90 °C | 133-109 (60 mm) |
| | | 133-110 (120 mm) |



Pocket-sized Thermometers

economical & easy to use

pen-shaped thermometer



This pen-shaped thermometer measures temperature over the range of -49.9 to 149.9 °C, features a Ø3.5 x 120 mm stainless steel penetration probe and incorporates a °C/°F switch and display hold feature. Supplied with a probe cover that includes a pocket clip.

| specification | pen-shaped |
|----------------|----------------------------|
| range | -49.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery & life | 1.5 volt LR44 - 5000 hours |
| display | 6 mm LCD |
| dimensions | 17 x 20 x 190 mm |
| weight | 15 grams |

| order code | description | |
|------------|------------------------|--|
| 810-260 | pen-shaped thermometer | |

T-shaped thermometer



This handy-sized thermometer measures temperature over the range of -49.9 to 149.9 °C, features a Ø3.5 x 120 mm stainless steel penetration probe and incorporates a °C/°F switch and display hold feature. Supplied with a probe cover that includes a pocket clip.

| specification | T-shaped |
|----------------|----------------------------|
| range | -49.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery & life | 1.5 volt LR44 - 5000 hours |
| display | 6 mm LCD |
| dimensions | 20 x 58 x 145 mm |
| weight | 15 grams |

| order code | description | |
|------------|----------------------|--|
| 810-265 | T-shaped thermometer | |

water resistant max/min thermometer

This handy pocket-sized, water resistant, max/min, thermometer features a Ø2.5 x 125 mm fast response reduced tip, stainless steel food penetration probe. This thermometer is an ideal economical solution for numerous temperature measurement applications.

The thermometer measures temperature over the range of -49.9 to 199.9 °C with a resolution of 0.1 °C/°F and features three easy to use push buttons, max/min, °C/°F and on/off. Each unit is supplied with a probe cover that incorporates a pocket clip.



| specification | water resistant |
|---------------|---------------------------------|
| range | -49.9 to 199.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-9.9 to 99.9 °C) |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 5000 hours |
| display | 8.5 mm LCD |
| dimensions | Ø41 x 17 x 175 mm |
| weight | 22 grams |



| order code | description | |
|------------|-----------------------------|--|
| 810-270 | water resistant thermometer | |

Multi-Function Thermometer

with max/min & alarm functions

- incorporates foldaway stand, pocket clip & probe cover
- displays both temperature & alarm set temperatures

The Multi-Function thermometer is compact and easy to use and displays both the temperature and the alarm set temperatures. Ideal for restaurants, bars and cafes as an economical solution for temperature measurement applications.

The thermometer features a display hold facility and a max/min memory function together with an adjustable audible high/low temperature alarm. Each unit is supplied with a stainless steel, food penetration probe (Ø3.5 x 125 mm) with one metre PVC connecting lead, pocket clip and probe cover.



| order code | description |
|------------|------------------------------------|
| 810-961 | Multi-Function thermometer - white |
| 810-964 | Multi-Function thermometer - red |
| 810-965 | Multi-Function thermometer - blue |

| specification | Multi-Function |
|----------------|---------------------------|
| range | -49.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C (-19.9 to 149.9 °C) |
| battery & life | 1.5 volt AAA - 5000 hours |
| sensor type | thermistor |
| display | custom LCD |
| dimensions | 32 x 86 x 116 mm |
| weight | 98 grams |

EcoTemp® Thermometer

with max/min & hold functions

- detachable, stainless steel food penetration probe
- large, easy to read LCD display

The EcoTemp digital thermometer features a large, easy to read, LCD display with display hold and max/min memory functions. The instrument measures temperature over the range of -49.9 to 199.9 °C with a 0.1 °C/°F resolution. Both open circuit and low battery indication are displayed, when applicable. This thermometer is ideal for monitoring cooking and food holding temperatures as part of HACCP and health and safety procedures.

Each EcoTemp thermometer is supplied with a detachable, stainless steel food penetration probe (Ø3.5 x 125 mm) with a 700 mm silicone connecting lead.



| order code | description |
|------------|----------------------------------|
| 810-950 | EcoTemp thermometer & probe |
| 810-951 | replacement penetration probe |
| 830-215 | protective silicone boot - white |



| specification | EcoTemp |
|----------------|--------------------------------|
| range | -49.9 to 199.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C (-49.9 to 149.9 °C) |
| battery & life | 2 x 1.5 volt AAA - 10000 hours |
| sensor type | thermistor |
| display | custom 22 mm LCD |
| dimensions | 20 x 58 x 165 mm |
| weight | 115 grams |





Waterproof Thermometer

with max/min & °C/°F functions

- easy to use, pocket-sized thermometer
- FREE protective silicone boot

This waterproof thermometer measures temperature over the range of -49.9 to 199.9 °C with a 0.1 °C resolution and features a max/min temperature recording function and at the back of the instrument a discreet °C/°F and reset button.

The unit incorporates a Ø2.5 x 122 mm stainless steel food penetration probe. This waterproof thermometer incorporates the latest microprocessor technology, designed for reliability and ease of use in routine day-to-day catering, food preparation and industrial applications.

Each unit is supplied with a FREE protective silicone boot and protective probe cover that incorporates a pocket clip and wall-mounting keyhole slot.



FREE Protective Boot

Protects against accidental damage



| specification | waterproof |
|---------------|--|
| range | -49.9 to 199.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-9.9 to 99.9 °C) otherwise ±1.5 °C |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 5000 hours |
| display | 8 mm LCD |
| dimensions | 20 x 26 x 200 mm |
| weight | 25 grams |

| order code | description |
|------------|---------------------------|
| 810-275 | waterproof thermometer |
| 830-275 | replacement silicone boot |

Waterproof Thermometers

robust & heavy duty, optional longer probe

- max/min memory & display hold functions
- strong, robust, stainless steel probe

These easy to use, digital T-shaped waterproof thermometers offer IP66/67 protection and incorporate a reduced tip probe that is ideal for heavy duty applications.

Measuring temperature over the range of -49.9 to 149.9 °C with a 0.1 °C resolution, the thermometer will power off automatically after fifteen minutes, maximising battery life.

Each unit is housed in a robust polycarbonate case with a strong, stainless steel, penetration probe. The probe measures Ø5 x 125 mm or 300 mm with a reduced tip (Ø3.5 x 20 mm) to improve response time. The waterproof thermometers feature a max/min memory and display hold function.



| specification | waterproof T-shaped |
|----------------|----------------------------|
| range | -49.9 to 149.9 °C |
| resolution | 0.1 °C |
| accuracy | ±1 °C (-19.9 to 119.9 °C) |
| battery & life | 1.5 volt LR44 - 5000 hours |
| display | 12 mm LCD |
| dimensions | 30 x 88 x 170/345 mm |
| weight | 50/60 grams |

| order code | description |
|------------|-------------------------|
| 810-285 | T-shaped - 125 mm probe |
| 810-287 | T-shaped - 300 mm probe |



Super-Fast Mini Thermometer

with max/min & hold function


- fast response probe, 5 to 6 second readings
- easy to use, pocket-sized thermometer

The Super-Fast Mini is a pocket-sized, water resistant (IP65) thermometer that measures temperature over the range of -39.9 to 149.9 °C with a 0.1 °C/°F resolution, turning on when the probe cover is removed allowing for swift, easy measurement.

The thermometer incorporates a fast response Ø2.5 x 73 mm stainless steel penetration probe with reduced tip and features a max/min and hold function.

Each unit is powered by a CR2032 lithium coin cell battery and supplied with a probe cover with integral pocket clip.

● **reduced tip for fast response**



| order code | description |
|------------|-----------------------------|
| 810-279 | Super-Fast Mini thermometer |



| specification | Super-Fast Mini |
|----------------|----------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-10 to 100 °C) |
| battery & life | 3 volt CR2032 - 5000 hours |
| display | 8 mm LCD |
| dimensions | Ø25 x 150 mm |
| weight | 20 grams |

ThermoPop® Thermometer

with 360° rotating display

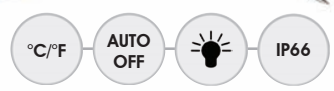
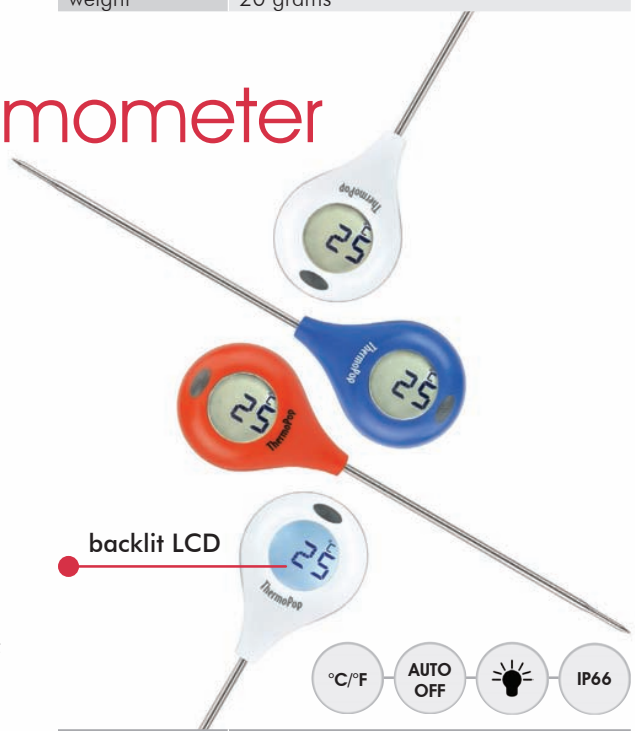
- backlit display & auto-power off function
- reduced tip, 5 to 6 second readings

The ThermoPop is a pocket-sized, waterproof (IP66) thermometer which incorporates a Ø3 x 114 mm stainless steel penetration probe with reduced tip.

The thermometer incorporates a unique 360° rotating display. Simply push a button to rotate the display in 90° increments, enabling the user to read the temperature in any position ie. left hand, right hand, vertical or horizontal.

The unit indicates temperature over the range of -50 to 300 °C with a 1 °C/°F resolution. Available in red, white or blue, each ThermoPop is supplied with a probe cover with integral pocket clip.

| order code | description |
|------------|-------------------------------|
| 810-301 | ThermoPop thermometer - white |
| 810-304 | ThermoPop thermometer - red |
| 810-305 | ThermoPop thermometer - blue |



| specification | ThermoPop |
|----------------|----------------------------|
| range | -50 to 300 °C |
| resolution | 1 °C/°F |
| accuracy | ±1 °C (-20 to 120 °C) |
| battery & life | 3 volt CR2032 - 5000 hours |
| display | 9 mm LCD |
| dimensions | 20 x 45 x 178 mm |
| weight | 30 grams |



Gourmet Thermometer

water resistant with folding probe

- pocket-sized instrument with hold function
- temperature range -39.9 to 149.9 °C
- includes CalCheck 0.0 °C function
- accuracy of ±0.5 °C



The water resistant Gourmet folding probe thermometer is an easy to use instrument, ideal for monitoring cooking, cooling and food holding temperatures as part of HACCP and health and safety procedures. The unit measures temperature over the range of -39.9 to 149.9 °C with a 0.1 °C/°F resolution and incorporates two push buttons, on/off and hold.

Each unit incorporates a stainless steel, food penetration probe (Ø3.5 x 110 mm) that conveniently folds back into the side of the instrument when not in use, rotating through 180°, allowing the user to transport the instrument safely. The Gourmet now has an improved battery life offering up to 5000 hours, powering off automatically after ten minutes. Available in six colours, ideal for different food types or preparation areas.



CalCheck function

The Gourmet features a CalCheck 0.0 °C function that allows the user to verify the accuracy of the thermometer at any time, giving confidence that measurements are accurate.



- raw meat
- cooked meat
- salad & fruit products
- vegetable products
- raw fish & shellfish
- bakery & dairy products

optional accessories

- **new** stainless steel wall bracket (832-002)
- protective PVC wallet with belt strap, ideal for transporting and protecting your thermometer against accidental damage (830-110)



| order code | description |
|------------|------------------------------|
| 810-730 | Gourmet thermometer - white |
| 810-732 | Gourmet thermometer - yellow |
| 810-733 | Gourmet thermometer - green |
| 810-734 | Gourmet thermometer - red |
| 810-735 | Gourmet thermometer - blue |
| 810-736 | Gourmet thermometer - brown |
| 830-110 | protective wallet |
| 830-001 | zip pouch |
| 832-002 | s/steel wall bracket |

| specification | Gourmet |
|---------------|---------------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-39.9 to 124.9 °C) |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 5000 hours |
| sensor type | thermistor |
| display | 16 mm LCD |
| dimensions | 20 x 52 x 155 mm |
| weight | 83 grams |



Fridge or Freezer Thermometers

spirit-filled & bi-metal dial

Ø52 mm dial thermometer

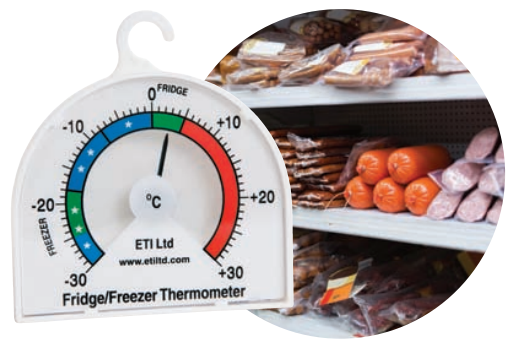


This easy to read fridge/freezer thermometer has a Ø52 mm dial. The thermometer indicates temperature over the range of -30 to 30 °C in 1 °C divisions.

The unit incorporates colour-coded zones for ease of reading. The fridge/freezer thermometer is housed in an ABS case that incorporates a plastic hook to hang from a shelf.

| order code | description |
|------------|-------------------------|
| 800-100 | Ø52 mm dial thermometer |
| 800-101 | Ø52 mm dial - box of 20 |

Ø70 mm dial thermometer



This fridge/freezer thermometer has a Ø70 mm dial. The thermometer indicates temperature over the range of -30 to 30 °C in 1 °C divisions. The unit incorporates colour-coded zones for ease of reading.

The fridge/freezer thermometer is housed in an ABS case measuring 60 x 70 mm. The thermometer can be free-standing or hung from a shelf.

| order code | description |
|------------|-------------------------|
| 800-000 | Ø70 mm dial thermometer |
| 800-001 | Ø70 mm dial - box of 10 |

FoodSafe Fridge Thermometer

This easy to read FoodSafe fridge thermometer is ideal for domestic or commercial use, as it is reliable, robust and hygienic.

The unit indicates temperature over the range of -25 to 40 °C with an accuracy of ±1 °C over the range of -5 to 20 °C, 2 °C thereafter.

Each FoodSafe measures Ø25 x 150 mm and is supplied with a stainless steel hook for hanging.



| order code | description |
|------------|----------------------|
| 803-900 | FoodSafe thermometer |

Ø50 mm dial thermometer



This stainless steel, fridge/freezer thermometer has a Ø50 mm dial. The thermometer indicates temperature over the range of -30 to 30 °C in 1 °C divisions.

The colour-coded area indicates when the thermometer is at the correct temperature for a fridge or freezer. The housing measures 60 x 70 mm and can be free-standing or hung from a shelf.

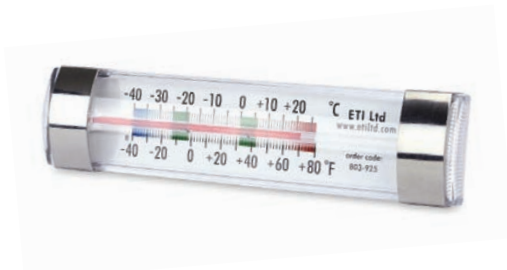
| order code | description |
|------------|-------------------------|
| 800-923 | Ø50 mm dial thermometer |



Fridge or Freezer Thermometers

spirit-filled with colour-coded zones

clear spirit-filled thermometer



This spirit-filled fridge/freezer thermometer is encased in a clear ABS housing (20 x 30 x 122 mm). The thermometer's colour-coded zones indicate temperature over the range of -40 to 20 °C and -40 to 80 °F with a 1 °C resolution.

The unit is designed to be hung from a shelf in a fridge, freezer or cold cabinet, alternatively it could be wall-mounted (*brackets supplied*). Each unit is sold singly or in boxes of ten.

| order code | description |
|------------|---------------------------------|
| 803-925 | clear spirit-filled thermometer |
| 803-930 | clear spirit-filled - box of 10 |

spirit-filled thermometers



These spirit-filled fridge/freezer thermometers feature clearly marked colour-coded zones for ease of reading.

The horizontal thermometer indicates temperature over the range of -30 to 40 °C in 1 °C divisions. The ABS housing measures 53 x 130 mm.

The vertical thermometer indicates temperature over the range of -30 to 40 °C in 1 °C divisions. The ABS case measures 24 x 150 mm.



| order code | description |
|------------|--------------------------------------|
| 803-000 | vertical spirit-filled thermometer |
| 803-050 | horizontal spirit-filled thermometer |

Digital Fridge Thermometer

with food safety zone indicator

- energy saving battery feature
- water resistant to IP65

This water resistant fridge thermometer incorporates a large and clear digital display that indicates temperature over the range of -9.9 to 49.9 °C with a 0.1 °C resolution.

The thermometer features a unique food safety zone icon '❄' in the display that indicates when the temperature is outside the range of 0 to 8 °C.

The fridge thermometer's energy saving feature turns the unit off when deprived of light, maximising battery life. The unit is powered by a single CR2032 battery with a life expectancy of five years.

The unit is housed in an ABS case that measures 18 x 42 x 71 mm and can be free-standing or hung from a shelf.

| order code | description |
|------------|----------------------------|
| 810-241 | digital fridge thermometer |



| specification | digital fridge |
|---------------|---------------------------------|
| range | -9.9 to 49.9 °C |
| resolution | 0.1 °C |
| accuracy | ±1 °C |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 10000 hours |
| display | custom LCD |
| dimensions | 18 x 42 x 71 mm |
| weight | 36 grams |



Fridge or Freezer Thermometer

with internal sensor & external temperature probe

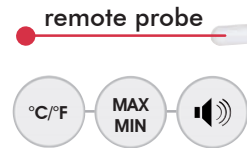


- programmable high/low audible alarm
- records the max/min temperatures

This max/min and alarm fridge or freezer thermometer indicates temperature over the range of -49.9 to 69.9 °C with a resolution of 0.1 °C/°F and an accuracy of ±1 °C.

The thermometer features a clear LCD display, max/min memory function to record the highest and lowest temperatures and a high/low programmable audible alarm. The unit incorporates two temperature sensors, a remote water resistant probe with one metre PVC lead for the appliance temperature and an internal sensor for the room temperature.

The remote probe can be mounted onto the internal wall of the fridge using the suction pad or mounting bracket supplied. The thermometer is housed in a durable ABS case and incorporates a foot-stand for shelf mounting.



| specification | digital fridge/freezer |
|---------------|---------------------------------|
| range | -49.9 to 69.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 3000 hours |
| display | custom LCD |
| dimensions | 16 x 50 x 82 mm |
| weight | 50 grams |

| order code | description |
|------------|------------------------------------|
| 810-225 | digital fridge/freezer thermometer |

Fridge or Freezer Thermometer

with optional UKAS Certificate of Calibration

- programmable high/low audible alarm
- records the max/min temperatures

This fridge or freezer thermometer features a clear LCD display, max/min, audible alarm and incorporates two temperature sensors; a remote water resistant probe with one metre PVC lead for the appliance temperature and an internal sensor for the room temperature.

The remote probe can be mounted onto the internal wall of the fridge using the suction pad or mounting bracket supplied. The thermometer is housed in a durable ABS case and incorporates a foot-stand for shelf mounting.

An optional two-point UKAS Certificate of Calibration is available. Each certificate indicates deviations from standards at -18 and 0 °C.



| specification | digital fridge/freezer |
|----------------|---------------------------|
| range | -49.9 to 69.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery & life | 1.5 volt AAA - 5000 hours |
| display | custom LCD |
| dimensions | 15 x 52 x 73 mm |
| weight | 55 grams |

| order code | description |
|------------|-------------------------------|
| 810-210 | fridge/freezer thermometer |
| 891-210 | 810-210 with UKAS certificate |

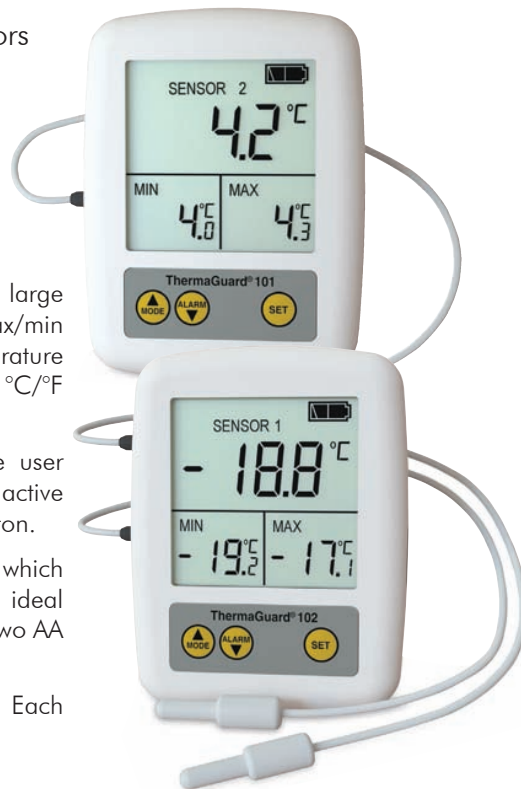
UKAS calibration applies to remote probe only



ThermaGuard®

high accuracy fridge/freezer thermometers

- two models available - single or dual external sensors
- optional UKAS Calibration Certificate available
- programmable high/low audible alarm
- records the max/min temperatures



These high accuracy fridge or freezer thermometers feature a large LCD display, which simultaneously display the current and max/min recorded temperatures. The ThermaGuard measures temperature over the range of -39.9 to 49.9 °C (external sensor) with 0.1 °C/°F (switchable) with an accuracy of ±0.4 °C.

Both units feature programmable audible alarms allowing the user to preset high and low temperature limits. When the alarm is active the LCD will flash. The alarm can be silenced by pressing any button.

Each ThermaGuard is housed in a splashproof IP54 ABS case, which includes the 'Biomaster' additive that reduces bacterial growth, ideal for monitoring chilled and frozen foods. Each unit is powered by two AA batteries with a battery life expectancy of in excess of three years.

An optional two-point UKAS Certificate of Calibration is available. Each certificate indicates deviations from standards at -18 and 0 °C.

two models available

The ThermaGuard 101 incorporates two temperature sensors; a remote water resistant probe with a one metre PVC lead for monitoring the appliance temperature and an internal sensor to monitor room temperature. The ThermaGuard 102 incorporates two remote water resistant probes, both with one metre PVC leads for monitoring dual appliances. Each remote probe can be mounted onto the internal wall of the fridge using the ABS plastic probe mounting bracket kit supplied.

CalCheck function

Both ThermaGuard models feature a CalCheck 0.0 °C (±0.1 °C) function that allows the user to verify the accuracy of the thermometer at any time, giving confidence that measurements are accurate.



FREE wall bracket included

Each ThermaGuard is supplied with a plastic wall bracket that incorporates a built-in foot stand, hook for hanging and screw thread for tripod mounting, allowing users to store or position the unit safely, securely and protect against accidental damage.



| specification | ThermaGuard |
|---|---|
| range - internal | -19.9 to 49.9 °C (101 model only) |
| range - external | -39.9 to 49.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.4 °C |
| battery | 2 x 1.5 volt AA |
| battery life | 25000 hours (normal use, without alarm) |
| sensor type | thermistor |
| display | custom LCD |
| dimensions | 29 x 73 x 96 mm |
| weight | 165 grams |
| <i>optional UKAS Certificate of Calibration available</i> | |

| order code | description |
|------------|--------------------------------|
| 226-511 | ThermaGuard 101 |
| 226-521 | ThermaGuard 101 with UKAS Cert |
| 226-512 | ThermaGuard 102 |
| 226-522 | ThermaGuard 102 with UKAS Cert |

UKAS Calibration Certificate applies to remote probe(s) only



Cooking Dial Thermometers

ideal for general kitchen use

Ø20 mm mini poultry thermometer



Insert the thermometer into the thickest part of the chicken or turkey (between the leg and breast) before putting into the oven. The poultry will be ready when the dial reaches the green area.

The thermometer incorporates a Ø20 mm dial with a 55 mm stainless steel probe. Economically priced, these thermometers are an ideal customer giveaway to encourage the sales of poultry.

| order code | description |
|------------|--------------------------|
| 800-850 | mini poultry thermometer |

Ø50 mm frying thermometer



This frying thermometer incorporates a Ø50 mm dial and a pointed, stainless steel Ø4 x 150 mm probe. The frying thermometer indicates temperature over the range of 0 to 300 °C in 10 °C divisions.

Simply insert the thermometer stem into the oil for the most accurate temperature reading. The dial is clearly marked for meat, poultry, fish and chips. Each unit is supplied with a stainless steel probe clip.

| order code | description |
|------------|--------------------|
| 800-805 | frying thermometer |

Ø45 mm meat dial thermometer



The meat thermometer incorporates a Ø45 mm dial with a Ø4 x 105 mm stainless steel pointed probe. The unit indicates temperature over the range of 0 to 120 °C in 1 °C divisions.

For accurate temperature measurement, insert the unit into the thickest part of the meat or poultry. The dial is clearly marked for beef, lamb, veal, pork and poultry.

| order code | description |
|------------|------------------------------|
| 800-804 | Ø45 mm meat dial thermometer |

Ø60 mm meat dial thermometer



This meat dial thermometer features a large Ø60 mm dial with a Ø5 x 102 mm stainless steel pointed probe. The unit indicates temperature over the range of 20 to 100 °C in 2 °C divisions.

For accurate temperature measurement, insert the unit into the thickest part of the meat or poultry. The dial incorporates colour-coded markers for beef, lamb, pork and poultry for quick and easy reading.

| order code | description |
|------------|------------------------------|
| 800-884 | Ø60 mm meat dial thermometer |

Oven Thermometers

easy to read bi-metal

Ø50 mm dial oven thermometer



This stainless steel oven thermometer features a clear Ø50 mm dial with colour-coded zones. The green marker indicates the minimum temperature that commercial heated display units should be kept at. The oven thermometer indicates temperature over the range of 50 to 300 °C in 10 °C divisions. The case measures 40 x 60 x 70 mm.

The unit can be free-standing or hung from a shelf and should be positioned in the middle of the oven for the most accurate temperature reading.

| order code | description |
|------------|------------------------------|
| 800-931 | Ø50 mm dial oven thermometer |

Ø55 mm dial oven thermometer



This stainless steel oven thermometer features a clear Ø55 mm dial with colour-coded zones. The green marker indicates the minimum temperature that commercial hot food display units should be kept at. The oven thermometer indicates temperature over the range of 0 to 300 °C in 10 °C divisions. The case measures 43 x 66 x 80 mm.

The thermometer can be free-standing or hung from a shelf and should be positioned in the middle of the oven for the most accurate temperature reading.

| order code | description |
|------------|------------------------------|
| 800-809 | Ø55 mm dial oven thermometer |

Digital Timer

oven & cooking thermometer

This combined clock, countdown timer and thermometer displays both the actual and the alarm temperature over the range of 0 to 300 °C and simultaneously the countdown or the actual time.

The timer will count down or up from/to 23 hours, 59 minutes and 59 seconds and the real time clock will display the time in either a 12 or 24 hour format.

The unit features an audible high alarm that can be set from the simple to use seven-button keypad. The alarm temperature is continuously displayed. The unit is designed to sit on a worktop or can be attached to an appliance via the magnetic pads at the rear of the instrument.

The thermometer is supplied with a high temperature probe and a one metre stainless steel braided lead.

The probe has an insertion length of 150 mm (Ø4mm) incorporating a reduced diameter tip for faster response.

| order code | description |
|------------|--------------------------|
| 810-060 | oven thermometer & timer |
| 810-061 | replacement probe |



| specification | oven thermometer & timer |
|----------------|-------------------------------|
| range | 0 to 300 °C |
| resolution | 1 °C/°F |
| accuracy | ±1 °C (0 to 130 °C) |
| battery & life | 2 x 1.5 volt AAA - 5000 hours |
| sensor type | thermistor |
| display | triple custom LCD |
| dimensions | 18 x 73 x 125 mm |
| weight | 128 grams |

DishTemp[®] dishwasher thermometer

The DishTemp thermometer simulates a plate as it's cleaned and sanitised in a commercial dishwasher, accurately recording the maximum surface temperature at the touch of a single button. The DishTemp eliminates the need for costly and inaccurate test strips and stem thermometers that do not stay in place or record temperature at the plate surface.

Built to survive daily use in professional kitchens, the DishTemp thermometer indicates temperature over the range of 0 to 90 °C with a resolution of 0.1 °C/°F and an accuracy of ±0.5 °C.

Incorporating a durable water-tight seal, the DishTemp is waterproof to IP66 and is supplied complete with a traceable certificate of calibration.

| order code | description |
|------------|----------------------|
| 810-280 | DishTemp thermometer |



| specification | DishTemp |
|---------------|---------------------------------|
| range | 0 to 90 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 5000 hours |
| display | custom LCD |
| dimensions | 14 x Ø127 mm |
| weight | 120 grams |

FREE traceable certificate of calibration included

ChefAlarm[®] Thermometer & Timer with interchangeable NTC thermistor probes

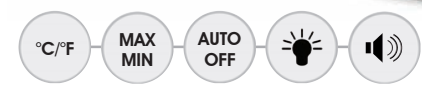
The ChefAlarm is a professional cooking thermometer and timer which displays the countdown/up time, current temperature and simultaneously displays both the high/low alarms and max/min temperatures.

The timer is fully programmable, allowing the user to set the countdown/up time to/from 99 hours and 59 minutes. The unit incorporates a large, easy to read LCD display with user selectable backlight and a loud audible alarm with adjustable volume to 92dB - ideal for busy professional kitchens.

The ChefAlarm also includes a calibration function allowing the user to fine-tune the accuracy of the thermometer (±2.2 °C). The unit is housed in a water resistant casing and is designed to either sit on a worktop or attach to an appliance using the magnetic pads at the rear of the instrument.

Available in three colours, each unit is supplied in a zip wallet complete with a penetration probe (810-071) and probe holder clip. See opposite page for full probe specification.

| order code | description |
|------------|-------------------|
| 810-041 | ChefAlarm - white |
| 810-044 | ChefAlarm - red |
| 810-045 | ChefAlarm - blue |



| specification | ChefAlarm |
|----------------|-------------------------------|
| range | -50 to 300 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C (-20 to 120 °C) |
| battery & life | 2 x 1.5 volt AAA - 5000 hours |
| alarm volume | <92dB |
| sensor type | thermistor |
| display | custom LCD |
| dimensions | 19 x 70 x 152 mm |
| weight | 175 grams |



DOT Thermometer

Digital Oven Thermometer

The DOT is an easy to use cooking thermometer that displays both the current temperature and alarm set temperature. Simply set the desired temperature using the buttons, insert the probe into your food, the DOT will beep, and the display will flash when the temperature is reached.

The DOT incorporates a large LCD display and loud 70dB audible alarm making it ideal for use in busy, professional kitchens.

Housed in a durable, water resistant case, the DOT is designed to either sit on a worktop using the fold out stand, or attach to an appliance using the magnetic pads at the rear of the instrument.

Each unit is supplied with a 114 mm penetration probe (810-078) with a 1.2 metre stainless steel braided lead. See below for full probe specification and alternative probes.



Braided lead allows the probe to remain in the food during cooking

| specification | Digital Oven Thermometer |
|----------------|-------------------------------|
| range | -50 to 300 °C |
| resolution | 1 °C/°F |
| accuracy | ±1 °C (-20 to 120 °C) |
| battery & life | 2 x 1.5 volt AAA - 5000 hours |
| alarm volume | 70dB |
| sensor type | thermistor |
| display | custom LCD |
| dimensions | 20 x Ø80 mm |
| weight | 95 grams |

| order code | description |
|------------|--------------------------------|
| 810-031 | DOT - digital oven thermometer |

DOT & ChefAlarm® Probes

NTC thermistor probes with 2.5 mm jack plug

| | | order code |
|--|---|--------------------------------------|
| <p>penetration probe</p> <p>Ø3 x 150 mm</p> | <p>This probe features a fast response, stainless steel reduced tip, which is moisture-resistant and ideal for continuous monitoring in ovens or similar. Supplied with a 1.2 metre stainless steel braided lead.</p> <ul style="list-style-type: none"> probe temperature range -50 to 300 °C | 810-071 |
| <p>penetration probe</p> <p>Ø3.5 x 114 or 305 mm</p> | <p>This stainless steel, reduced tip probe is moisture-resistant and ideal for continuous monitoring in ovens or similar. Supplied with a 1.2 metre stainless steel braided lead.</p> <ul style="list-style-type: none"> probe temperature range -50 to 300 °C | 810-078 (114 mm) 810-075 (305 mm) |
| <p>oven probe & clip</p> <p>grate clip → Ø3.5 x 50 mm</p> | <p>This probe is ideal for monitoring ambient air temperatures. Using the clip, simply attach to an oven rack or shelf. Supplied with a 1.2 metre stainless steel braided lead.</p> <ul style="list-style-type: none"> response time less than 10 seconds probe temperature range -50 to 300 °C | 810-076 830-530 (spare clip) |
| <p>mini needle probe</p> <p>Ø1.6 x 90 mm</p> | <p>This miniature, stainless steel probe is moisture-resistant and ideal for Sous Vide cooking. Supplied with a 1.2 metre silicone lead.</p> <ul style="list-style-type: none"> response time less than 5 seconds. probe temperature range -50 to 300 °C. | 810-072 |

Please note: the above probes are suitable for use with the DOT and ChefAlarm thermometers only



Milk Frothing Thermometers

bi-metal dial with jug mounting probe clip



- easy to read dial with colour-coded zones
- includes FREE calibration spanner

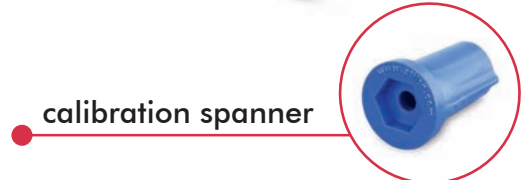
These barista milk frothing thermometers incorporate a °C/°F dial with colour-coded zones that make them fast and simple to use.

Measuring over the range of -10 to 110 °C, the thermometers are available in various probe lengths and dial sizes. Each thermometer is supplied with a stainless steel jug mounting probe clip, calibration spanner and protective probe cover.

Also available as a pack of three colour-coded milk dial thermometers (red, green and blue) for barista's to easily identify different types of milk used in stainless steel jugs, to avoid cross-contamination.



| order code | description |
|------------|------------------------------------|
| 800-810 | Ø25 x 130 mm milk dial |
| 800-820 | Ø45 x 130 mm milk dial |
| 800-800 | Ø45 x 175 mm milk dial |
| 800-830 | Ø45 x 175 mm milk dial - pack of 3 |



Kitchen Thermometers

for confectionery, frying, preserves & jam

cook's stainless steel thermometer

This stainless steel thermometer indicates temperature over the range of 40 to 200 °C and 100 to 400 °F in 2 °C/°F divisions.

The thermometer's scale is clearly marked for hard crack, soft crack, hard ball, soft ball, thread, jam, caramel, sterilising and deep fry.

The thermometer's stainless steel casing incorporates a retaining clip and measures 50 x 240 mm plus a 65 mm plastic handle.

Simply insert the thermometer into the liquid or food being measured and read the temperature.



| order code | description |
|------------|--------------------|
| 800-806 | cook's thermometer |

sugar & jam brass thermometer

The traditional brass thermometer indicates temperature over the range of 40 to 200 °C in 2 °C divisions. The thermometer's brass casing measures 47 x 200 mm plus a 40 mm copper handle.

The thermometer's scale is clearly marked for caramel, crack, hard ball, soft ball, jam and sterilise.



| order code | description |
|------------|-------------------------|
| 800-808 | brass sugar thermometer |



Digital Timers

the essential tool for every kitchen

countdown/up timer



This countdown/up timer incorporates a louder than average 80 decibel audible alarm. The timer is fully programmable, allowing the user to set the time up to 99 minutes and 59 seconds or 19 hours and 59 minutes.

The unit is powered by one AAA battery and is designed to sit on a worktop or be attached to an appliance via the magnetic pad at the rear of the instrument.

| order code | description |
|------------|--------------------|
| 806-105 | countdown/up timer |

water resistant countdown timer

This countdown timer offers water resistance to IP65 along with a large digital display and audible alarm with variable volume control, allowing the user to set up to a maximum volume of 95 decibels.

The keypad allows the user to set times up to 99 hours, 99 minutes and 99 seconds. The timer incorporates magnetic pads and a keyhole slot for wall-mounting or attaching to an appliance. The unit measures 22 x 89 x 130 mm and is powered by two AAA batteries.



| order code | description |
|------------|---------------------------------|
| 806-150 | water resistant countdown timer |

TimeStick® one-handed timer



The TimeStick is a handy-sized, portable timer with a water resistant numeric keypad. Simply hang it around your neck, slip it in your pocket or mount on a magnetic surface. The countdown bar graph gives you a quick indicator of remaining time. When the countdown alarm sounds, the count up timer starts to show how much time has elapsed since setting the alarm.

The unit also features a 12 or 24 hour format and a keypad lock to prevent accidental key entry. The unit is powered by a CR2032 battery.

| order code | description |
|------------|-------------------------|
| 806-181 | TimeStick timer - white |
| 806-184 | TimeStick timer - red |
| 806-185 | TimeStick timer - blue |

Extra BIG & LOUD timer



The Extra Big & Loud timer features a rugged water resistant housing and variable volume control, allowing the user to set up to a maximum volume of 110 decibels - ideal in busy professional kitchens.

When a countdown alarm sounds, the count up timer starts so you will see how much time elapses after your alarm. The memory keeps your last countdown setting. The timer incorporates two magnetic pads and a flip-out stand. The unit measures 28 x 90 x 130 mm and is powered by a 9 volt PP3 battery.

| order code | description |
|------------|------------------------|
| 806-160 | extra big & loud timer |

Catering Thermometer accessories



stainless steel wall brackets

These handy, stainless steel wall brackets allow users to store specific thermometers safely when not in use (screws not supplied).



| order code | description |
|------------|---------------------------------------|
| 832-002 | Thermapen s/s wall bracket |
| 832-015 | WP Thermo series s/s wall bracket |
| 832-050 | Therma series s/s wall bracket & boot |
| 832-757 | DTR/PTR s/s wall bracket |

temperature log book



In commercial kitchens each fridge, freezer or cold cabinet should have its own temperature log/record book. The log book has a wipe clean cover and contains six months' supply of easy to use record sheets.

Each log book allows the user to enter three readings per day consisting of the temperature, time and initials of the person responsible for recording the data.

| order code | description |
|------------|---------------------------|
| 831-100 | A5 temperature log book |
| 831-105 | A5 log books - pack of 10 |

protective silicone boots

Protect your instruments against accidental damage by fitting them with a protective boot. We offer a wide range of protective silicone boots tailored to fit most of our instruments. Selected boots are available in red, yellow, blue, green, black and white.



| order code | description |
|------------|------------------------------|
| 830-221 | Therma series - white* |
| 830-231 | WP Thermo series - white* |
| 830-258 | WP Thermo series inc. magnet |
| 830-260 | Thermapen 3 |
| 830-460 | Thermapen 4 |
| 830-270 | ThermaData Logger |
| 830-280 | ThermaLite |
| 830-431 | TempTest - white* |
| 830-210 | BlueTherm One/ThermaQ Blue |
| 830-750 | BlueTherm Probe |

*for other colours see page 9 for TempTest, page 14 for Thermo Series or page 38 for Waterproof Thermo Series

waterproof pouches

These fully waterproof protective pouches are manufactured from flexible TPU that can be used to protect a variety of instruments in damp or wet environments. Each pouch measures 115 x 190 mm.

The 830-400 is supplied with an integral lead, thermocouple plug and socket. For more information visit our website or contact our sales office.



| order code | description |
|------------|-------------------------------|
| 830-350 | TPU pouch |
| 830-400 | TPU pouch & thermocouple lead |



Anti-Bacterial Wipes

Anti-Bacterial wipes are ideal for reducing harmful bacteria in the food industry. Each wipe is pre-saturated with a broad spectrum anti-bacterial solution that is odourless and does not taint food. The wipes are effective against a wide range of bacteria including listeria and salmonella.

sachets of micro-sized Probe Wipes



These convenient, single sachet, white, anti-bacterial thermometer Probe Wipes are safe and easy to use.

Each micro-sized wipe measures 60 x 30 mm and is designed for one-time use. These single sachet wipes are sold in a box of 100 sachets.



| order code | description |
|------------|-------------------------------|
| 836-220 | box of 100 single Probe Wipes |

mini tubs of 70 QAC free Probe Wipes



This mini tub is designed to fit into the user's pocket and incorporates an easy to dispense flip-top lid. The mini tub contains 70 blue QAC free, anti-bacterial Probe Wipes.

Each Probe Wipe measures 70 x 130 mm and is supplied in cartons of ten tubs.

| order code | description |
|------------|-----------------------|
| 836-020 | carton x 10 mini tubs |

tubs of 180 QAC free Probe Wipes



Each tub contains 180 blue QAC free, anti-bacterial Probe Wipes that measure 130 x 130 mm.

The tubs are supplied in cartons of six tubs of 180 Probe Wipes.

An optional wall bracket is available, enabling a single tub of wipes to be conveniently positioned.

| order code | description |
|------------|-------------------------------------|
| 836-050 | carton x 6 tubs of Probe Wipes |
| 832-305 | s/steel wall bracket for single tub |





Food Processing

waterproof thermometers & temperature recorders



Selecting the correct thermometer for a food processing application is, by definition, very important to achieve the maximum accuracy and repeatability of the temperature.

The selection criteria for a digital thermometer should include:

- measurement range
- resolution of the reading 1 °C, 0.1 °C or 0.01 °C
- desired accuracy
- response time
- additional features such as max/min, hold & backlight

The following pages offer a selection of thermometers that are suitable for food processing applications, i.e. heavy duty and water resistant or waterproof instruments. Many of our thermometers are suitable for use as part of HACCP.

what is HACCP?

Hazard Analysis and Critical Control Point is a system that was devised to provide quality assurance throughout the food industry by establishing critical monitoring (control) points. It is a legal requirement for food businesses to have a suitable HACCP plan in place.

The seven principles of HACCP:

1. **Conduct a hazard analysis** - identify the food safety hazards associated with your business, e.g. multiplication of harmful bacteria
2. **Determine the critical control points** - if there is no later stage in the process that will then make the food safe, e.g. cooking, then it is a CCP.
3. **Establish critical limits** - temperature limits, below or above which, food will not be acceptable.
4. **Monitor and control the CCPs** - if it cannot be monitored or measured, it is not a CCP. You cannot monitor by placing a hand in the fridge or looking at food to see if it is at the right temperature.
5. **Establish correct actions** - if a critical limit is exceeded, you must have a procedure in place to take a corrective action.
6. **Establish verification procedures** - how do you know that your temperatures are OK, unless you regularly calibrate your thermometer? This is just one example of verification.
7. **Documenting records and procedures** - you will find it difficult to demonstrate your controls, unless you keep records of your actions.

Conscientious implementation of HACCP principles by plant operators demonstrates their commitment to food safety; improves employee awareness of their role in protecting consumers and emphasises management's responsibility for safe production.



Therma 20/22 Plus Thermometers

in a robust IP66/67 waterproof case

- Therma 22 Plus accepts type T thermocouple & thermistor probes
- FREE traceable certificate of calibration
- wide range of interchangeable probes

The Therma 20 Plus waterproof thermometer offers IP66/67 protection and is housed in a robust waterproof white ABS case. The thermometer utilises state of the art electronic circuitry, designed for reliability and ease of use and can be submerged or washed under a running tap - ideal for food processing applications where cleaning is paramount.

The Therma 20 Plus measures temperature over the range of -39.9 to 149.9 °C with a 0.1 °C resolution.

The thermometer features a large, easy to read, LCD display with max/min, °C/°F, hold, open circuit, low battery indication and a user selectable backlight. The unit also incorporates an auto-power off facility that automatically turns the instrument off after ten minutes, maximising battery life.

The instrument is housed in an ergonomic, ABS case that includes 'Biomaster' additive which reduces bacterial growth. Each unit has an integrated rubber seal to ensure complete water resistance and help reduce the possibility of damage in harsh environments.

The Therma 20 Plus incorporates an easy to use waterproof Lumberg screw-locking type connector, allowing a wide range of interchangeable thermistor probes to be used. We offer an extensive range of probes, see pages 68 and 69 for details.

Therma 22 Plus thermometer

The Therma 22 Plus incorporates all the features of a Therma 20 Plus, but also accepts type T thermocouple probes giving a faster response time and wider temperature range of -199.9 to 400 °C. See page 65 for our range of type T thermocouple probes.



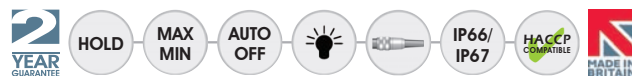
optional accessory

- thermistor test caps with UKAS Certificate of Calibration - see page 99 for details



| order code | description |
|------------|-------------------|
| 232-040 | Therma 20 Plus |
| 232-041 | Therma 22 Plus |
| 174-266 | penetration probe |

the Therma 20/22 Plus are exclusive of probe



| specification | Therma 20 Plus | Therma 22 Plus |
|------------------------------|----------------------------------|-----------------------|
| range - type T thermocouple | n/a | -199.9 to 400 °C |
| range - thermistor | -39.9 to 149.9 °C | |
| resolution | 0.1 °C to 300 °C thereafter 1 °C | |
| instrument only accuracy | ±0.2 °C | |
| system accuracy - type T t/c | ±0.5 °C (-50 to 150 °C) | |
| system accuracy - thermistor | ±0.4 °C (-25 to 110 °C) | |
| battery | 3 x 1.5 volt AAA | |
| battery life | minimum 5 years (10000 hours) | |
| sensor type | thermistor | thermistor/type T t/c |
| display | 15 mm LCD | |
| dimensions | 32 x 71 x 141 mm | |
| weight | 220 grams | |

FREE traceable certificate of calibration included



ThermaCheck Plus Thermometer

in a robust IP66/67 waterproof case

- backlight, auto-power off, max/min & hold functions
- integrated rubber seal for durability
- minimum 5 years battery life
- 2 year guarantee

The ThermaCheck Plus is a waterproof, hand held thermistor thermometer which offers IP66/67 protection and is housed in a robust waterproof white ABS case. The thermometer utilises state of the art electronic circuitry, designed for reliability and ease of use and can be submerged or washed under a running tap - ideal for food processing applications where cleaning is paramount.

Measuring temperature over the range of -39.9 to 149.9 °C with a 0.1 °C resolution, the ThermaCheck Plus features a large, easy to read, LCD display with max/min, °C/°F, hold, open circuit, low battery indication and a user selectable backlight. The unit also incorporates an auto-power off facility that automatically turns the instrument off after ten minutes, maximising battery life.

The instrument is housed in an ergonomic, ABS case that includes 'Biomaster' additive which reduces bacterial growth. Each unit has an integrated rubber seal to ensure complete water resistance and help reduce the possibility of damage in harsh environments.

The ThermaCheck Plus is supplied complete with a permanently attached food penetration probe with a 130 mm stainless steel stem and one metre coiled PU lead.



optional accessories

- protective silicone boot, wide range of colours available - see below for details
- anti-bacterial wipes - see page 35



| order code | description |
|------------|-----------------------------------|
| 232-042 | ThermaCheck Plus |
| 830-231 | protective silicone boot - white |
| 830-232 | protective silicone boot - yellow |
| 830-233 | protective silicone boot - green |
| 830-234 | protective silicone boot - red |
| 830-235 | protective silicone boot - blue |
| 830-257 | protective silicone boot - black |
| 832-015 | stainless steel wall bracket |

| specification | ThermaCheck Plus |
|---------------|-------------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C |
| accuracy | ±0.4 °C (-25 to 110 °C) |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | thermistor |
| display | 15 mm LCD |
| dimensions | 32 x 71 x 141 mm |
| weight | 298 grams |

FREE traceable certificate of calibration included



ThermaQ[®] Thermometer

two channel type K thermocouple input

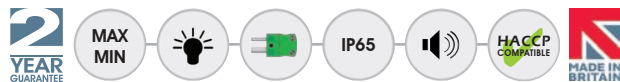
- audible alarm with variable volume control
- programmable high/low alarm

The ThermaQ thermometer allows the user to simultaneously use two type K thermocouple probes whilst displaying both current temperatures and the maximum and minimum recorded temperatures. This allows the user to monitor, for example, both an item of food and the oven temperature at the same time or monitor the rise and fall of temperatures across refrigeration units.

The thermometer measures temperature over the range of -99.9 to 299.9 °C with a 0.1 °C resolution or 300 to 1372 °C with a 1 °C resolution. The unit features a large, easy to read LCD display with °C/°F, T1, T2, max/min, open circuit, low battery indication, programmable high/low audible alarm and a user selectable backlight.

The instrument is housed in an ergonomic, ABS case that includes 'Biomaster' additive which reduces bacterial growth. An integrated rubber seal ensures complete water resistance and helps reduce the possibility of damage in harsh environments.

We offer an extensive range of interchangeable type K thermocouple probes for a variety of different applications, see below and pages 59 to 64.



| specification | ThermaQ |
|----------------|------------------------------------|
| range | -99.9 to 1372 °C |
| resolution | 0.1 °C to 299.9 °C thereafter 1 °C |
| accuracy | ±0.4 °C ±0.1 % of reading |
| battery & life | 3 x 1.5 volt AAA - 3000 hours |
| sensor type | K thermocouple |
| display | custom LCD |
| dimensions | 32 x 71 x 141 mm |
| weight | 230 grams |

FREE traceable certificate of calibration included

| order code | description |
|------------|----------------------------------|
| 231-050 | ThermaQ |
| 830-258 | protective silicone boot - black |
| 832-015 | stainless steel wall bracket |

the ThermaQ is exclusive of probes

| | | order code |
|---|---|--|
| <p>oven/air probe</p> <p style="text-align: center;">grate clip →</p> <p style="text-align: center;">Ø3.5 x 50 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 10 seconds • probe temperature range -50 to 350 °C | <p>133-441</p> <p>830-530 <i>(spare clip)</i></p> |
| <p>crocodile clip oven probe</p> <p style="text-align: center;">crocodile clip →</p> <p style="text-align: center;">Ø4 x 20 mm with 2000 mm lead</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -50 to 350 °C | <p>133-041</p> |
| <p>penetration probes</p> <p style="text-align: center;">(133-177)</p> <p style="text-align: center;">Ø4 x 225 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 10 seconds • probe temperature range -50 to 350 °C | <p>133-177 <i>(braided)</i></p> <p>133-178 <i>(armoured)</i></p> |



Saf-T-Log[®] Thermometer

paperless temperature recording



- displays date, time & user name with each reading
- automatically archives data & creates reports
- PASS/FAIL & corrective actions displayed
- holds up to 7 checklists

Measure, store, download and print HACCP reports. No more paper logs or complicated PDA's to train staff how to use! The Saf-T-Log is as easy to use as your current thermometer.

The Saf-T-Log includes Windows[®] software to create a list of up to 300 items that you routinely measure, 10 corrective actions, along with up to 25 users. Each item can include a high/low temperature limit that gives the user instant on-screen pass/fail feedback or yes/no on non-temperature items. A time delay feature can be added to each temperature item. Up to seven different checklists can be created at any one time, to be saved, emailed to other users and uploaded onto any Saf-T-Log.

Record up to 1000 readings by simply scrolling to the correct item and pressing record. Any 'fail' or 'no' answer, can prompt the selection of a corrective action. Once readings are taken they can be downloaded to a PC automatically when reconnected. The data is archived and a report generated automatically with no additional user input. The Saf-T-Log report is locked so the data logged cannot be tampered with.

Housed in a durable, IP66/67 waterproof case with a choice of interchangeable type K thermocouple probes, the Saf-T-Log can be used for a wide variety of applications. The thermometer includes a high contrast backlit display with an accuracy of $\pm 0.4^{\circ}\text{C}$ and a calibration trim function.



penetration probe
 $\varnothing 3.3 \times 130 \text{ mm}$ (123-160)

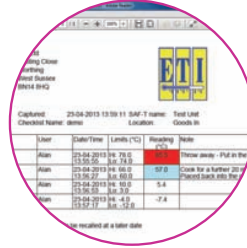


Custom Checklists

Simply create your own checklist of items, upload to the unit, attach the appropriate probe and store readings at the touch of a button.

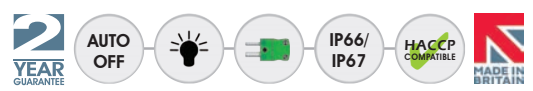
Corrective Actions

The user is prompted to select a corrective action if the reading is outside of the acceptable limit. Easy for staff to implement and use.



Report Generator

Reports are created automatically from the saved readings. Failed results are highlighted and notes or corrective actions included. Eliminates the need for paper logs!



| specification | Saf-T-Log |
|---|--|
| range | -100 to 1372 °C |
| resolution | 0.1 °C |
| accuracy | $\pm 0.4^{\circ}\text{C} \pm 0.1\%$ of reading |
| battery | 3 x 1.5 volt AAA |
| battery life | >2500 hours (without backlight) |
| sensor type | type K thermocouple |
| display | 12 mm LCD |
| dimensions | 32 x 71 x 141 mm |
| weight | 220 grams |
| <i>FREE traceable certificate of calibration included</i> | |

| order code | description |
|--|----------------------------------|
| 292-701 | Saf-T-Log |
| 123-160 | penetration probe |
| 830-231 | protective silicone boot - white |
| <i>the Saf-T-Log is exclusive of probe</i> | |



Data Temperature Recorder

checks deliveries are within programmable limits

- programmable limits for chilled, frozen & ambient foods
- print out with ACCEPT or REJECT message
- eliminates the possibilities of human error

The DTR (Data Temperature Recorder), printing thermometer has been specifically designed for use in the food industry with HACCP and health and safety procedures in mind. This printing thermometer is also a useful aid in the food industry where regular checks are required for fridges and freezers, providing a printed record of each temperature measurement.

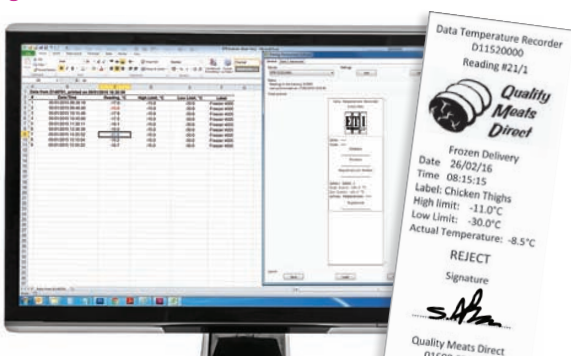
The print functions can be operated from the keypad on the DTR or via a button on the thermistor probe to provide hard copy evidence of whether a delivery can be accepted or rejected against programmable temperature limits.

The DTR printing thermometer features an easy to read, LCD display with low battery indication displaying the temperature over the range of -39.9 to 149.9 °C with a 0.1 °C/°F resolution and a high system accuracy of ±0.5 °C (-25 to 110 °C).

Programmable temperatures can be set i.e. chilled, frozen and ambient food temperatures by the user via the compatible PC software provided with the unit. The software also allows the user to personalise the printed ticket with a company name, address, contact details and logo - see example shown below.

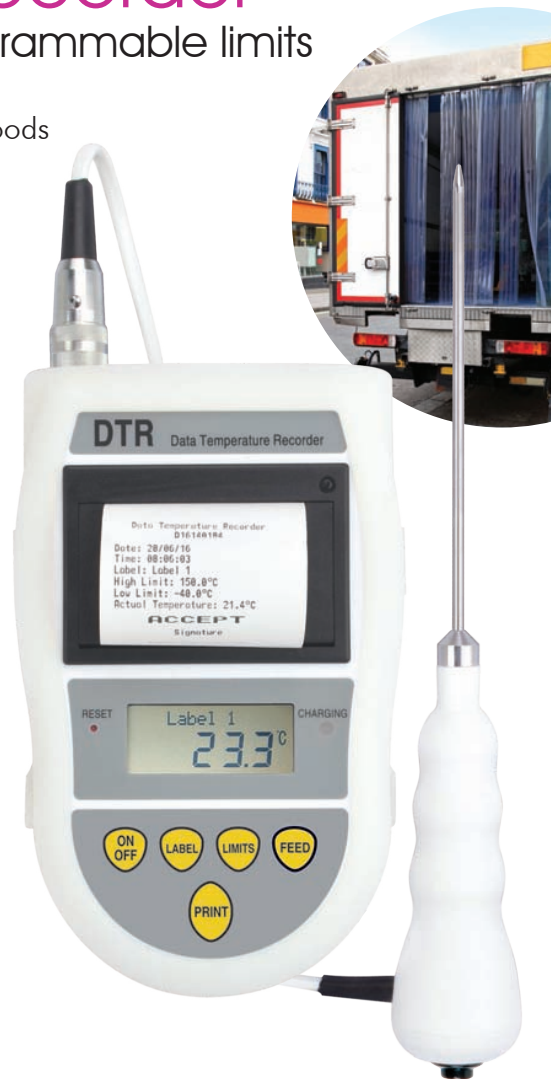
The instrument is housed in a robust ABS case and incorporates an easy to use Lumberg screw-locking type connector, allowing a wide range of interchangeable probes to be used. Each DTR is supplied with a battery charger, two rolls of paper, protective silicone boot and software, all supplied in a carrying case. We offer an extensive range of interchangeable thermistor probes, see pages 68 and 69 for full details.

upload your data to Microsoft® Excel



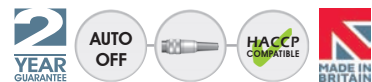
| order code | description |
|------------|--------------------------------|
| 226-270 | DTR printing thermometer |
| 174-170 | DTR switch penetration probe |
| 812-270 | additional paper roll - single |
| 832-757 | stainless steel wall bracket |

the DTR is exclusive of probe



switch penetration probe

Designed specifically for use with the DTR, this stainless steel probe is versatile and strong incorporating a heavy duty, ribbed handle and remote 'print' button, enabling the user to record temperatures and print whilst holding the probe.



| specification | Data Temperature Recorder |
|---------------|-----------------------------|
| range | -39.9 to 149.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.5 °C (-25 to 110 °C) |
| battery | Ni-MH 3.6 volt Rechargeable |
| battery life | approximately 500 prints |
| sensor type | thermistor |
| display | 10 mm LCD |
| dimensions | 54 x 110 x 183 mm |
| weight | 605 grams |

FREE traceable certificate of calibration included



CaterTemp® Plus Thermometer

robust, waterproof & salt resistant

- extruded aluminium case for superior durability
- supplied complete with food penetration probe
- waterproof case offering IP66/67 protection
- rubber bumper seals for impact resistance

The CaterTemp Plus hand held thermometer is housed in a robust extruded aluminium waterproof case, offering IP66/67 protection, with a white anti-bacterial/salt resistant powder coated finish. The instrument incorporates the latest microprocessor technology with improved durability, designed for reliability and ease of use in day-to-day catering and food processing applications.

The CaterTemp Plus thermometer measures temperature over the range of -49.9 to 299.9 °C with a 0.1 °C resolution. The instrument features a large, easy to read, LCD display with open circuit and low battery indication. The unit is powered by a 9 volt PP3 battery which gives the thermometer approximately 5000 hours continuous use.

The on/off button is conveniently located at the front of the instrument as is the display hold facility. The CaterTemp Plus thermometer incorporates a secure battery compartment with a waterproof cover.

Each CaterTemp Plus thermometer is supplied with a permanently attached, water resistant, heavy duty, food penetration probe with a Ø3.3 x 130 mm stainless steel stem and one metre PU coiled lead. The probe is both strong, versatile and suitable for a variety of applications including liquids, semi-solids and granular materials.

colour-coded rubber bumper seals

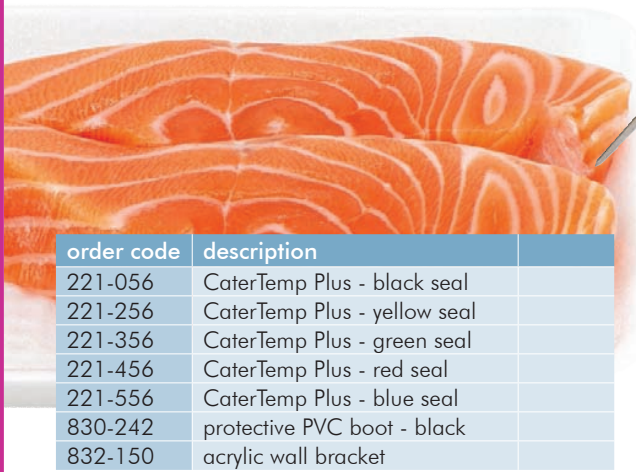
The CaterTemp Plus thermometer is available with colour-coded rubber bumper seals that can help avoid cross-contamination - see below

optional accessories

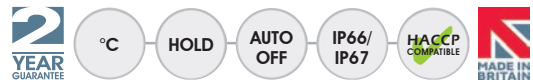
- acrylic wall bracket - screws *not supplied* (832-150)
- protective black PVC boot (830-242)
- anti-bacterial wipes - see page 35



● blue seal - ideal for raw fish & shellfish



| order code | description |
|------------|------------------------------|
| 221-056 | CaterTemp Plus - black seal |
| 221-256 | CaterTemp Plus - yellow seal |
| 221-356 | CaterTemp Plus - green seal |
| 221-456 | CaterTemp Plus - red seal |
| 221-556 | CaterTemp Plus - blue seal |
| 830-242 | protective PVC boot - black |
| 832-150 | acrylic wall bracket |



| specification | CaterTemp Plus |
|----------------|----------------------------------|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C |
| accuracy | ±0.4 °C ±1 digit |
| battery & life | 9 volt PP3 alkaline - 5000 hours |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 35 x 60 x 115 mm |
| weight | 244 grams |

FREE traceable certificate of calibration included



Therma Plus Thermometer

robust, waterproof & salt resistant



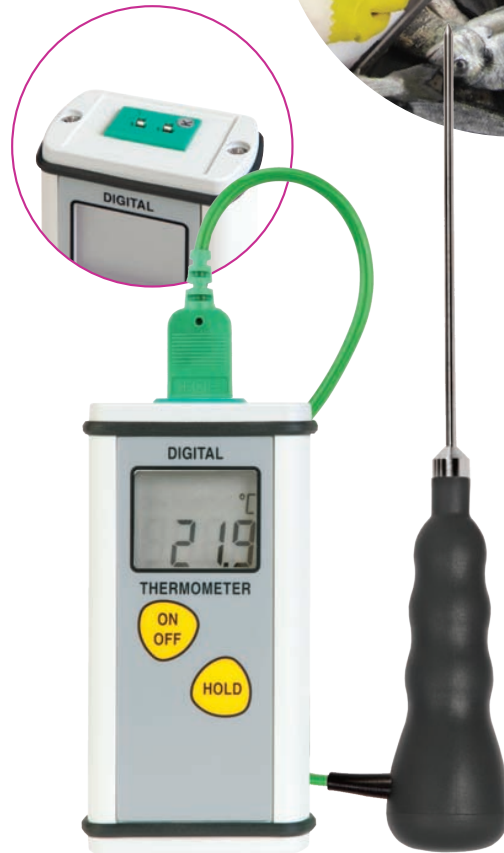
- extruded aluminium case for superior durability
- FREE traceable certificate of calibration
- interchangeable thermocouple probes
- 2 year guarantee

The Therma Plus hand held thermometer is housed in a robust extruded aluminium waterproof case, offering IP66/67 protection with a white anti-bacterial/salt resistant powder coated finish. The unit incorporates the latest microprocessor technology, designed for reliability and ease of use in routine day-to-day food processing and industrial applications.

The unit features a large, easy to read, LCD display with open circuit and low battery indication. The Therma Plus thermometer measures temperature over the range of -99.9 to 1372 °C, -99.9 to 299.9 °C with a 0.1 °C resolution, auto-ranging to 1 °C resolution over the range of 300 to 1372 °C.

The thermometer incorporates an auto-power off facility that automatically turns the instrument off after twenty minutes, maximising battery life. The on/off button is conveniently located at the front of the instrument as is the display facility. The secure battery compartment with a waterproof cover is located at the base of the instrument.

The Therma Plus is available with colour-coded rubber bumper seals, black, yellow, green, red or blue.



penetration probe
Ø3.3 x 130 mm (143-162)

choice of probes

Conveniently located at the top of the instrument is the thermocouple probe socket that allows a wide range of interchangeable, thermocouple type K probes to be connected to the instrument.

For our full range of thermocouple probes for the Therma Plus - see pages 59 to 64.



| order code | description |
|------------|-----------------------------|
| 221-071 | Therma Plus - black seal |
| 221-271 | Therma Plus - yellow seal |
| 221-371 | Therma Plus - green seal |
| 221-471 | Therma Plus - red seal |
| 221-571 | Therma Plus - blue seal |
| 143-162 | penetration probe |
| 830-242 | protective PVC boot - black |
| 832-150 | acrylic wall bracket |

the Therma Plus is exclusive of probe

optional accessories

- protective black PVC boot (830-242)
- acrylic wall bracket - (screws not supplied) (832-150)
- three-point temperature checkers - see page 98 for details



| specification | Therma Plus |
|----------------|----------------------------------|
| range | -99.9 to 1372 °C |
| resolution | 0.1/1 °C auto-ranging @ 299.9 °C |
| accuracy | ±0.4 °C ±0.1 % of reading |
| battery & life | 9 volt PP3 alkaline - 5000 hours |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 35 x 60 x 115 mm |
| weight | 194 grams |

FREE traceable certificate of calibration included





Industrial Thermometers

digital, printing, recording & dial

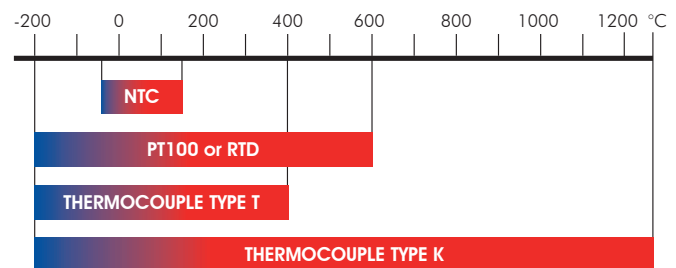


Selecting the correct thermometer for an application is by definition very important, to achieve the maximum accuracy and repeatability of the temperature reading.

The selection criteria for a digital thermometer should include:

- measurement range
- resolution of the reading 1 °C, 0.1 °C or 0.01 °C
- desired accuracy
- response time
- additional features such as max/min, hold & backlight

Our digital thermometers utilise one of three types of temperature sensors: thermocouple, NTC thermistor and resistance temperature detectors (PT100 or RTD). Thermocouple thermometers and probes are fast to respond to changes in temperature, they also have a wide measurement range. Resistance temperature detector and NTC thermistor thermometers and probes are slower to respond to changes in temperature, but generally more accurate, although thermistor probes have a limited measurement range.



NTC thermistors

- NTC thermistor probes are also based on a temperature dependent resistance change in the sensor element. But unlike resistance thermometer detectors, thermistors have a negative temperature coefficient, i.e the resistance decreases with increasing temperature.

resistance temperature detectors

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

thermocouples

- Thermocouple probes consist of two wires of dissimilar metals or metal alloys welded together. Thermocouples are based on the thermoelectric (Seebeck) effect. There are various types of thermocouple, types K and T being the most common, although type K is by far the most widely used.



Therma 1, 3 & Elite Thermometers

with interchangeable thermocouple probes

- Elite model includes backlight & max/min functions
- FREE traceable certificate of calibration
- minimum 5 years battery life
- 2 year guarantee

The Therma 1 and 3 digital thermometers are rugged and easy to use instruments that operate through the range of -100 to 1372 °C with a 0.1 °C or 1 °C resolution. The thermometers are housed in a robust ABS case that contains 'Biomaster' additive which reduces bacterial growth.

The Therma 1 and 3 feature large, easy to read, LCD displays with open circuit 'Err', hold and low battery indication. Each thermometer is powered by three AAA batteries that give a minimum of five years battery life. The units will power off automatically after ten minutes, maximising battery life. This feature can be disabled by the user, if not required.

We offer an extensive range of interchangeable type K thermocouple probes for a variety of different applications, see pages 59 to 64 for full details.

Therma Elite thermometer

The Therma Elite incorporates all the features of a Therma 1 thermometer, but with the addition of a backlit display, max/min memory function and a mode button for the selection of 0.1/1 °C/°F. The thermometer also incorporates a calibration trim function (± 2 °C) which allows the user to compensate for thermocouple probe errors.



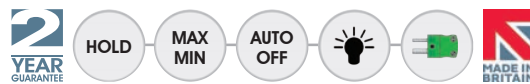
| order code | description |
|------------|----------------------------------|
| 221-041 | Therma 1 |
| 221-043 | Therma 3 |
| 221-061 | Therma Elite |
| 123-160 | penetration probe |
| 830-227 | protective silicone boot - black |
| 832-053 | s/steel wall bracket & boot |

the Therma series is exclusive of probe



optional accessories

- protective silicone boot - the Therma series is splashproof to IP64 when used in conjunction with this boot. Various colours are available - see page 14 for details
- stainless steel wall bracket (screws *not supplied*) and protective black silicone boot (832-053)



| specification | Therma 1/Elite | Therma 3 |
|---------------|-------------------------------|-----------------|
| range 0.1 °C | -99.9 to 299.9 °C | n/a |
| range 1 °C | 300 to 1372 °C | -100 to 1372 °C |
| resolution | 0.1 °C & 1 °C | 1 °C |
| accuracy | ± 0.4 °C ± 0.1 % | ± 1 °C |
| battery | 3 x 1.5 volt AAA | |
| battery life | minimum 5 years (10000 hours) | |
| sensor type | K thermocouple | |
| display | 12 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130 grams | |

FREE traceable certificate of calibration included



Therma Waterproof Thermometer

with interchangeable thermocouple probes

- robust waterproof case offering IP66/67 protection
- backlight, max/min & hold functions
- integrated rubber seal for durability
- 2 year guarantee

The Therma Waterproof thermometer is housed in a robust waterproof black ABS case which offers IP66/67 protection. The thermometer utilises state of the art electronic circuitry, designed for reliability and ease of use and can be submerged or washed under a running tap - ideal for industrial applications.

The thermometer measures temperature over the range of -99.9 to 299.9 °C with a 0.1 °C resolution, auto-ranging to 1 °C resolution over the range of 300 to 1372 °C.

The Therma Waterproof thermometer features a large easy to read, LCD display with max/min, hold, open circuit, low battery indication and a user selectable backlight. The unit also incorporates an auto-power off facility that automatically turns the instrument off after ten minutes, maximising battery life.

Each unit is housed in a durable, ABS case that incorporates an integrated rubber seal to ensure complete water tightness and help reduce the possibility of damage in harsh environments.

We offer an extensive range of interchangeable type K thermocouple probes, for a variety of different applications, see pages 59 to 64 for full details.



optional accessories

- protective silicone boot. Various colours are available - see page 38 for details
- Probe Wipes - these anti-bacterial wipes are ideal for probes - see page 35

| order code | description |
|------------|----------------------------------|
| 232-101 | Therma Waterproof |
| 830-257 | protective silicone boot - black |
| 832-015 | stainless steel wall bracket |

the Therma Waterproof is exclusive of probe

| specification | Therma Waterproof |
|---------------|------------------------------------|
| range 0.1 °C | -99.9 to 299.9 °C |
| range 1 °C | 300 to 1372 °C |
| resolution | 0.1 °C to 299.9 °C thereafter 1 °C |
| accuracy | ±0.4 °C ±0.1 % of reading |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | K thermocouple |
| display | 15 mm LCD |
| dimensions | 32 x 71 x 141 mm |
| weight | 220 grams |

FREE traceable certificate of calibration included



Therma Differential Thermometer

two channel, T1 or T2 or T1 minus T2 differential

- robust waterproof case offering IP66/67 protection
- ideal for radiator balancing or HVAC applications
- designed for plumbers, reliable & easy to use
- backlight, max/min & hold functions

The Therma Differential is a digital thermometer that allows the user to operate two type K thermocouple probes simultaneously. The display can be switched to show probe T1 or T2 temperature or the difference between probes T1 and T2 (T1-T2). This allows, for example, the temperature drop across radiators or the temperature rise or fall of two items being measured.

The Therma Differential measures temperature over the range of -99.9 to 299.9 °C with a 0.1 °C resolution or 300 to 1372 °C with a 1 °C resolution. The thermometer features a custom, LCD display with °C/°F, T1, T2, diff, hold, open circuit, low battery indication and a user selectable backlight. The unit incorporates an auto-power off facility that automatically turns the instrument off after approximately ten minutes, maximising battery life.

Each unit is housed in a durable, ABS case that has an integrated rubber seal to ensure complete water tightness and help reduce the possibility of damage in harsh environments.

We offer an extensive range of interchangeable type K thermocouple probes, for a variety of different applications, see pages 59 to 64 for full details.



● **optional accessories**

- protective black silicone boot c/w foot stand and magnet for mounting on pipes, radiators etc.. (830-258)
- stainless steel wall bracket (screws not supplied) (832-015) - see page 34 for details



| order code | description |
|------------|----------------------------------|
| 231-022 | Therma Differential |
| 830-258 | protective silicone boot - black |

the Therma Differential is exclusive of probe

2 YEAR GUARANTEE

HOLD

MAX MIN

AUTO OFF

IP66/ IP67

MADE IN BRITAIN

| specification | Therma Differential |
|---------------|------------------------------------|
| range 0.1 °C | -99.9 to 299.9 °C |
| range 1 °C | 300 to 1372 °C |
| resolution | 0.1 °C to 299.9 °C thereafter 1 °C |
| accuracy | ±0.4 °C ±0.1 % of reading |
| battery | 3 x 1.5 volt AAA |
| battery life | 7500 hours |
| sensor type | K thermocouple |
| display | 15 mm LCD |
| dimensions | 32 x 71 x 141 mm |
| weight | 220 grams |

FREE traceable certificate of calibration included



Industrial Thermometer Kits

ideal for a variety of applications



These kits represent excellent value-for-money as each one is supplied in a FREE carrying case/zip pouch, the Legionnaires' kit also includes a FREE water resistant countdown timer and FREE mini tub of 70 QAC free Probe Wipes. For a full specification on the Therma 1, see page 45 and for the Therma Differential thermometer, see page 47.

budget HVAC thermometer kit

each kit contains:

- Therma Differential thermometer (231-022)
- 2 x pipe clamp probes (133-040)
- zip pouch (830-090)



| order code | description |
|---|-----------------------------|
| 860-095 | budget HVAC thermometer kit |
| <i>FREE traceable certificate of calibration included</i> | |

HVAC thermometer kit

each kit contains:

- Therma Differential thermometer (231-022)
- penetration probe (123-160)
- 2 x pipe clamp probes (133-040)
- ABS carrying case (834-300)



| order code | description |
|---|----------------------|
| 860-090 | HVAC thermometer kit |
| <i>FREE traceable certificate of calibration included</i> | |

Legionnaires' thermometer kit

each kit contains:

- Therma 1 thermometer (221-041)
- penetration probe (123-160)
- precision ribbon surface probe (123-030)
- PTFE wire probe (133-362)
- water resistant countdown timer (806-150)
- mini tub of 70 Probe Wipes (836-022)
- ABS carrying case (834-150)



| order code | description |
|---|-------------------------------|
| 860-860 | Legionnaires' thermometer kit |
| <i>FREE traceable certificate of calibration included</i> | |



4 Channel Temperature Recorder

for logging & printing at user defined intervals

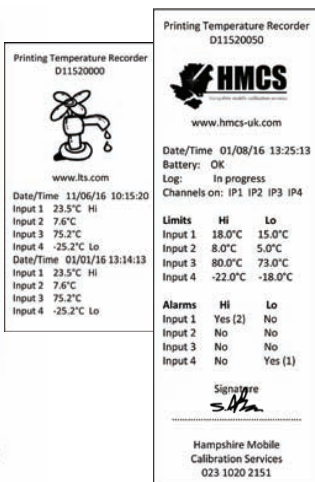
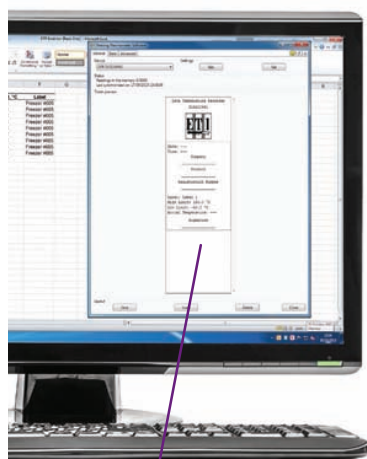
- 32000 readings, 8000 readings per channel
- type K or type T thermocouple sensor input
- user can personalise hard copy print-out
- indicates high & low alarm temperatures

The PTR (Printing Temperature Recorder), printing thermometer has been specifically designed to provide a cost effective way of automatically measuring and recording temperature and time at regular preset intervals. The PTR can save you time and money as it can log temperatures unsupervised overnight, weekends or during the normal working day.

The instrument is housed in a robust ABS case and incorporates an easy to use keypad. The print functions can be operated from the keypad on the PTR to provide a printed record of the temperature measurements and the real time they were taken.

The PTR features an easy to read, LCD display with low battery indication, displaying temperature over the range of -100 to 299.9 °C with a 0.1 °C resolution, auto-ranging to 1 °C over the range of 300 to 1372 °C (type K thermocouple).

The user, via the compatible software provided with the PTR, can programme high and low alarms for each of the four input channels, each channel can also be personalised with its own label (maximum 12 characters) i.e. machine 1, machine 2 etc. The software also allows the user to personalise the printed ticket with a company name, address and logo.



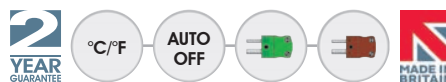
• personalise each channel with its own label

| order code | description |
|------------|--------------------------------|
| 226-275 | PTR - type K thermocouple |
| 227-275 | PTR - type T thermocouple |
| 812-270 | additional paper roll - single |
| 832-757 | stainless steel wall bracket |

the PTR is exclusive of probe

At the end of each day or week, an audit trail, in the form of a comma separated (.csv) or Excel (.xls) file, can be downloaded from the PTR. Each unit is supplied with a USB lead, battery charger, two rolls of paper, protective silicone boot and software, all supplied in a carrying case.

We offer a wide range of interchangeable type K or T thermocouple probes, see pages 59 to 64 for details.



| specification | Printing Temperature Recorder |
|--------------------|------------------------------------|
| range - type K t/c | -100 to 1372 °C |
| range - type T t/c | -100 to 400 °C |
| resolution | 0.1 °C to 299.9 °C thereafter 1 °C |
| accuracy | ±0.4 °C ± 0.1 % |
| memory | 32000 or 4 x 8000 readings |
| sample rate | 0.1 to 255 minutes |
| battery | Ni-MH 3.6 volt Rechargeable |
| battery life | approximately 500 prints |
| sensor type | K or T thermocouple |
| display | 10 mm LCD |
| dimensions | 54 x 110 x 183 mm |
| weight | 629 grams |

FREE traceable certificate of calibration included



MicroTherma 1 Thermometer

in-built microprocessor for automatic re-calibration



- ± 0.2 °C high accuracy, 0.1 °C resolution over the full range
- multi-input type K, J, T, R, N, S & E thermocouple probes
- FREE traceable certificate of calibration
- should never need re-calibrating

The MicroTherma 1 microprocessor thermometer measures temperature over the range of -270 to 1768 °C with a 0.1 °C/°F resolution. Each MicroTherma 1 incorporates an easy to read, 4½-digit dual LCD display with open circuit, low battery, hold, max/min and °C/°F indication.

The thermometer should never need re-calibrating as the microprocessor enables the instrument to continuously and automatically carry out self-diagnostic re-calibration. An additional feature allows the user to adjust the reading (± 2.5 °C) to offset any probe errors, correcting any inaccuracies of the thermocouple probe.

Each thermometer thereafter will automatically store, display the offset and adjust the instrument for the known probe error, maximising system accuracy. The MicroTherma 1 has the versatility of accepting any type K, J, T, R, N, S & E thermocouple probe, the probe type is simply selected through the mode button. The unit incorporates both max and min readings with a reset function and also features an auto-power off facility that maximises the battery life, turning the instrument off automatically after 30 minutes, this function can be disabled by the user, if not required. Other selectable parameters include: display contrast and internal CJC temperature reading. For details of the wide range of type K or type T thermocouple probes available, see pages 59 to 64.



high temperature probe
Ø3.3 x 130 mm (123-212)



reduced tip probe
Ø6.35 x 100 mm (137-126)

optional accessories

- protective white silicone boot - protect your instrument against accidental damage by fitting a boot (830-205)
- acrylic wall bracket (screws not supplied) - ideal for storing your thermometer safely when not in use (832-115)



| order code | description |
|------------|--------------------------|
| 221-091 | MicroTherma 1 |
| 123-212 | high temperature probe |
| 137-126 | reduced tip probe |
| 830-205 | protective silicone boot |
| 832-115 | acrylic wall bracket |

the MicroTherma 1 is exclusive of probe

| specification | MicroTherma 1 |
|---------------|---|
| range | -270 to 1768 °C |
| resolution | 0.1 °C/°F |
| accuracy | ± 0.2 °C ± 1 digit |
| battery | 2 x 1.5 volt AAA |
| battery life | 1000 hours |
| sensor type | thermocouple type K, J, T, R, N, S & E - selectable |
| display | custom LCD |
| dimensions | 35 x 73 x 141 mm |
| weight | 220 grams |

FREE traceable certificate of calibration included



Therma 1T Thermometer

±0.2 °C high accuracy

- utilises high accuracy type T thermocouple probes
- FREE traceable certificate of calibration

The Therma 1T thermometer utilises a type T thermocouple sensor which offers both fast response and a measurement range of -100 to 400 °C with a 0.1 °C resolution. Each unit is housed in a robust ABS case that contains 'Biomaster' additive which reduces bacterial growth.

The Therma 1T features a large, easy to read, LCD display with open circuit and low battery indication. Each thermometer is powered by three AAA batteries that give a minimum of five years battery life. The instrument will power off automatically after ten minutes, maximising battery life. This feature can be disabled by the user, if not required.

Below is a small selection of our high accuracy (±0.2 °C) type T thermocouple probes, for alternative probes please contact our sales team or visit our website.



| order code | description |
|------------|----------------------------------|
| 221-107 | Therma 1T |
| 830-221 | protective silicone boot - white |
| 832-053 | s/steel wall bracket & boot |




the Therma 1T is exclusive of probe

| specification | Therma 1T |
|---------------|----------------------------------|
| range | -100 to 400 °C |
| resolution | 0.1 °C to 300 °C thereafter 1 °C |
| accuracy | ±0.2 °C ±0.1% of reading |
| battery | 3 x 1.5 volt AAA |
| battery life | minimum 5 years (10000 hours) |
| sensor type | T thermocouple |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included

High Accuracy Temperature Probes

type T thermocouple probes - accurate to ±0.2 °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. <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | 127-160 327-160 <i>(coiled lead)</i> |
| fast response probe  Ø3.3 x 100 mm | This reduced tip, fast response, stainless steel probe is ideal for liquids or semi-solids i.e. soft rubber and other similar materials. <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -75 to 250 °C | 127-159 327-159 <i>(coiled lead)</i> |
| air or gas probe  Ø4.5 x 130 mm | This stainless steel, fast response probe is ideal for measuring air temperature in chill cabinets, fridges, freezers, storage areas and similar. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | 127-300 327-300 <i>(coiled lead)</i> |

*Please note: the above type T thermocouple probes offer a high accuracy of ±0.2 °C over the range of -20 to 70 °C



Precision PT100 Thermometers

0.1 °C or 0.01 °C resolution with a high accuracy

- high accuracy ± 0.2 °C or 0.05 °C
- interchangeable PT100 probes
- FREE certificate of calibration
- 2 year guarantee

High accuracy is one of the notable features of the Precision thermometers. There are two models available, the Precision and Precision Plus. The Precision measures temperature over the range of -199.9 to 499.9 °C with a 0.1 °C resolution and high accuracy of ± 0.2 °C. The Precision Plus measures temperature over the range of -199.99 to 199.99 °C with a 0.01 °C resolution and high accuracy of ± 0.05 °C. **Please note:** the accuracies quoted are for the instruments only.

Conveniently located on the front of the instrument are the on/off, max/min and display hold buttons. The Binder probe socket is positioned at the top of the instrument which enables a variety of probes to be used depending on the application.

The Precision thermometers feature a large, easy to read, LCD display with open circuit 'Err' and low battery indication. Each thermometer is powered by three AAA batteries that give a minimum of 2000 hours battery life. The unit will power off automatically after ten minutes, maximising battery life. This feature can be disabled by the user, if required.

We offer a range of interchangeable PT100 Class A probes for use with the Precision thermometer, see page 66 for full details. The Precision Plus is supplied with a PT100 1/10th DIN liquid probe (160-222) and a UKAS Certificate of Calibration.

For regularly checking the accuracy of each Precision thermometer, a range of calibration PT100 test caps complete with a UKAS Certificate of Calibration are available, see page 99 for details.



| order code | description |
|--|----------------------------------|
| 222-053 | Precision thermometer |
| 222-051 | Precision Plus thermometer |
| 160-220 | PT100 Class A liquid probe |
| 830-221 | protective silicone boot - white |
| 832-050 | s/steel wall bracket & boot |
| 222-053 Precision is exclusive of probe | |
| 222-051 Precision Plus is inclusive of probe | |

optional accessory

- protective silicone boot - the Precision/Precision Plus thermometers are splashproof to IP64 when used in conjunction with this boot. Various colours are available - see page 14



| specification | Precision | Precision Plus |
|---|-------------------------------|----------------------|
| range | -199.9 to 499.9 °C | -199.99 to 199.99 °C |
| resolution | 0.1 °C | 0.01 °C |
| accuracy | ± 0.2 °C | ± 0.05 °C |
| battery & life | 3 x 1.5 volt AAA - 2000 hours | |
| sensor type | PT100 | |
| display | 10 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130 grams | |
| 222-053 Precision includes a traceable certificate of calibration | | |
| 222-051 Precision Plus includes a UKAS Certificate of Calibration | | |



Thermapen[®] 3 Thermometer

with air, surface or penetration probe

- temperature range -49.9 to 299.9 °C
- lightweight, compact & easy to use
- foldaway stainless steel probe
- 2 year guarantee

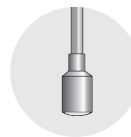


The Thermapen 3 thermometer incorporates a large digital display with a precise read-out over the range of -49.9 to 299.9 °C with a 0.1 °C resolution and an accuracy of ±0.4 °C. The resolution can be switched to 1 °C, if required, via a switch in the battery compartment. The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled if not required. Both low battery (icon) and open circuit indication are also displayed, when applicable. Each Thermapen 3 is powered by two lithium coin cell batteries with a minimum life expectancy of 1500 hours.

The probe conveniently folds back through 180° into the side of the instrument when not in use. The casing is washable and includes 'Biomaster' additive that reduces bacteria growth and the ergonomic rubber seal minimises the risk of the ingress of water, dust or food.

choice of probe styles

The Thermapen 3 is available with three styles of probe; surface, air or penetration. The fast response air probe is an invaluable tool in establishing the correct air temperature quickly in HVAC and laboratory applications. The surface probe is particularly useful in determining the temperature of hot plates or pipes etc. **Please note:** the accuracy and speed of response will be dependant on whether the surface is flat and heat transfer compound is used.



waterproof ribbon surface probe

Ø8 x 95 mm

This waterproof probe is ideal for measuring the surface temperature of pipes, bearings, hotplates and other flat surfaces.



penetration probe

Ø3.3 x 108 mm

This strong and versatile probe incorporates a pointed, general purpose tip, ideal for insertion into liquids and semi-solids.



air or gas probe

Ø3.3 x 95 mm

This fast response air or gas probe is ideal for measuring the air temperature in offices, HVAC applications, laboratories and other temperature sensitive working areas.

optional accessories



- **new** stainless steel wall bracket (832-002)
- protective PVC wallet with belt strap (830-110)
- protective silicone boot (830-260)
- glow in the dark protective silicone boot with magnets (830-265)

| order code | description |
|------------|---------------------------------|
| 231-210 | Thermapen 3 - penetration probe |
| 231-212 | Thermapen 3 - surface probe |
| 231-214 | Thermapen 3 - air probe |
| 830-260 | protective silicone boot |
| 830-265 | silicone boot - glow in dark |
| 830-110 | protective wallet |
| 832-002 | s/steel wall bracket |

the Thermapen 3 is supplied in a zip pouch (830-001)



| specification | Thermapen 3 |
|---------------|--------------------------------------|
| range | -49.9 to 299.9 °C |
| resolution | 0.1 °C or 1 °C - user selectable |
| accuracy | ±0.4 °C (-49.9 to 199.9 °C) or ±1 °C |
| battery | 2 x 3 volt CR2032 lithium coin cell |
| battery life | 1500 hours |
| sensor type | K thermocouple |
| display | 14.5 mm LCD |
| dimensions | 19 x 47 x 153 mm |
| weight | 97 grams |

FREE traceable certificate of calibration included



Bi-Metal Dial Thermometers

includes FREE calibration spanner



Ø25 mm bi-metal dials



● adjustment nut

These pocket-sized Ø25 mm dial thermometers feature a magnified lens and a pointed Ø4 x 130 mm stainless steel stem. Each dial is manufactured in three scales and is supplied with a calibration spanner and probe cover complete with pocket clip.

The thermometer incorporates a calibration adjustment nut, at the rear of the dial to allow easy re-calibration.

| order code | description | range | |
|------------|-------------------------|---------------|--|
| 800-811 | Ø25 mm dial | -40 to 70 °C | |
| 800-812 | Ø25 mm dial | -10 to 110 °C | |
| 800-813 | Ø25 mm dial | 0 to 250 °C | |
| 830-220 | Ø4 mm probe holder clip | | |

Ø45 mm bi-metal dials



● calibration spanner

These pocket-sized Ø45 mm dial thermometers feature a pointed Ø4 x 130 mm stainless steel stem. Each dial is manufactured in three scales and is supplied with a calibration spanner and probe cover complete with pocket clip.

The thermometer incorporates a calibration adjustment nut, at the rear of the dial to allow easy re-calibration.

| order code | description | range | |
|------------|-------------------------|---------------|--|
| 800-801 | Ø45 mm dial | -40 to 70 °C | |
| 800-802 | Ø45 mm dial | -10 to 110 °C | |
| 800-803 | Ø45 mm dial | 0 to 250 °C | |
| 830-220 | Ø4 mm probe holder clip | | |

Heavy Duty Dial Thermometers

with Ø50 mm bi-metal dial & 300 mm length probe

These simple to use, heavy duty, Ø50 mm bi-metal dial probe thermometers are reliable and accurate. The dial thermometers feature a Ø6.35 x 300 mm pointed stainless steel stem. Ideal for asphalt, blacktop, soil and other heavy duty applications.

Each thermometer incorporates a clear acrylic face and a calibration adjustment nut at the rear of the dial. Three temperature scales are available - see below.



● adjustment nut

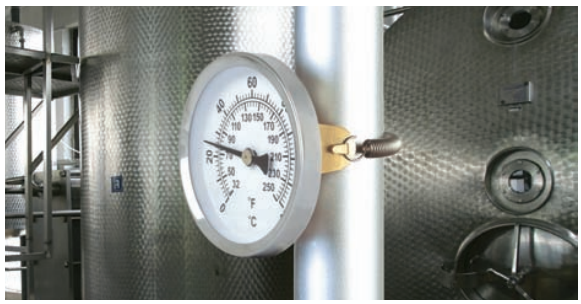


| order code | description | range | |
|------------|-------------|--------------|--|
| 800-060 | Ø50 mm dial | -20 to 60 °C | |
| 800-120 | Ø50 mm dial | 0 to 120 °C | |
| 800-250 | Ø50 mm dial | 0 to 250 °C | |

Bi-Metal Dial Pipe Thermometers

ideal for the HVAC industry

pipe surface thermometer



This easy to use surface pipe thermometer features a Ø60 mm stainless steel dial and indicates temperature over the range of 0 to 120 °C or 32 to 250 °F. The Ø50 mm dial face has a clear, graduated scale indicating temperature in 2 °C and 4 °F divisions.

Supplied with a wrap-around stainless steel spring kit for pipe mounting (two springs - one for up to 15 mm pipes, the other for up to 53 mm pipes). For larger pipes it is possible to attach the thermometer to pipework using either tie-wraps or wire (not supplied).

| order code | description |
|------------|------------------|
| 800-951 | pipe thermometer |

budget pipe surface thermometer



This easy to use surface pipe thermometer features a Ø60 mm nickel plated dial and indicates temperature over the range of 0 to 120 °C. The Ø50 mm dial face has a clear, graduated scale indicating temperature in 2 °C divisions.

Each thermometer is supplied with a wrap-around spring kit (53 mm long) for pipe mounting. For larger pipes it is possible to attach the thermometer to pipework using either tie-wraps or wire (not supplied).

| order code | description |
|------------|-------------------------|
| 800-971 | budget pipe thermometer |

Magnetic Thermometer

with Ø60 mm bi-metal dial

This Ø60 mm stainless steel, surface dial thermometer incorporates a magnetic sensing pad for mounting on ferrous metals and indicates temperature ranges from 0 to 120 °C or 32 to 250 °F.

This magnetic dial thermometer is widely used in the central heating and HVAC industries and is suitable for monitoring the temperature of radiators and pipes, it is especially useful when balancing radiator temperatures. The Ø50 mm dial face has a clear, graduated scale indicating temperature in 2 °C and 4 °F divisions.



| order code | description |
|------------|----------------------|
| 800-950 | magnetic thermometer |



Room Thermometers

ideal for use in an office, factory or laboratory

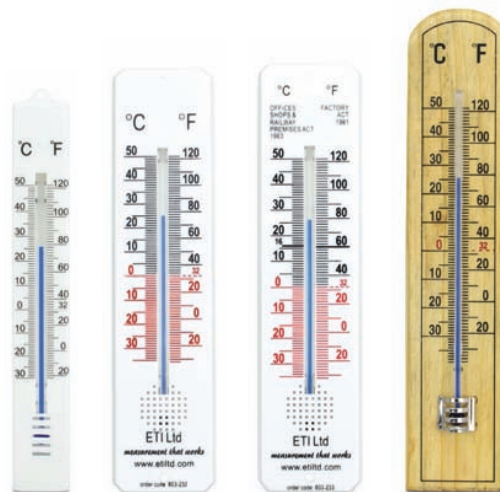


- simple & cost-effective means of measuring temperature
- traditional, spirit-filled design

These traditional, spirit-filled room thermometers display temperature over the range of -30 to 50 °C with an accuracy of ± 1 °C and a clearly marked scale in both °C and °F.

Models 803-229, 803-232 and 803-233 are housed in a white, ABS plastic case whereas model 803-292 is housed in a smooth grained, traditional style, beechwood case. Model 803-233 indicates the Factory Act minimum working temperature of 16 °C.

These room thermometers feature a wall-mounted slot for hanging and are ideal for recording temperatures in the office, factory, laboratory or home.



| order code | description |
|------------|---------------------------------|
| 803-229 | white 25 x 175 mm |
| 803-232 | white 45 x 195 mm |
| 803-233 | white 45 x 195 mm - Factory Act |
| 803-292 | wooden 45 x 205 mm |

Max/Min Thermometer

with internal temperature sensor

- simultaneously displays max/min temperatures
- large, easy to read LCD display

These digital max/min thermometers simultaneously display the actual temperature whilst displaying the max and min temperatures.

Each unit measures temperature over the range of -20 to 69.9 °C with a 0.1 °C/°F resolution and is ideal for recording temperatures in an office, factory, laboratory, home, greenhouse or conservatory.

The thermometer is easy to use, to switch the current reading between °C and °F or reset the recorded max/min temperatures simply press the button on the side of the unit.

The unit is housed in an ABS case measuring 29 x 79 x 187 mm that incorporates a slot for hanging and is powered by one AA battery (supplied).



| order code | description |
|------------|-------------------------|
| 810-120 | digital max/min - white |
| 810-121 | digital max/min - green |

| specification | digital max/min |
|----------------|--------------------------|
| range | -20 to 69.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ± 1 °C |
| battery & life | 1.5 volt AA - 4000 hours |
| display | custom LCD |
| dimensions | 29 x 79 x 187 mm |
| weight | 180 grams |



Max/Min Thermometer

with internal sensor & external temperature probe

- programmable high/low audible alarm
- records the max/min temperatures

This max/min and alarm thermometer indicates temperature over the range of -49.9 to 69.9 °C with a resolution of 0.1 °C/°F and an accuracy of ±1 °C.

The thermometer features a large, easy to read LCD display, max/min memory function to record the highest and lowest temperatures and a high/low programmable audible alarm. The unit incorporates two temperature sensors, a remote water resistant probe with one metre PVC lead for the appliance temperature and an internal sensor for the room temperature.

The remote probe can be mounted onto a wall using the suction pad or mounting bracket supplied. Housed in a durable ABS case the thermometer incorporates a foot-stand for shelf mounting.



| specification | digital max/min |
|---------------|---------------------------------|
| range | -49.9 to 69.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery | 3 volt CR2032 lithium coin cell |
| battery life | 3000 hours |
| display | custom LCD |
| dimensions | 16 x 50 x 82 mm |
| weight | 50 grams |

| order code | description | |
|------------|-----------------------------|--|
| 810-125 | digital max/min thermometer | |

Max/Min Thermometer

with internal temperature sensor

- classic design with a modern digital LCD bar graph
- environmentally friendly - mercury free

This max/min thermometer simultaneously displays the actual temperature whilst displaying the max and min temperatures on a digital LCD bar graph.

The thermometer measures temperature over the range of -40 to 40 °C with a resolution of 0.1 °C/°F and an accuracy of ±1 °C. To switch the current reading between °C and °F, simply press the button on the side of the unit. To reset the recorded max and min temperatures, simply press the red 'clear' button on the front of the thermometer.

The instrument is housed in an ABS case which incorporates a slot for hanging and is powered by one AA battery (supplied).



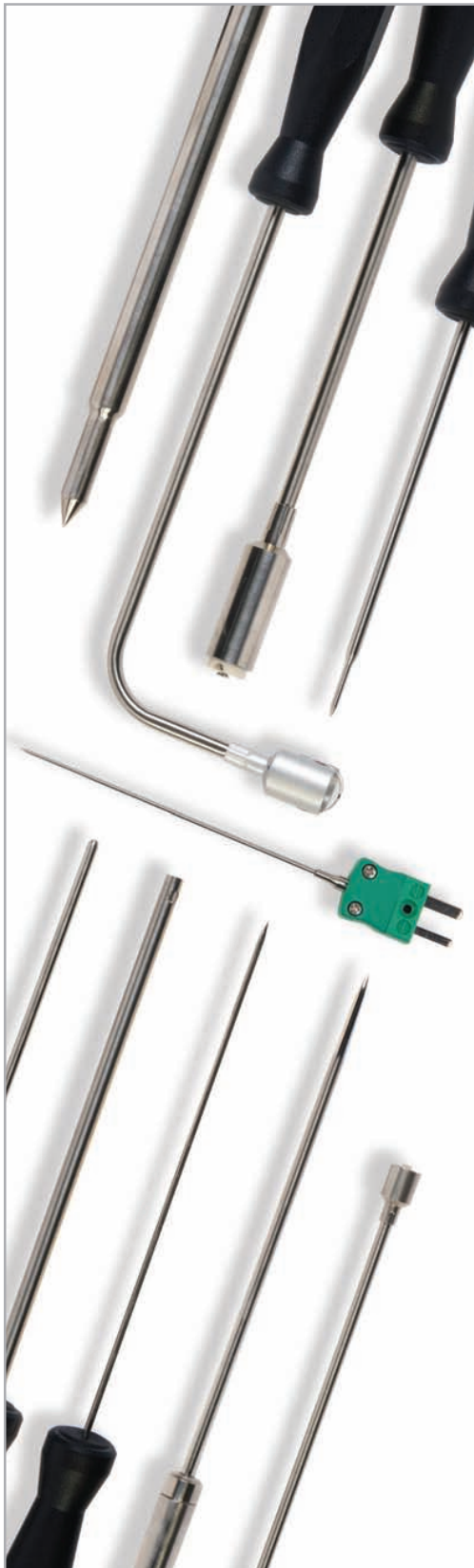
| specification | digital max/min |
|---------------|------------------|
| range | -40 to 40 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±1 °C |
| battery | 1.5 volt AA |
| battery life | 4000 hours |
| display | custom LCD |
| dimensions | 31 x 79 x 187 mm |
| weight | 170 grams |

| order code | description | |
|------------|-----------------------------|--|
| 810-020 | digital max/min thermometer | |



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. We manufacture an extensive range of probes to complement our range of portable, hand held thermometers and data-loggers.


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 when selecting probes.

handle types

As standard and where appropriate, each probe is supplied with a hexagonal, ribbed heavy duty or T-shaped handle.

 **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. 

 **T-shaped** - manufactured from polypropylene and available in black or white. Maximum temperature is 85 °C.

Biomaster - To reduce bacterial growth, hexagonal and ribbed handles contain 'Biomaster' anti-bacterial additive, as standard.

lead types

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. As an alternative, a one metre coiled PU lead is available. For hand held type T thermocouple probes, replace the third digit (3) of the order code with the number 7. 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 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 thermocouple

| | | 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. <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | 123-160 323-160 (coiled lead) | |
| penetration probe  Ø3.3 x 300 mm | This extended, stainless steel penetration probe is strong, versatile and ideal for measuring liquids and semi-solids. <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | 123-168 323-168 (coiled lead) | |
| fast response probe  Ø3.3 x 100 mm | This reduced tip, fast response, stainless steel penetration probe is ideal for liquids or semi-solids i.e. soft rubber and other similar materials. <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -75 to 250 °C | 123-159 323-159 (coiled lead) | |
| 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. <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -75 to 250 °C | 123-100 323-100 (coiled lead) | |
| 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. <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -75 to 250 °C | 133-170 133-173 (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. <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | 123-060 323-060 (coiled lead) | |
| 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. <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -200 to 1100 °C | 123-204 323-204 (coiled lead) | |
| 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. <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -200 to 1100 °C | 123-212 323-212 (coiled lead) | |
| high temperature probe  Ø3 x 300 mm | The above flexible, mineral insulated (MI) probe is also available with an extended 300 mm probe. | 123-213 323-213 (coiled lead) | |

for type T thermocouple probes, replace the third digit (3) of the order code with the number 7

Hand Held Temperature Probes

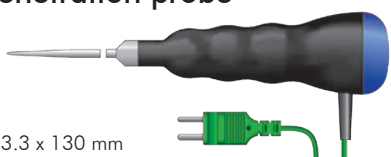
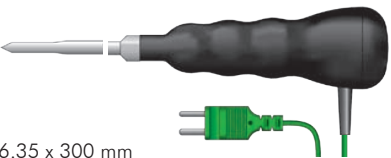
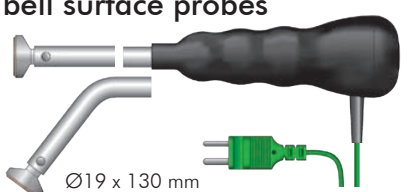
type K thermocouple

| | | order code |
|--|---|---|
| <p>Binder probe</p>  <p>Ø3 x 130 mm</p> | <p>This rounded tip, stainless steel probe is designed for inserting into Binder self-sealing glands to measure the temperature of vessels or radiators.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | <p>123-240</p> <p>323-240 <i>(coiled lead)</i></p> |
| <p>air or gas probe</p>  <p>Ø4.5 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>123-300</p> <p>323-300 <i>(coiled lead)</i></p> |
| <p>ribbon surface probe</p>  <p>Ø15 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>123-030</p> <p>123-032 <i>(right-angled)</i></p> |
| <p>ribbon surface probe</p>  <p>Ø8 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>123-044</p> <p>123-052 <i>(right-angled)</i></p> |
| <p>waterproof surface probe</p>  <p>Ø8 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>123-046</p> <p>323-046 <i>(coiled lead)</i></p> |
| <p>surface probe</p>  <p>Ø6 x 130 mm</p> | <p>This surface probe incorporates a spring-loaded copper disc sensing tip. The probe is ideal for a variety of surface temperature measurements.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -100 to 600 °C | <p>123-000</p> |
| <p>heavy duty surface probe</p>  <p>Ø12 x 130 mm</p> | <p>This high temperature surface probe is ideal for measuring the temperature of griddles, hotplates etc. A right-angled version is also available.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -100 to 1000 °C | <p>123-020</p> <p>123-028 <i>(right-angled)</i></p> |
| <p>penetration probe</p>  <p>Ø3.3 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | <p>123-162</p> <p>123-158 <i>(reduced tip)</i></p> |

for type T thermocouple probes, replace the third digit (3) of the order code with the number 7

Waterproof Temperature Probes





heavy duty type K thermocouple

| | | order code |
|--|---|--|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | <ul style="list-style-type: none"> ● 143-161 ● 143-162 ● 143-164 ● 143-165 ○ 143-166 ● 143-167 |
| <p>reduced tip probe</p>  <p>Ø6.35 x 300 mm</p> | <p>This extended, reduced tip, waterproof, stainless steel penetration probe incorporates a reduced tip and heavy duty ribbed handle, ideal for heavy duty applications including food processing, asphalt and other similar materials.</p> <ul style="list-style-type: none"> • response time less than 10 seconds • probe temperature range -75 to 250 °C | 143-120 |
| <p>bell surface probes</p>  <p>Ø19 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 5 seconds • probe temperature range -75 to 200 °C | <p>143-080 <i>(straight)</i></p> <p>143-084 <i>(45° angle)</i></p> <p>143-086 <i>(90° angle)</i></p> |

the above thermocouple probes are supplied with a moulded thermocouple connector.

Interchangeable Probe Handle

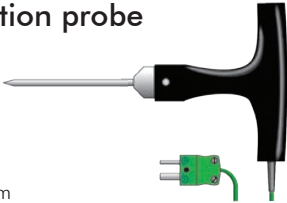
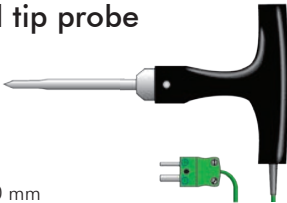
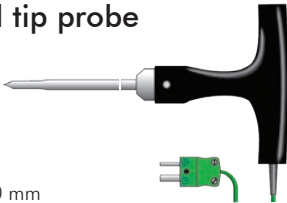
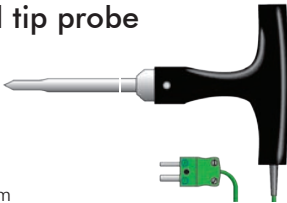
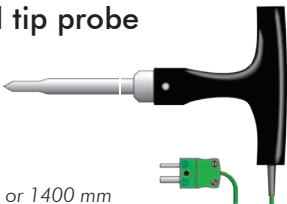
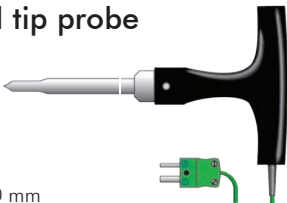
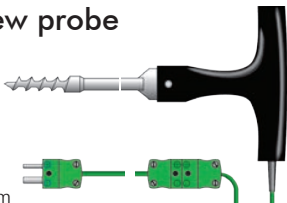
& plug-mounted type K thermocouple probes

| | | order code | £ each |
|--|--|---|--------|
| <p>interchangeable probe handle</p>  <p>Ø25 x 151 mm</p> | <p>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.</p> | 323-950 | |
| <p>penetration probe</p>  <p>Ø3.3 x 120 mm</p> | <p>This stainless steel, penetration probe is strong, versatile and ideal for liquids or semi-solids.</p> <ul style="list-style-type: none"> • response time less than three seconds • probe temperature range -75 to 250 °C | 133-161 | |
| <p>air or gas probe</p>  <p>Ø3.3 x 120 mm</p> | <p>This probe has a perforated stainless steel tip for fast response. Ideal for chill cabinets, fridges, freezers and HVAC units.</p> <ul style="list-style-type: none"> • response time less than one second • probe temperature range -75 to 250 °C | 133-301 | |
| <p>surface probe</p>  <p>Ø8 x 120 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than one second • probe temperature range -75 to 250 °C | <p>133-045</p> <p>133-046 <i>(right-angled)</i></p> | |



Heavy Duty Temperature Probes

type K thermocouple









| | | order code |
|---|--|--|
| <p>penetration probe</p>  <p>Ø4 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -75 to 250 °C | 133-124 |
| <p>reduced tip probe</p>  <p>Ø6.35 x 100 mm</p> | <p>This robust, stainless steel, reinforced needle probe incorporates a T-shaped polypropylene handle and a reduced sensing tip for faster response. Ideal for a variety of heavy duty applications including food processing etc.</p> <ul style="list-style-type: none"> • response time less than 9 seconds • probe temperature range -75 to 250 °C | 133-126 |
| <p>reduced tip probe</p>  <p>Ø6.35 x 300 mm</p> | <p>This extended robust, stainless steel, reinforced needle probe incorporates a T-shaped polypropylene handle and a reduced sensing tip for faster response. Ideal for a variety of heavy duty applications including food processing etc.</p> <ul style="list-style-type: none"> • response time less than 9 seconds • probe temperature range -75 to 250 °C | 133-120 |
| <p>reduced tip probe</p>  <p>Ø8 x 500 mm</p> | <p>This extended, stainless steel, reinforced needle probe incorporates a T-shaped polypropylene handle and a reduced sensing tip for faster response. Ideal for a variety of heavy duty applications including food processing etc.</p> <ul style="list-style-type: none"> • response time less than 10 seconds • probe temperature range -75 to 250 °C | 133-130 |
| <p>reduced tip probe</p>  <p>Ø9.5 x 1000 or 1400 mm</p> | <p>This Ø9.5 mm stainless steel, reinforced needle probe incorporates a T-shaped polypropylene handle and a reduced sensing tip for faster response. Ideal for applications where a longer probe is required, i.e. grain silos.</p> <ul style="list-style-type: none"> • response time less than 17 seconds • probe temperature range -75 to 250 °C | 133-136 (1000 mm) 133-135 (1400 mm) |
| <p>reduced tip probe</p>  <p>Ø9.5 x 2000 mm</p> | <p>This extended stainless steel, reinforced needle probe incorporates a T-shaped polypropylene handle and a reduced sensing tip for faster response. Ideal for applications where a very long probe is required, i.e. grain silos.</p> <ul style="list-style-type: none"> • response time less than 17 seconds • probe temperature range -75 to 250 °C | 133-133 |
| <p>corkscrew probe</p>  <p>Ø8 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 9 seconds • probe temperature range -75 to 250 °C | 133-175 |

Please note: for hand held type T thermocouple probes, replace the third digit (3) of the order code with the number 7



Fast Response Temperature Probes




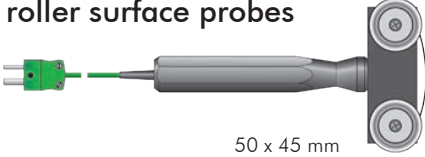
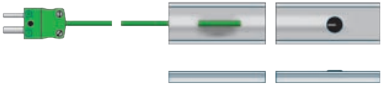
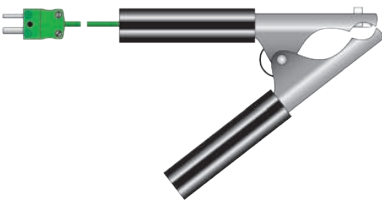
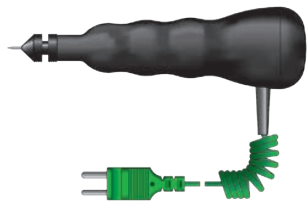
exposed junction wire type K thermocouple

| | | 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. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | 133-362 (1000 mm) 133-363 (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. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | 133-372 (1000 mm) 133-373 (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. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -60 to 350 °C | 133-382 (1000 mm) 133-383 (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. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -60 to 600 °C | 133-387 (1000 mm) 133-389 (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. <ul style="list-style-type: none"> • 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. | 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. | 627-740 (1000 mm) 627-741 (2000 mm) |
| miniature plug or socket  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. | 625-217 (plug) 421-501 (socket) |

Please note: for hand held type T thermocouple wire probes, replace the third digit (3) of the order code with the number 7

Special Temperature Probes

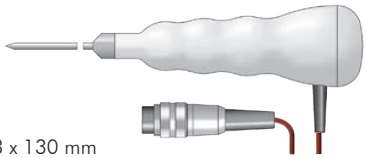
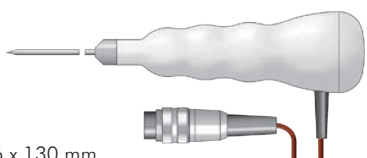
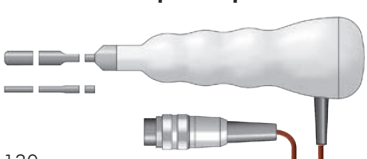

type K thermocouple

| | | order code |
|--|--|---|
| <p>miniature needle probe</p>  <p>Ø1.4 reducing to Ø1 mm tip x 90 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -75 to 250 °C | <p>133-180 (1m lead)</p> <p>133-182 (2m lead)</p> |
| <p>fast response meat probe</p>  <p>Ø1 mm tip x 90 mm</p> | <p>This fast response, meat penetration probe is specially designed for measuring burger patties etc. Supplied with a one metre coiled lead.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -75 to 250 °C | <p>133-150</p> |
| <p>magnet surface probe</p>  <p>Ø24 x 28 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 20 seconds • probe temperature range -20 to 80 °C | <p>133-017</p> |
| <p>roller surface probes</p>  <p>50 x 45 mm</p> | <p>These roller surface probes have either s/steel or PTFE wheels and are designed for measuring moving surfaces. Max. speed 100 m/min.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>123-038 (s/steel)</p> <p>123-036 (PTFE)</p> |
| <p>velcro pipe probe</p>  <p>20 x 500 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 20 seconds • probe temperature range -10 to 100 °C | <p>133-080</p> |
| <p>pipe clamp probe</p>  | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -10 to 100 °C | <p>133-040</p> |
| <p>adjustable tyre probe</p>  <p>Ø1 x 10 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | <p>343-100</p> |

Please note: for hand held type T thermocouple probes, replace the third digit (3) of the order code with the number 7

Hand Held Temperature Probes

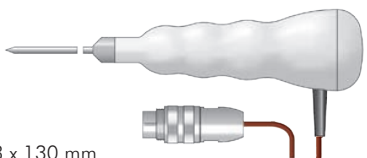

type T thermocouple probes with lumberg connectors

| | order code | |
|---|------------|---|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | 177-166 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C |
| <p>fast response probe</p>  <p>Ø2.6 x 130 mm</p> | 177-100 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -75 to 250 °C |
| <p>rigid between pack probe</p>  <p>Ø6 x 130 mm</p> | 177-060 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C |
| <p>air or gas wire probe</p>  <p>Ø2.4 x 1000 mm PTFE lead</p> | 177-372 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 0.5 seconds • probe temperature range -75 to 250 °C |

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

Waterproof Temperature Probes

type T thermocouple probes with lumberg connectors





| | order code | |
|--|------------|---|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | 177-266 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C |
| <p>penetration probe</p>  <p>Ø3.3 x 100 mm</p> | 177-200 | <p>This waterproof, stainless steel, plug-mounted probe is strong, versatile and ideal for measuring liquids, semi-solids and granular materials.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C |

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





PT100 Class A Temperature Probes

for use with the Precision 0.1 °C thermometer

| | | order code |
|---|--|------------|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | <p>This stainless steel penetration probe is strong, versatile and ideal for measuring liquids and semi-solids accurately in a variety of applications.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -50 to 200 °C | 160-160 |
| <p>air or gas probe</p>  <p>Ø3.3 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -50 to 200 °C | 160-300 |
| <p>liquid probe</p>  <p>Ø3.3 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -50 to 200 °C | 160-220 |
| <p>air or gas wire probe</p>  <p>Ø3.7 x 30 mm with 1000 mm FEP lead</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -50 to 200 °C | 160-372 |







PT100 1/10 DIN Temperature Probes

for use with the Precision Plus 0.01 °C thermometer

| | | order code |
|--|---|------------|
| <p>liquid probe</p>  <p>Ø3.3 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 4 seconds • probe temperature range -200 to 200 °C | 160-222 |
| <p>liquid probe</p>  <p>Ø4.8 x 250 mm with 2000 mm PTFE lead</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 10 seconds • probe temperature range -200 to 200 °C | 160-446 |

NTC Thermistor Temperature Probes

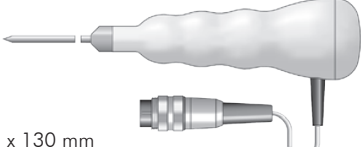
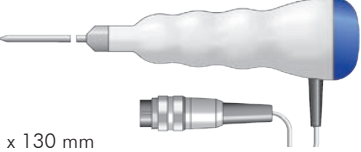
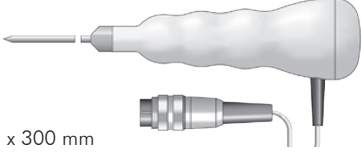
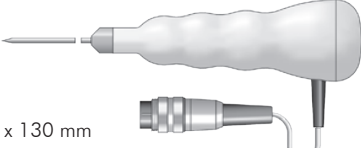
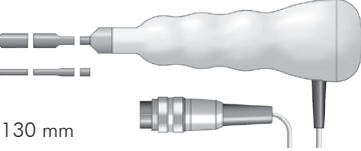
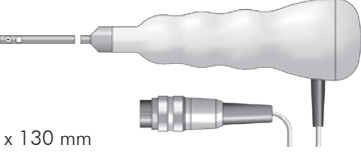
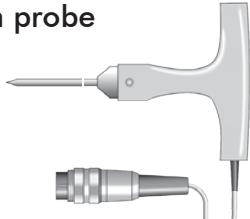
for use with ThermaData® loggers

| | | order code | |
|--|--|--|--|
| <p>general purpose probe</p>  <p>Ø3.3 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 125 °C | <p>172-011 (1000 mm) 172-012 (2000 mm) 172-013 (3000 mm)</p> | |
| <p>general purpose probe</p>  <p>Ø3.3 x 300 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 125 °C | 172-168 | |
| <p>liquid probe</p>  <p>Ø3.3 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 125 °C | <p>172-382 (1000 mm) 172-383 (2000 mm) 172-384 (3000 mm)</p> | |
| <p>air or gas probe</p>  <p>Ø3.7 x 30 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -40 to 125 °C | <p>172-372 (1000 mm) 172-373 (2000 mm) 172-374 (3000 mm)</p> | |
| <p>food simulant probe</p>  <p>9 x 100 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • probe temperature range 0 to 100 °C | 172-350 | |
| <p>logger extension lead</p>  <p>150 mm PVC lead</p> | <p>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.</p> <ul style="list-style-type: none"> • 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

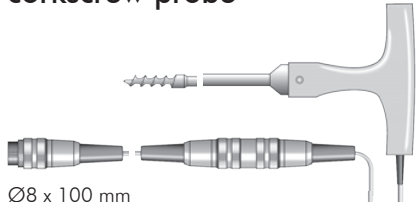
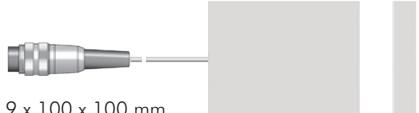


| | | order code |
|---|--|------------|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | <p>This stainless steel penetration probe is strong, versatile and incorporates a heavy duty, ribbed, polypropylene handle with a white end cap. Ideal for measuring liquids, semi-solids and granular materials.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 150 °C | 174-166 |
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | <p>The above penetration probe is available with a colour-coded end cap.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 150 °C <ul style="list-style-type: none"> ● 174-161 ● 174-162 ● 174-164 ● 174-165 ● 174-167 | |
| <p>penetration probe</p>  <p>Ø3.3 x 300 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 150 °C | 174-168 |
| <p>fast response probe</p>  <p>Ø2.6 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -40 to 150 °C | 174-100 |
| <p>rigid between pack probe</p>  <p>Ø6 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -40 to 150 °C | 174-060 |
| <p>air or gas probe</p>  <p>Ø3.3 x 130 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 2 seconds • probe temperature range -40 to 150 °C | 174-300 |
| <p>penetration probe</p>  <p>Ø4 x 100 mm</p> | <p>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.</p> <ul style="list-style-type: none"> • response time less than 5 seconds • probe temperature range -40 to 150 °C | 170-169 |

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

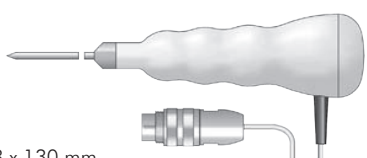

NTC thermistor probes with lumberg connectors

| | order code | |
|---|------------|---|
| <p>corkscrew probe</p>  <p>Ø8 x 100 mm</p> | 170-175 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 6 seconds • probe temperature range -40 to 150 °C |
| <p>food simulant probe</p>  <p>9 x 100 x 100 mm</p> | 170-350 | <p>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.</p> <ul style="list-style-type: none"> • probe temperature range 0 to 100 °C |
| <p>air or gas wire probe</p>  <p>Ø3.7 x 30 mm with 1000 mm FEP lead</p> | 170-372 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 1 second • probe temperature range -40 to 150 °C |
| <p>foil between pack probe</p>  <p>40 x 50 mm with 1000 mm FEP lead</p> | 170-090 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range 0 to 100 °C |

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 | |
|--|------------|--|
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | 174-266 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -40 to 150 °C |
| <p>penetration probe</p>  <p>Ø3.3 x 100 mm</p> | 172-000 | <p>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.</p> <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -40 to 150 °C |

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



Infrared Thermometers

non-contact surface temperature measurement



The advantage of an infrared thermometer against a conventional probe thermometer is speed and the fact that it is non-contact; but keep in mind, infrared thermometers only measure the surface temperature. Infrared thermometers are easy to use, simply point the instrument at the object you wish to measure and read the temperature on the LCD.

what is infrared?

Infrared energy is emitted from the surface of all objects. This energy is part of the electromagnetic spectrum. Infrared radiation can have a wavelength of a fraction of a micron up to several hundred microns. Infrared thermometers measure infrared with a wavelength of between 4 and 14 microns.

infrared thermometer limitations

As it is the surface of an object that emits infrared, an infrared thermometer will not measure its internal (core) temperature. You cannot accurately measure through any covering (glass, polythene, clingfilm etc.). Any surface you are measuring must be clean and dust free. Air temperature cannot be measured by an infrared thermometer.

emissivity

Emissivity is a measure of the efficiency in which a surface emits thermal energy. It is defined as the fraction of energy being emitted relative to that emitted by a thermal black surface (a black body). A black body is a material that is a perfect emitter of heat energy and has an emissivity value of 1. A material with an emissivity value of 0 would be considered a perfect thermal mirror. For example, if an object had the potential to emit 100 units of energy but only emits 90 units in the real world, then that object would have an emissivity value of 0.90. In the real world there are no perfect 'black bodies' and very few perfect infrared mirrors so most objects have an emissivity between 0 and 1.

The table below is just a small selection of different emissivity values, for a full listing visit www.etiltd.com/emissivity

| | | | |
|----------------------|------|--------------------|------|
| aluminium (anodised) | 0.77 | plastic (black) | 0.95 |
| brass (oxidised) | 0.61 | porcelain (glazed) | 0.92 |
| brick (red) | 0.90 | rubber | 0.95 |
| cement | 0.54 | skin (human) | 0.98 |
| copper (oxidised) | 0.65 | soil (dry) | 0.92 |
| glass | 0.92 | stainless steel | 0.59 |
| paper (white) | 0.68 | water | 0.95 |
| perspex | 0.86 | water (ice) | 0.96 |
| pipe (galvanized) | 0.46 | water (frost) | 0.98 |
| plastic (white) | 0.84 | wood (planed) | 0.90 |

lens care

Care must be taken with the infrared thermometer's lens. The infrared waves are focused and filtered by the lens, therefore if the lens gets dirty or damaged in any way (even light scratches) then the accuracy can change at some temperatures.



IR-Pocket Thermometer

with max/min, display hold & lock functions

- LED spot alignment - safer than a laser
- wide temperature range

The IR-Pocket non-contact, infrared thermometer has an easy to read, LCD display with low battery indication and an auto-power off facility that turns the instrument off after 15 seconds.

This infrared thermometer features a two-button keypad, simply aim the thermometer at the target and press the 'measure' button to display the surface temperature instantly. Pressing the 'mode' button allows the user to access a variety of functions, i.e. max/min, °C/°F, lock and emissivity. The lock function allows for continuous temperature measurement and the emissivity is adjustable so the user can measure a variety of surface types.

The unit incorporates LED spot alignment, which allows the user to precisely target the diameter of the area being measured.



| specification | IR-Pocket |
|----------------|--|
| range | -49.9 to 349.9 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±2.5 % of reading or ±2.5 °C whichever is greater |
| field of view | target ratio 1:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery & life | 2 x 1.5 volt AAA - 20 hours continuous use |
| display | custom LCD |
| dimensions | 25 x 52 x 100 mm |
| weight | 88 grams |

| order code | description |
|------------|-------------|
| 814-060 | IR-Pocket |

RayTemp® 2 IR Thermometer

high accuracy ±1 °C over a limited range

- FREE traceable certificate of calibration
- displays ambient temperature

Designed and manufactured here in the UK, the RayTemp 2 infrared non-contact thermometer features a large, easy to read LCD and a three-button keypad, incorporating measure, mode and max/min functions.

Incorporating a 5:1 optic ratio (target distance ratio) and a fixed emissivity of 0.95 making it suitable for a wide range of food and industrial applications, each RayTemp 2 is housed in a robust ABS case that contains 'Biomaster' additive which reduces bacterial growth.

The unit does not incorporate laser alignment, which will appeal to those who are health and safety conscious and do not require this feature.



| specification | RayTemp 2 |
|----------------|--|
| range | -49.9 to 349.9 °C |
| resolution | 0.1 °C & 1 °C |
| accuracy | ±1 °C (0 to 100 °C) otherwise ±2 °C or ±2 % of reading whichever is greater |
| field of view | target ratio 5:1 |
| emissivity | 0.95 fixed |
| battery & life | 3 x 1.5 volt AAA - 5000 hours continuous |
| display | 12 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included

| order code | description |
|------------|--------------------------|
| 228-020 | RayTemp 2 |
| 830-227 | protective silicone boot |
| 814-132 | Comparator |



Thermapen® IR

infrared thermometer with foldaway probe

- patented, automatic 360° rotational display
- adjustable emissivity for different surfaces
- motion-sensing sleep mode - probe only
- FREE traceable certificate of calibration



The new Thermapen IR is two instruments in one compact unit, combining the advanced technology of two ETI designed and manufactured products, the RayTemp 2 Plus infrared thermometer and Thermapen 4 digital probe thermometer.

Housed in a robust ABS case containing 'Biomaster' additive which reduces bacterial growth, the Thermapen IR incorporates a motion-sensing sleep mode (penetration probe only) which automatically turns the instrument on/off when set down or picked up, maximising battery life.

infrared thermometer

Simply aim the infrared thermometer at the target and press the scan button to display the surface temperature. **Please Note:** the infrared non-contact function will only measure when the probe is in the closed position.

The Thermapen IR thermometer incorporates a max/min temperature function accessed via the mode button (IR only). The distance to target ratio is 5:1, therefore the thermometer should be positioned as close to the target as possible. The default emissivity is 0.95 but can be adjusted between 0.1 and 1, if required via the mode button.

penetration probe

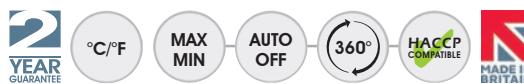
Alternatively, it is possible to take liquid or semi-solid product temperatures using the reduced tip, stainless steel penetration probe (Ø3.3 x 110 mm). The probe conveniently folds back through 180° into the side of the instrument when not in use.



● new wall bracket



UK Patent No. GB 2504936



| specification | Thermapen IR |
|---------------------|--|
| range - infrared | -49.9 to 349.9 °C |
| range - probe | -49.9 to 299.9 °C |
| resolution | 0.1 or 1 °C/°F - user selectable |
| accuracy - infrared | ±1 °C (0 to 100 °C) otherwise ±2 °C or ±2 % of reading whichever is greater |
| accuracy - probe | ±0.4 °C (-49.9 to 199.9 °C) otherwise ±1 °C |
| field of view | target ratio 5:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery | 2 x 3 volt CR2032 lithium coin cell |
| battery life | 1000 hours - continuous use |
| display | 14.5 mm (horizontal) & 11 mm (vertical) LCD |
| dimensions | 19 x 50 x 157 mm |
| weight | 125 grams |

FREE traceable certificate of calibration included (probe & IR)

| order code | description |
|------------|--------------------------|
| 228-065 | Thermapen IR |
| 830-480 | protective silicone boot |
| 830-001 | zip pouch |
| 832-002 | s/steel wall bracket |



RayTemp® 2 Plus

infrared thermometer with automatic 360° rotating display

- adjustable emissivity for different surfaces
- FREE traceable certificate of calibration
- records the max/min temperatures
- target ratio 5:1



UK Patent No. GB 2504936



Designed and manufactured here in the UK, the RayTemp 2 Plus infrared non-contact thermometer incorporates all the features of the RayTemp 2, but with the addition of a 360° self-rotating display, backlight and adjustable emissivity. Simply aim the thermometer at the target and press the measure button to display the surface temperature.

The unit incorporates a 5:1 optic ratio (target distance/diameter ratio) and therefore the thermometer should be positioned as close to the target as possible. The default emissivity is 0.95 but can be changed from 0.1 to 1, if required. The unit does not incorporate laser alignment, however this will appeal to those who are health and safety conscious and do not require this feature.

The RayTemp 2 Plus features a three-button keypad, incorporating measure, mode and max/min functions. Pressing the mode button allows the user to select °C/°F, adjust emissivity values and display the ambient temperature. The max/min function displays the highest and lowest recorded temperatures over the measurement period.

Featuring a large, easy to read LCD display with low battery indication and an auto-power off facility that turns the instrument off after 30 seconds, maximising battery life, each unit is housed in a robust ABS case that contains 'Biomaster' additive which reduces bacterial growth and is powered by three AAA batteries that give a minimum of 3000 hours battery life.

automatic 360° rotational display

The RayTemp 2 Plus features an automatic 360° display, which rotates in 90° increments enabling the user to read the temperature in any position i.e. left hand, right hand, vertical or horizontal. This feature can be 'locked' by the user, if required.



| order code | description |
|------------|--------------------------|
| 228-120 | RayTemp 2 Plus |
| 830-227 | protective silicone boot |
| 814-132 | Comparator |

| specification | RayTemp 2 Plus |
|---------------|---|
| range | -49.9 to 349.9 °C |
| resolution | 0.1 °C & 1 °C |
| accuracy | ±1 °C (0 to 100 °C) otherwise ±2 °C or ±2 % of reading whichever is greater |
| field of view | target ratio 5:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery | 3 x 1.5 volt AAA |
| battery life | 3000 hours - continuous use |
| display | 14.5 mm (horizontal) & 11 mm (vertical) LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |

FREE traceable certificate of calibration included



Mini RayTemp®

for routine day-to-day temperature checks

- compact, lightweight & easy to use
- temperature range -50 to 330 °C
- laser dot alignment
- target ratio 12:1

The Mini RayTemp infrared thermometer is a compact, lightweight and low cost infrared thermometer. Simply aim and pull the trigger to display the temperature of the item being measured.

Measuring temperature over the range of -50 to 330 °C with an assured accuracy of ± 2 °C over the range of 0 to 330 °C, outside of this range (-50 to 0 °C) accuracy is ± 4 °C, the Mini RayTemp has a clear, easy to read, LCD display with low battery, backlight indication and an auto-power off facility that turns the instrument off after ten seconds, maximising battery life.

Ideal for numerous temperature measurement applications where contact with the item to be measured is an issue. The Mini RayTemp features laser assisted alignment as standard, to assist in pin-pointing the area of measurement.

The unit incorporates a 12:1 optic ratio (target distance/diameter ratio) and a fixed emissivity of 0.95 making it suitable for a wide range of food and industrial applications.



| order code | description |
|------------|------------------------|
| 814-080 | Mini RayTemp |
| 830-040 | protective nylon pouch |
| 814-132 | Comparator |

optional accessories

- protective nylon pouch with belt strap (830-040)
- Comparator (814-132)

low cost calibration checker

The Comparator provides an inexpensive way of checking the temperature of infrared thermometers when used in conjunction with a Reference thermometer, see pages 93 and 94 for details.



| specification | Mini RayTemp |
|---------------------|--|
| range | -50 to 330 °C |
| resolution | 0.1 °C/°F |
| accuracy - infrared | ± 2 °C (0 to 330 °C) otherwise ± 4 °C whichever is greater |
| field of view | target ratio 12:1 |
| emissivity | 0.95 fixed |
| battery & life | 9 volt PP3 - 80 hours continuous use |
| display | custom LCD |
| dimensions | 36 x 88 x 131 mm |
| weight | 143 grams |



RayTemp® 3 Infrared Thermometer

ideal for the foodservice industry

- ±1 °C accuracy over the critical food range
- 8 dot circular laser for precise targeting
- compact, lightweight & easy to use
- temperature range -60 to 500 °C



The RayTemp 3 infrared thermometer is compact, lightweight and easy to use. Simply aim and pull the trigger to display the temperature of the item being measured. In addition the LCD will display the maximum temperature.

The instrument measures temperature over the range of -60 to 500 °C with an assured accuracy of ±1 °C over the critical food range of 0 to 65 °C, outside of this range ±2 °C of reading in an ambient temperature of between 15 °C and 25 °C, with a repeatability of ±1 °C of reading.

Incorporating a clear, easy to read, LCD display with low battery, laser and backlight indication and an auto-power off facility that turns the instrument off after 15 seconds, maximising battery life, the RayTemp 3 is ideal for measuring food surface temperatures, eliminating the need to touch or contaminate the food you are measuring, avoiding the risk of cross-contamination. The unit can be used by anyone, as there is no need to focus or adjust the instrument.

Each RayTemp 3 thermometer features a single push button, allowing the user to select °C or °F. The thermometer also incorporates an 8 dot circle laser indicator, which allows you to precisely target the diameter of the area to be measured. As you move closer or further from the target the laser circle changes diameter. The unit incorporates a 12:1 optic ratio (target distance/diameter ratio) and a fixed emissivity of 0.97 making it more suitable for chilled and frozen foods, although this thermometer can be used for a wide range of other applications.



optional accessories

- protective nylon pouch with belt strap (830-040)
- ABS carrying case - ideal for transporting the RayTemp infrared thermometer (834-740)

low cost calibration checker

The Comparator provides an inexpensive way of checking the temperature of infrared thermometers when used in conjunction with a Reference thermometer, see pages 93 and 94 for details.



Comparator



| order code | description |
|------------|------------------------|
| 814-040 | RayTemp 3 |
| 830-040 | protective nylon pouch |
| 834-740 | ABS carrying case |
| 814-132 | Comparator |

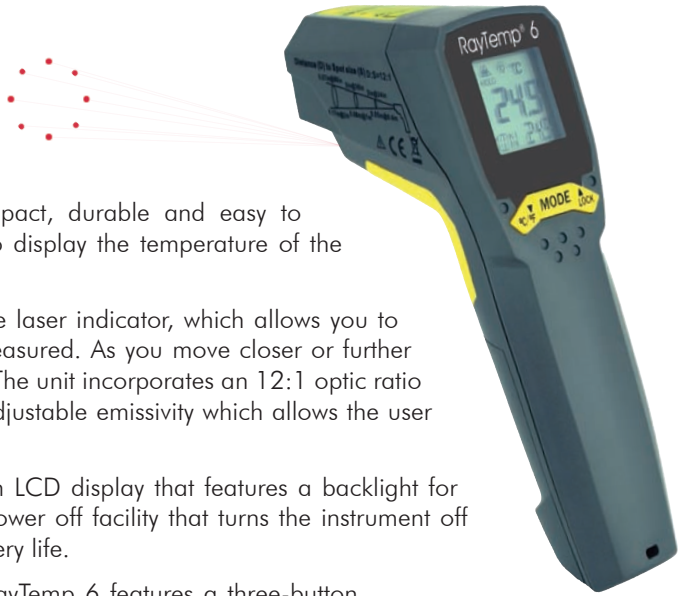
| specification | RayTemp 3 |
|---------------------|---|
| range | -60 to 500 °C |
| resolution | 0.1 °C (-9.9 to 199.9 °C) or 1 °C |
| accuracy - infrared | ±1 °C (0 to 65 °C) otherwise ±2 °C or ±2 % of reading whichever is greater |
| field of view | target ratio 12:1 |
| emissivity | 0.97 fixed |
| battery | 2 x 1.5 volt AAA |
| battery life | 140 hours continuous use |
| display | custom LCD |
| dimensions | 40 x 66 x 155 mm |
| weight | 180 grams |



RayTemp® 6 Infrared Thermometer

with 8 dot circular laser for precise targeting

- max/min, display hold & backlight functions
- adjustable emissivity for multi-surface
- temperature range -60 to 550 °C
- robust IP54 splashproof casing



The RayTemp 6 infrared thermometer is a compact, durable and easy to use instrument, simply aim and pull the trigger to display the temperature of the item being measured.

Each thermometer incorporates an eight dot circle laser indicator, which allows you to precisely target the diameter of the area to be measured. As you move closer or further from the target the laser circle changes diameter. The unit incorporates a 12:1 optic ratio (target distance/diameter ratio) and features an adjustable emissivity which allows the user to measure a variety of surface types.

The RayTemp 6 has a clear, easy to read, custom LCD display that features a backlight for when ambient light levels are low and an auto-power off facility that turns the instrument off after 35 seconds when not in use, maximising battery life.

Housed in a robust IP54 splashproof case, the RayTemp 6 features a three-button keypad, allowing the user to select °C/°F, display hold or one of the many mode options available, i.e. max, min, differential or average temperature.

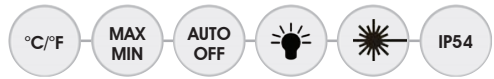


optional accessory

- protective nylon pouch with belt strap (830-040)

low cost calibration checker

The Comparator provides an inexpensive way of checking the temperature of infrared thermometers when used in conjunction with a Reference thermometer, see pages 93 and 94 for details.



| order code | description |
|------------|------------------------|
| 814-075 | RayTemp 6 |
| 830-040 | protective nylon pouch |
| 834-740 | ABS carrying case |
| 814-132 | Comparator |

| specification | RayTemp 6 |
|---------------------|---|
| range | -60 to 550 °C |
| resolution | 0.1 °C/°F |
| accuracy - infrared | ±2 % of reading or ±2 °C whichever is greater |
| field of view | target ratio 12:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery | 2 x 1.5 volt AAA |
| battery life | 14 hours continuous use |
| display | custom LCD |
| dimensions | 40 x 73 x 146 mm |
| weight | 195 grams |



RayTemp® 8 Infrared Thermometer

with integral type K thermocouple socket

- temperature range IR -60 to 500 °C, probe -64 to 1370 °C
- includes differential & average temperatures
- 2-in-1 instrument
- target ratio 12:1



The RayTemp 8 portable infrared thermometer is compact, lightweight and easy to use. Simply aim and pull the trigger to display the temperature of the item being measured. The thermometer displays temperature over the range of -60 to 500 °C.

Featuring a clear, easy to read, LCD display with low battery indication, the RayTemp 8 incorporates an auto-power off facility that turns the instrument off after 60 seconds, maximising battery life. The unit features an eight dot circle laser indicator, which allows you to precisely target the diameter of the area to be measured. As you move closer or further from the target the laser circle changes diameter.

The three-button keypad, allows the user to select °C/°F and max/min. Additionally, the difference between the max and min temperature and the average temperature can be displayed.

two instruments in one

The RayTemp 8 incorporates a miniature thermocouple type K probe socket that enables a wide range of type K thermocouple probes to be used for a variety of temperature measurement applications, including air, liquid and surface temperatures. For details of compatible type K thermocouple probes, see pages 59 to 64.



RayTemp 8 infrared kit

each kit contains:

- RayTemp 8 infrared thermometer (814-045)
- penetration probe (123-160)
- FREE mini tub of 70 Probe Wipes (836-022)
- FREE ABS carrying case (834-740)



| order code | description |
|------------|------------------------|
| 814-045 | RayTemp 8 |
| 860-845 | RayTemp 8 kit |
| 830-040 | protective nylon pouch |
| 834-740 | ABS carrying case |

the RayTemp 8 is exclusive of probe

| specification | RayTemp 8 |
|---------------------|---|
| range - infrared | -60 to 500 °C |
| range - probe | -64 to 1370 °C |
| resolution | 0.1 °C/°F (-9.9 to 199.9 °C) or 1 °C |
| accuracy - infrared | ±2 % of reading or ±2 °C whichever is greater |
| accuracy - probe | ±1 % of reading or ±1 °C whichever is greater |
| field of view | target ratio 12:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery & life | 2 x 1.5 volt AAA - 180 hours continuous use |
| display | custom LCD |
| dimensions | 40 x 66 x 155 mm |
| weight | 185 grams |



RayTemp[®] 28 Infrared Thermometer

ideal for high temperature applications

- auto-power off, display hold & backlight functions
- wide temperature range -50 to 1370 °C
- robust IP54 housing for durability
- dual laser for precise targeting

The RayTemp 28 is a professional infrared, non-contact thermometer with dual laser dot alignment, incorporating a 30:1 optic ratio (target distance/diameter ratio), enabling users to measure small targets from a distance or any item that is difficult to reach.

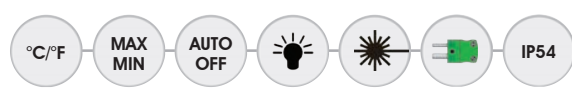
Featuring a three-button keypad, the RayTemp 28 allows the user to select the mode required, i.e. max, min, differential or average temperatures, view the max/min and configurable high/low alarms. Adjustable emissivity enabling the user to measure a variety of surface types.

The unit has a clear, easy to read, custom LCD display that features a backlight for when ambient light levels are low and an auto-power off facility that turns the instrument off after 35 seconds, maximising battery life. The thermometer is housed in a robust IP54 splashproof case to help reduce the possibility of damage in harsh environments and is supplied in a protective ABS carrying case.



two instruments in one

The RayTemp 28 incorporates a miniature thermocouple type K probe socket that enables a wide range of type K thermocouple probes to be used for a variety of temperature measurement applications, including air, liquid and surface temperatures. For details of compatible type K thermocouple probes, see pages 59 to 64.



| specification | RayTemp 28 |
|---------------------|--|
| range - infrared | -50 to 1350 °C |
| range - probe | -50 to 1370 °C |
| resolution | 0.1 °C to 1000 °C thereafter 1 °C |
| accuracy - infrared | ±2 °C (0 to 1350 °C) otherwise ±4 °C or ±4 % of reading whichever is greater |
| accuracy - probe | ±1 °C or ±1 % of reading whichever is greater |
| field of view | target ratio 30:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery & life | 9 volt PP3 - 40 hours continuous use |
| display | custom LCD |
| dimensions | 83 x 95 x 192 mm |
| weight | 275 grams |

| order code | description |
|---|-------------|
| 814-028 | RayTemp 28 |
| <i>the RayTemp 28 is exclusive of probe</i> | |



RayTemp® 38 Infrared Thermometer

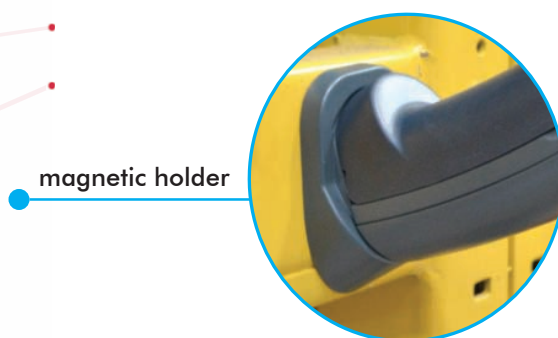
for measuring small surface areas at greater distances

- auto-power off & backlight functions
- wide range -59.9 to 999.9 °C
- robust housing for durability
- high target ratio 50:1

The RayTemp 38 is a professional infrared, non-contact thermometer with dual laser dot alignment that incorporates a 50:1 optic ratio (target distance/diameter ratio), this enables users to measure small targets from a distance. The user stands a safe and comfortable distance from the target, points the thermometer at the surface to be measured, pulls the trigger and instantly reads the temperature. Ideal for measuring the temperature of any item that is difficult to reach. This enables the user to measure most surfaces accurately and quickly.

Measuring the surface temperature over the range of -59.9 to 999.9 °C with a 0.1 °C/°F resolution, the RayTemp 38 incorporates an auto-power off facility that turns the instrument off after 60 seconds, this function can be disabled, if required. Each unit incorporates a backlit custom LCD display that indicates both the temperature and the emissivity. The thermometer features a four-button keypad, allowing the user to select the mode required, i.e. max, min, differential and average temperatures, view the max/min high and low alarms and adjust the emissivity from 0.1 to 1.0 in 0.01 increments (default set at 0.95).

The RayTemp 38 is two instruments in one as it incorporates a thermocouple socket that will accept a type K thermocouple probe, see pages 59 to 64 for available probes. Each RayTemp 38 is supplied in a protective ABS carrying case. An optional strong magnetic holder is also available. The holder screws into the bottom of the thermometer's housing, allowing the unit to be mounted onto a metal surface for continuous monitoring.



| order code | description |
|------------|-----------------|
| 814-038 | RayTemp 38 |
| 814-150 | magnetic holder |

the RayTemp 38 is exclusive of probe

| specification | RayTemp 38 |
|---------------------|---|
| range - infrared | -59.9 to 999.9 °C |
| resolution | 0.1 °C/°F |
| accuracy - infrared | ±2 % of reading or ±2 °C whichever is greater |
| field of view | target ratio 50:1 |
| emissivity | 0.95 default - adjustable 0.1 to 1 |
| battery | 2 x AAA alkaline |
| battery life | 180 hours continuous use |
| display | custom LCD |
| dimensions | 47 x 170 x 240 mm |
| weight | 395 grams |





Remote Temperature Monitoring

ThermaData® loggers, WiFi or *Bluetooth*®



We have used our vast experience in temperature measurement, together with the latest technology, to create the ThermaData range of small, cost-effective, data-loggers, WiFi loggers and *Bluetooth*® wireless thermometers. All of which have been designed for ease of use and reliability.

applications for remote monitoring

There are many uses for data-loggers, WiFi loggers and *Bluetooth*® wireless thermometers for example, to ensure compliance with legislation, to help save costs, to ensure the quality of a product, process, or for research purposes in the following industries:

- food processing
- agriculture
- laboratories
- refrigeration
- environmental
- logistics
- museums & archives
- medical

The EC food industry directive suggests that organisations involved in food preparation, storage or transportation should have the ability to verify that the temperature of food has been kept at the correct levels. This is often referred to as due diligence. ThermaData loggers offer organisations a method of complying with food industry legislation by providing traceability from the moment the food is received to the time it is delivered to the customer. For shippers, data-loggers can verify that conditions inside the transportation vehicles have been maintained within the specified levels.

For growers of fresh produce, ThermaData loggers provide an accurate record of temperatures during the life cycle of a product, from farm to plate, i.e. during growth, preparation and transportation of produce, thus ensuring best quality.

The ThermaData WiFi loggers utilise the latest WiFi wireless technology. The WiFi loggers are a temperature monitoring system that remotely record the temperature of appliances and buildings. Each logger transmits the recorded data to a WiFi router connected to the internet which can be remotely accessed and viewed from a PC, laptop or tablet anywhere in the world.

The *Bluetooth*® wireless thermometers and probes transmit temperature data to your Android, iOS or *Bluetooth*® wireless device via a secure connection. These thermometers and probes have been specifically designed to eliminate the need for wires and connectors which often cause many traditional probes to break or fail.

UKAS Certificates of Calibration

Our in-house UKAS calibration laboratory offers certification for both temperature and humidity data-loggers. Each certificate indicates deviations from standards at various temperature or humidity check points. See pages 101 and 102 for more information.



ThermaData® Logger

temperature recording thermometers

- waterproof housing offering IP66/67 protection
- temperature range -40 to 85 °C or 125 °C
- resolution 0.1 °C, high accuracy ± 0.5 °C
- meets EN 12830, S & T, C & D, 1

The ThermaData logger Mk2 series consists of a comprehensive range of portable data-loggers utilising the latest in electronic technology. The ThermaData loggers are housed in waterproof, ergonomic cases that are designed to meet IP66/67 protection.

The ThermaData logger Mk2 range offers the choice of either blind data-loggers or data-loggers with an LCD display. Other options include internal and external temperature sensors/probes. The external probes can be either fixed or detachable via a waterproof three-pin connector. The remote temperature probes are supplied with either a one, two or three metre (where stated) PVC/PFA (*fixed*) or PUR/PVC (*detachable*) lead.

Each logger incorporates a red and green LED, the flashing green LED indicates that the logger is active/logging and the flashing red LED indicates that your customised preset alarms have been exceeded. For details of the range of loggers, see overleaf.



ThermaData Studio software

The ThermaData logger is connected to a PC via a USB cradle. By selecting the relevant icon the data can be downloaded and displayed either as a graph, table or summary. The information can be analysed by zooming in, saving as a Studio File or exporting as a text (.txt) or Excel (.xls) file to other software packages.

The ThermaData Studio software incorporates several useful functions, including the ability to display two traces on a graph, the trace colours are user selectable. All files can be viewed as thumbnail icons for easy identification.

The ThermaData Studio software will work equally with all ThermaData loggers. The software is both powerful and sophisticated, yet user-friendly enabling temperature data to be organised and analysed to provide management information. The software allows the user to programme the logging sample/interval rate (0.1 to 255 minutes), the real-time clock, °C or °F, delayed start (maximum 23 hours, 59 minutes and 59 seconds) or select a magnetic start option. It is also possible to include a 32-character user ID for each logger.

By selecting continuous logging in the software options, it is possible to start the ThermaData logger only once and never have to reset its parameters again, even if downloaded regularly. Unlike most low cost loggers, the ThermaData logger will continue recording during and after downloading the data.

The ThermaData Studio software is supplied with each USB cradle. **Please note:** when initially ordering loggers it is necessary to order at least one ThermaData logger cradle.



ThermaData logger - model TB

blind with an internal sensor



- NTC thermistor sensor
- -40 to 85 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 295-001 | model TB |

ThermaData logger - model TD

LCD with an internal sensor



- NTC thermistor sensor
- -30 to 85 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 296-001 | model TD |

ThermaData logger - model TBF

blind logger with an external fixed sensor



- NTC thermistor sensor
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -40 to 125 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 295-101 | model TBF |

ThermaData logger - model TDF

LCD with an external fixed sensor



- NTC thermistor sensor
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -40 to 125 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 296-101 | model TDF |

ThermaData logger - model TB1F

blind with an internal & external fixed sensor



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -40 to 85 °C (internal)
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 295-011 | model TB1F |

ThermaData logger - model TD1F

LCD with an internal & external fixed sensor



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -30 to 85 °C (internal)
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 296-011 | model TD1F |

ThermaData logger - model TBC*

blind with an external sensor with connector



- NTC thermistor sensor
- Ø3.3 x 100 mm probe, 1 metre PUR/PVC lead
- range of -40 to 125 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 295-501 | model TBC |

ThermaData logger - model TDC*

LCD with an external sensor with connector



- NTC thermistor sensor
- Ø3.3 x 100 mm probe, 1 metre PUR/PVC lead
- range of -40 to 125 °C
- records up to 4000 readings

| order code | description |
|------------|-------------|
| 296-501 | model TDC |

ThermaData logger - model TB2F

blind with two external fixed sensors



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 295-111 | model TB2F |

ThermaData logger - model TD2F

LCD with two external fixed sensors



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PVC/PFA lead
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 296-111 | model TD2F |

ThermaData logger - model TB2C*

blind with two external sensors with connectors



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PUR/PVC lead
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 295-551 | model TB2C |

ThermaData logger - model TD2C*

LCD with two external sensors with connectors



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PUR/PVC lead
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 296-551 | model TD2C |

ThermaData logger - model TD1C*

LCD with an internal & external sensor with connector



- NTC thermistor sensors
- Ø3.3 x 100 mm probe, 1 metre PUR/PVC lead
- -30 to 85 °C (internal)
- -40 to 125 °C (external)
- records up to 2 x 2000 readings

| order code | description |
|------------|-------------|
| 296-051 | model TD1C |

USB cradle, software & start magnet



This logger cradle is supplied complete with ThermaData Studio software and a start magnet.

Each USB cradle is supplied with a 1 metre PVC lead.

| order code | description |
|------------|---------------------------------|
| 293-804 | cradle, software & start magnet |

| specification | all models |
|------------------|------------------------------------|
| range - internal | -30/-40 to 85 °C - model dependant |
| range - external | -40 to 125 °C - model dependant |
| resolution | 0.1 °C |
| accuracy | ±0.5 °C (@ ambient -10 to 85 °C) |
| memory | 4000 or 2 x 2000 readings |
| sample rate | 0.1 to 255 minutes |
| battery | 3.6 volt ½ AA lithium |
| battery life | approximately 18 months |
| display - blind | 2 LED's |
| display - LCD | 10 mm LCD/2 LED's |
| dimensions | Ø76 x 23 mm |
| weight | 71 to 113 grams - model dependant |

optional accessories



Loggers are supplied with a white seal as standard, however coloured seals are available in packs of seven colours: black, blue, brown, green, red, white and yellow. This allows for colour-coding in various applications.

An optional protective silicone boot is also available.

| order code | description |
|------------|----------------------------------|
| 830-270 | protective silicone boot - white |
| 296-990 | coloured seals - pack of seven |

* for alternative NTC thermistor temperature probes for use with these ThermaData loggers, see page 67

ThermaData® WiFi Loggers

wireless temperature monitoring

- email alerts user when alarm limits are exceeded
- access temperature data worldwide via internet
- programmable high/low alarm
- user friendly, simple setup



The new ThermaData WiFi loggers utilise the latest WiFi wireless technology. The loggers are a battery powered, cost-effective, temperature monitoring system that remotely records the temperature of appliances and buildings. Each logger transmits the recorded data to a WiFi router connected to the internet which can be accessed and viewed from a PC, laptop or tablet anywhere in the world.

The loggers have a range limited to the specification of the users WiFi router. Each logger has a intuitive LCD displaying temperature, WiFi connection status, max/min recorded temperatures, alarm status and battery life.

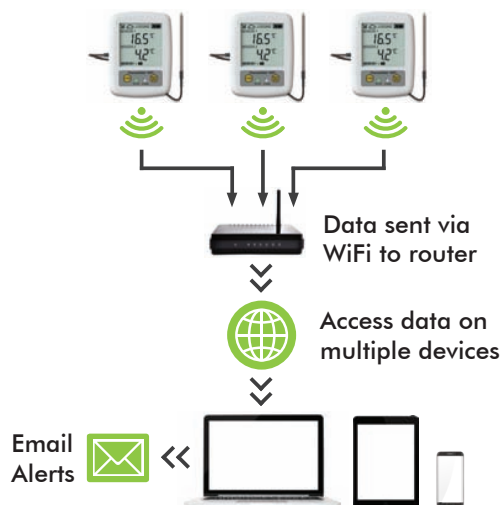
At programmable intervals, the loggers will record temperature from both sensors, recording up to a maximum of 18000 readings (9000 from each sensor). Each logger incorporates a red and green LED. The flashing green LED indicates that the logger is active/logging and the flashing red LED indicates that your customised preset alarms have been exceeded. Each unit is supplied with a USB lead. ThermaData Studio software is available to download FREE from our website and is licence free, no ongoing or subscription charges.

How does the ThermaData WiFi logger work?

Using the unique ID of each logger ThermaData Studio creates a secure connection between logger and software which can be accessed and viewed anytime and anywhere with an internet connection. Each logger communicates directly to the WiFi router at set intervals to push data through the internet into ThermaData Studio. The information is available to be analysed and exported into a report format.



Simple setup and easy to use software makes the ThermaData® WiFi loggers perfect for HACCP analysis



ThermaData Studio Software

Both powerful and sophisticated, yet user-friendly, the ThermaData Studio software enables temperature data to be organised and analysed to provide management information.

The ThermaData Studio software has the ability to display up to 32 traces on a graph, the trace colours are user selectable. All files can be viewed as thumbnail icons for easy identification.

The software allows the user to programme the logging sample/interval rate (0.1 to 330 minutes), communication interval (sync) with PC, real-time clock, °C or °F and a manual start option. It is also possible to include a user ID for each logger.

Please note: WiFi routers have a range of 100 metres depending on the make, model, capabilities and setup of the router. Environmental conditions may also affect the signal strength.



ThermaData® WiFi Two Channel Thermistor Loggers

The ThermaData® WiFi thermistor loggers are supplied with a stainless steel general purpose probe (Ø3.3 x 100 mm) with a one metre PUR/PVC fixed lead which are suitable for a wide range of remote monitoring applications. **Please Note:** Model TD1F is supplied with one external remote probe and an internal sensor. Model TD2F is supplied with two external remote probes.

| specification | model TD1F | model TD2F |
|------------------|-------------------------------------|---------------|
| range - internal | 0 to 50 °C | n/a |
| range - external | -40 to 125 °C | -40 to 125 °C |
| resolution | 0.1 °C/°F | |
| accuracy | ±0.5 °C | |
| memory | 18000 or 2 x 9000 readings | |
| sample rate | 0.1 to 330 minutes | |
| battery & life | 2 x 1.5 volt AA - approx. 12 months | |
| display | 12 mm LCD/2 LED's | |
| dimensions | 29 x 72.5 x 96 mm | |
| weight | 165 grams | |



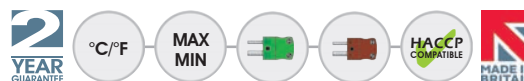
| order code | description |
|------------|-------------|
| 298-011 | model TD1F |
| 298-111 | model TD2F |

inclusive of thermistor probes

ThermaData® WiFi Two Channel Thermocouple Loggers




The ThermaData® WiFi thermocouple loggers are available in two sensor types, type K and type T thermocouple. **Please Note:** Each logger is supplied exclusive of probes, please see below for a small selection of probes available or for alternative designs see pages 59 to 64 or contact our sales office.

| specification | ThermaData WiFi - Thermocouple |
|----------------|-------------------------------------|
| range - type K | -100 to 1372 °C |
| range - type T | -100 to 400 °C |
| resolution | 0.1 °C/°F to 999.9 thereafter 1 °C |
| accuracy | ±0.4 °C ±0.1 % of reading |
| memory | 18000 or 2 x 9000 readings |
| sample rate | 0.1 to 330 minutes |
| battery & life | 2 x 1.5 volt AA - approx. 12 months |
| display | 12 mm LCD/2 LED's |
| dimensions | 29 x 72.5 x 96 mm |
| weight | 165 grams |



| order code | description |
|------------|----------------------|
| 298-121 | model TD2TC - type K |
| 298-721 | model TD2TC - type T |

exclusive of thermocouple probes

| | | order code |
|--|--|--|
| general purpose probe  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. <ul style="list-style-type: none"> • response time less than 3 seconds • probe temperature range -75 to 250 °C | 133-158 |
| food simulant probe  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. <ul style="list-style-type: none"> • probe temperature range 0 to 100 °C | 133-350 |
| 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. <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -75 to 250 °C | 133-372 (1000 mm) 133-373 (2000 mm) |

Please note: for type T thermocouple probes, replace the third digit (3) of the order code with the number 7

ThermaData® Loggers

humidity & temperature recording meters

- display toggles between humidity & temperature
- records up to a maximum of 16000 readings
- visual display of high & low alarm status
- choice of internal or remote sensors

The humidity and temperature ThermaData loggers measure and record both temperature and relative humidity (%rh) over the range of -20 to 85 °C and 0 to 100 %rh. At programmable intervals, the loggers will record simultaneously both temperature and humidity, recording up to a maximum of 16000 readings (8000 humidity and 8000 temperature).

With a choice of either LCD or a blind display, both options include an internal or external humidity and temperature sensor with a one metre lead. Each ThermaData logger incorporates two LED's, a flashing green LED indicates that the logger is active/logging and a flashing red LED indicates that your customised preset alarms have been exceeded.

The humidity and temperature ThermaData loggers are suitable for a diverse range of applications which include HVAC climate monitoring, QA monitoring of storage areas etc.



ThermaData Studio software

The ThermaData logger is connected to a PC via a USB cradle. By selecting the relevant icon the data can be downloaded and displayed either as a graph, table or summary. The information can be analysed by zooming in, saving as a Studio File or exporting to Excel (.xls) or as a text (.txt) file to other software packages.

Please note: when initially ordering these loggers, it is necessary to order at least one ThermaData logger cradle.



| order code | description | |
|------------|-------------------------------------|--|
| 295-061 | blind model HTB - internal sensors | |
| 296-061 | LCD model HTD - internal sensors | |
| 295-062 | blind model HTBF - external sensors | |
| 296-062 | LCD model HTDF - external sensors | |
| 293-804 | USB cradle, software & magnet | |
| 890-111 | *UKAS 3-point Certificate | |

**price when purchased with a new instrument*



| specification | temperature | humidity |
|---------------|---|-------------------------------|
| range | -20 to 85 °C | 0 to 100 %rh |
| resolution | 0.1 °C | 0.1 %rh |
| accuracy | ±0.5 °C (0 to 45 °C) ±1 °C (-20 to 70 °C) ±1.5 °C (70 to 85 °C) | ±3 %rh @ 25 °C (10 to 90 %rh) |
| hysteresis | n/a | ±1 %rh |
| sensor type | silicon bandgap | capacitance polymer |
| memory | 2 x 8000 readings | |
| sample rate | 0.1 to 255 minutes | |
| battery | 3.6 volt ½ AA lithium | |
| battery life | minimum 2 years | |
| display | 10 mm LCD - toggles every 6 seconds/2 LED's | |
| dimensions | Ø76 x 23 mm | |
| weight | 80 grams approx. - model dependant | |

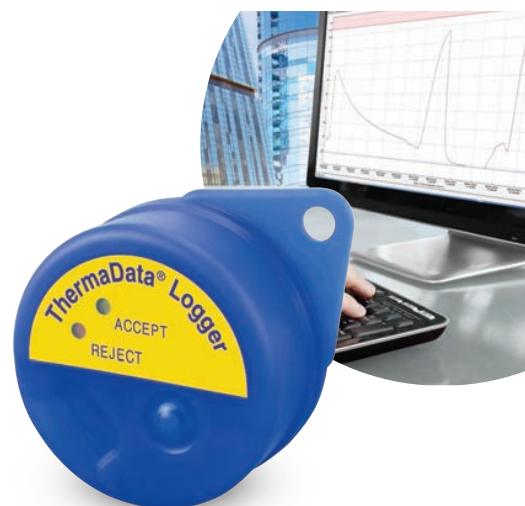
optional UKAS Certificate of Calibration available



ThermaData® Logger

blind recording thermometers

- visual display shows if limits are exceeded
- customised high/low alarm facility
- temperature range -40 to 85 °C
- 2 year guarantee



The ThermaData logger is a cost effective, self-contained temperature data-logger or blind recording thermometer that is designed to record the temperature of the surrounding environment. The ThermaData logger is housed in a water resistant polyethylene case and incorporates two LED status indicators.

The ThermaData Studio software allows the user to programme the logging sample/interval rate (1 to 255 minutes), the real-time clock, °C/°F, delayed start (maximum 23 hours, 59 minutes) or push-button start and a 12-character user ID. The software also incorporates a password protected calibration adjustment feature that allows the user to check the calibration of loggers and make minor adjustments of 0.5 °C (±3 °C).

By selecting continuous logging in the software options, it is possible to start the ThermaData logger only once and never have to reset its parameters again, even if downloaded regularly. Unlike most low cost loggers, the ThermaData logger will continue recording during and after downloading the data.

The user can also set, within the software, high and low alarm values for a specific application. A push of the button will allow a simple visual inspection of the unit to show if either of these limits have been exceeded. A flashing red LED will warn the user that the alarm limits have been exceeded (reject) or a flashing green LED will advise the user that the alarm limits have not been exceeded (accept).

ThermaData Studio software

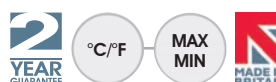
- The ThermaData logger is connected to a PC via a USB port lead. By selecting the relevant icon the data can be downloaded and displayed either as a graph, table or summary. The information can then be analysed by zooming in, saving as a Studio File or exporting to other software packages.



colour-coded data-loggers

- Available in a variety of coloured cases; blue, white, yellow, green, red, brown and black. These colour-coded cases help to prevent cross-contamination by allowing the user to allocate a colour to a specific product or application. For example, in the food industry, green may be used for salads, blue for fish and red for raw meats etc.

Other applications include different coloured loggers for easy identification in for example; the building and construction industry where loggers can often blend in with the environment.



| order code | description |
|------------|----------------------------|
| 293-001 | ThermaData logger - blue |
| 293-105 | ThermaData logger - white |
| 293-205 | ThermaData logger - yellow |
| 293-305 | ThermaData logger - green |
| 293-405 | ThermaData logger - red |
| 293-605 | ThermaData logger - brown |
| 293-701 | ThermaData logger - black |
| 293-104 | software & USB lead |

| specification | ThermaData logger |
|---------------|--|
| range | -40 to 85 °C |
| resolution | 0.5 °C |
| accuracy | ±1 °C (±0.5 °C with calibration utility) |
| memory | 2048 temperature readings |
| sample rate | 1 minute to 255 minutes |
| battery | 3.6 volt ½ AA lithium |
| battery life | minimum 3 years |
| dimensions | Ø55 x 25 mm |
| weight | 45 grams |



Stainless Steel ThermaData® Loggers

blind recording thermometers

- integral USB interface for setup & download
- high temperature range -20 to 105 °C
- food grade 316 stainless steel housing
- 5 probe lengths available



These stainless steel data-loggers are ideal for food, pharmaceutical and other applications where a high temperature data-logger is required. The ThermaData logger is housed in a waterproof, food grade 316 stainless steel case to protect the logger from corrosion, impact and moisture (IP66/67).

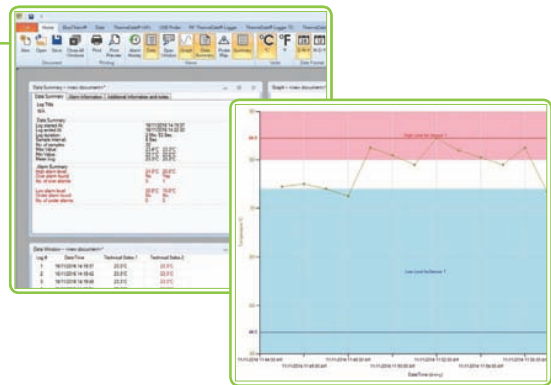
The ThermaData logger software allows the user to programme the logging sample/interval rate (1 to 255 minutes), the real-time clock, °C/°F, delayed start (maximum 23 hours, 59 minutes) and a 12-character user ID. The software also incorporates a password protected calibration adjustment feature that allows the user to check the calibration of loggers and make minor adjustments of 0.5 °C (±3 °C).

By selecting continuous logging in the software options, it is possible to start the logger only once and never have to reset its parameters again, even if downloaded regularly. Unlike most low cost loggers, the ThermaData stainless steel logger will continue recording during and after downloading the data.

The ThermaData logger is available in five options; without a probe, with a Ø3.3 x 50 mm penetration probe or Ø4.5 x 100 mm, Ø4.5 x 150 mm or Ø4.5 x 200 mm penetration probe, all with a Ø3.3 reduced tip. Each logger is supplied with a two metre USB lead and ThermaData Studio software.

ThermaData Studio software

The ThermaData logger is connected to a PC via the internal USB connector or a USB lead (supplied). By selecting the relevant icon the data can be downloaded and displayed either as a graph, table or summary. The user can also set, within the software, high and low alarm values for a specific application. The information can then be analysed by zooming in, saving as a Studio File or exporting to other software packages.



USB Connection Point

Simply unscrew the end cap to access the USB port. This allows the user to connect the logger to a PC and upload any data collected.

| order code | description |
|--|--|
| 293-900 | stainless steel logger - without probe |
| 293-930 | stainless steel logger - 50 mm probe |
| 293-931 | stainless steel logger - 100 mm probe |
| 293-932 | stainless steel logger - 150 mm probe |
| 293-933 | stainless steel logger - 200 mm probe |
| <i>supplied with a two metre USB lead & ThermaData Studio software</i> | |

2 YEAR GUARANTEE

°C/°F

MAX MIN

IP66/ IP67

MADE IN BRITAIN

| specification | Stainless Steel ThermaData logger |
|---------------|--|
| range | -20 to 105 °C |
| resolution | 0.5 °C |
| accuracy | ±1 °C (±0.5 °C with calibration utility) |
| memory | 2048 temperature readings |
| sample rate | 1 minute to 255 minutes |
| battery | 3.6 volt 2/3 AA lithium |
| battery life | minimum 3 years |
| dimensions | Ø22.5 x 129 mm (excluding probe) |
| weight | 170 grams - model dependant |



Thermocouple ThermaData® Loggers

for high temperature applications

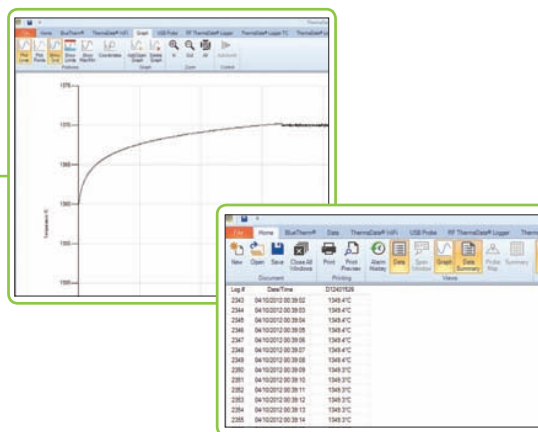
- water resistant housing offering IP65 protection
- 2 channel type K or type T thermocouple input
- wide temperature range -100 to 1372 °C
- visual display of high & low alarm status

These two input Thermocouple ThermaData loggers are housed in a water resistant, ergonomic case that is designed to meet IP65 protection. Two models are available, either blind or with an LCD display.

The ThermaData loggers measure temperature over the range of -100 to 1372 °C (type K thermocouple) with a 0.1 °C resolution, auto-ranging to 1 °C over the range of 301 to 1372 °C. At programmable intervals the loggers will record the temperature, up to a maximum of 16000 readings or 2 x 8000 readings.

Each logger incorporates a red and green LED, the flashing green LED indicates that the logger is active/logging and the flashing red LED indicates that your customised preset alarms have been exceeded. Each logger is supplied with a USB lead and ThermaData Studio software.

For details of the wide range of interchangeable type K or T thermocouple probes available, see pages 59 to 64.



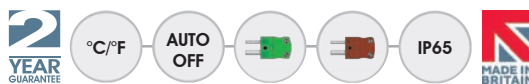
ThermaData Studio software

The ThermaData logger is connected to a PC via a USB port lead. By selecting the relevant icon the data can be downloaded and displayed either as a graph, table or summary. The information can then be analysed by zooming in, saving as Studio File or exporting to other software packages.

USB Connection Point



Simply remove the end cap to access the USB port. This allows the user to connect the logger to a PC via the USB lead (supplied) and upload the temperature readings collected.



| order code | description |
|------------|----------------------------------|
| 291-501 | T/C TD logger type K - blind |
| 292-501 | T/C TD logger type K - LCD |
| 291-571 | T/C TD logger type T - blind |
| 292-571 | T/C TD logger type T - LCD |
| 830-210 | protective silicone boot - white |
| 832-950 | flexible tripod |

T/C ThermaData loggers are exclusive of probes

| specification | T/C ThermaData logger |
|--------------------|----------------------------------|
| range - type K t/c | -100 to 1372 °C |
| range - type T t/c | -100 to 400 °C |
| operating range | -20 to 50 °C |
| resolution | 0.1 °C to 300 °C thereafter 1 °C |
| accuracy | ±0.4 °C ± 0.1 % |
| memory | 16000 or 2 x 8000 readings |
| battery | AA Tadiran - Li-SOCI |
| battery life | maximum 3 years @ 20 °C |
| sensor type | K or T thermocouple |
| display | 10 mm LCD |
| dimensions | 35 x 67 x 109 mm |
| weight | 200 grams |



BlueTherm[®] One

with *Bluetooth*[®] LE wireless technology

- water resistant housing offering IP65 protection
- interchangeable thermocouple probes

The BlueTherm One thermometer transmits temperature data to your iOS, Android or *Bluetooth*[®] wireless device via a secure connection of up to 50 metres. This thermometer is specifically designed to eliminate the need for wires which often cause many traditional probes to break or fail.

Each unit is housed in an ergonomic case and incorporates a large LCD and a single LED which indicates *Bluetooth*[®] connection status. A wide range of type K thermocouple probes can be connected to the BlueTherm One, see pages 39, 59 to 64 and 85 for details.

Available as a download, the 'ThermaQ App' software reads the temperature and provides simple-to-set high and low alarms. This App includes programmable alerts and notifications to prompt changes and also logs data from the probe to a graph. An SDK can also be provided on request.

| order code | description |
|--|----------------------------------|
| 292-911 | BlueTherm One LE |
| 133-153 | fast response penetration probe |
| 830-210 | protective silicone boot - white |
| 831-200 | belt clip |
| <i>the BlueTherm One is exclusive of probe</i> | |



| specification | BlueTherm One LE |
|------------------|---------------------------|
| range | -199.9 to 1372 °C |
| resolution | 0.1/1 °C/°F |
| accuracy | ±0.4 °C ±0.1 % of reading |
| Bluetooth module | Bluetooth LE |
| battery & life | 1 x AA - 3000 hours |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 34 x 66 x 112 mm |
| weight | 165 grams |

ThermaQ[®] Blue

with *Bluetooth*[®] LE wireless technology

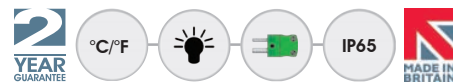
- two channel type K input - dual monitoring
- ThermaQ[®] App for iOS & Android

The new ThermaQ Blue thermometer is designed to monitor temperatures remotely. Transmitting temperature data to your iOS, Android or *Bluetooth*[®] wireless device via a secure connection of up to 50 metres.

Each unit is housed in an ergonomic case and incorporates a backlit LCD and 2 LED's which indicate alarm status. For probes to suit the ThermaQ Blue, see pages 39, 59 to 64 and 85.

Available as a download, the 'ThermaQ App' software reads two temperatures and provides simple-to-set high and low alarms. The 'ThermaQ App' can export saved data for further analysis as an Excel (.csv) file.

| order code | description |
|--|--------------------------------|
| 292-921 | ThermaQ Blue |
| 133-041 | crocodile clip oven probe |
| 133-177 | oven cooking penetration probe |
| <i>the ThermaQ Blue is exclusive of probes</i> | |



| specification | ThermaQ Blue |
|------------------|---------------------------|
| range | -199.9 to 1372 °C |
| resolution | 0.1 °C/°F |
| accuracy | ±0.4 °C ±0.1 % of reading |
| Bluetooth module | Bluetooth LE |
| battery & life | 1 x AA - 4000 hours |
| sensor type | K thermocouple |
| display | 12 mm LCD |
| dimensions | 34 x 66 x 112 mm |
| weight | 172 grams |

Please note: *Bluetooth LE* thermometers have a range of 50 metres depending on the users smart device make and model. Environmental conditions may also affect the signal strength.



BlueTherm® Probes

with *Bluetooth*® wireless technology



- securely transmits data up to 20 metres
- eliminates wires, cables & connectors

This BlueTherm Probe transmits temperature data to your Android, Windows CE mobile, iOS or *Bluetooth*® wireless device via a secure connection. The probe is specifically designed to eliminate the need for wires and connectors which often cause many traditional probes to break or fail.

Measuring and transmitting temperature over the range of -49.9 to 249.9 °C with a 0.1°C resolution, the BlueTherm Probe will securely transmit temperature data up to a maximum of 20 metres (*line of sight*).





Each probe incorporates a heavy duty ribbed, polypropylene handle with built-in red and blue LED. The flashing blue LED indicates *Bluetooth*® comms transfer, the red LED indicates on/off and power status.

The BlueTherm probe is supplied with basic 'App' software. A variety of probes are available, see below or contact our sales office for information on alternative models. An SDK can also be provided on request. Protect your BlueTherm probe against accidental damage by fitting a silicone boot - see page 34.



| specification | Probe | IR |
|------------------------|---------------------------|---|
| range | 0.1 °C | -49.9 to 249.9 °C |
| resolution | | 0.1 & 1 °C/°F |
| accuracy - probe | | ±0.4 °C ±0.1 % of reading |
| accuracy - IR | | ±2 °C or 2 % of reading (whichever is greater), below -30 °C is ±3 °C |
| Bluetooth module | Bluetooth Classic | |
| battery | 1 x AAA NiMH Rechargeable | |
| battery life - minimum | 10 hours | 8 hours |
| battery life - maximum | 36 hours* | |
| sensor type | K thermocouple | infrared |
| dimensions | Ø40 x 260 mm | Ø40 x 120 mm |
| weight | 90 grams | 65 grams |

*sample rate & host device dependant

| | | order code | |
|--|--|---|--|
| <p>fast response probe</p>  <p>Ø3.3 x 130 mm</p> | <p>This reduced tip, fast response, stainless steel penetration probe is suitable for liquids and semi-solids including fish, fruit and other soft or delicate materials.</p> <ul style="list-style-type: none"> • response time less than one second • probe temperature range -49.9 to 249.9 °C | <p>179-100 (android)</p> <p>179-200 (iOS)</p> | |
| <p>penetration probe</p>  <p>Ø3.3 x 130 mm</p> | <p>This stainless steel penetration probe is strong, versatile and is suitable for many temperature measurement applications including liquids, semi-solids and granular materials.</p> <ul style="list-style-type: none"> • response time less than three seconds • probe temperature range -49.9 to 249.9 °C | <p>179-102 (android)</p> <p>179-202 (iOS)</p> | |
| <p>BlueTherm® IR</p>  | <p>This non-contact probe is ideal for measuring surface temperatures. Simply aim to transmit the temperature to your wireless device. With a distance to target ratio of 5:1, the unit should be positioned as close to the target as possible.</p> <ul style="list-style-type: none"> • temperature range -49.9 to 249.9 °C | <p>179-400** (android)</p> <p>179-402** (iOS)</p> | |
| <p>ribbon surface probe</p>  <p>Ø8 x 130 mm</p> | <p>This ribbon surface probe utilises flat ribbon technology that ensures a fast, accurate response with minimal heat loss. Ideal for measuring the temperatures of stationary metallic surfaces.</p> <ul style="list-style-type: none"> • response time less than 0.5 of a second • probe temperature range -49.9 to 249.9 °C | <p>179-106 (android)</p> <p>179-206 (iOS)</p> | |

**Please note: All readings on models 179-400 & 179-402 are subject to correct emissivity settings and settled isothermal conditions





Calibration Equipment

for thermometers & temperature probes



Temperature is a critical measurement for ensuring the safety and quality of many products and processes. Whether monitoring temperature at the point of goods in, throughout production, final product storage or during distribution, thermometer calibration is essential.

The food industry, in particular, is very aware of the critical nature of processing temperatures as part of their HACCP procedures. The importance of thermometer calibration is not just a food safety issue, but also an economic consideration, as thermometer accuracy can affect both quality and productivity.

It is recommended that thermometers and temperature monitoring equipment be calibrated regularly. New equipment should be checked for accuracy upon receipt and before being put into service. Thermometers that are in constant use and used in critical areas should be calibrated more regularly. The definition of a regular calibration check is very much at the discretion of the user, for example, a food processing company may well decide to check thermometers daily before use, whereas a restaurant may decide that once a week is adequate.

calibration checks

Depending on the instrument and its intended temperature and use, an iced water and boiling water method can be used for checking the accuracy of a thermometer and probe. When used properly and in conjunction with a Reference thermometer, this offers a cost-effective method of calibration and verification.

Other techniques can be employed utilising dry-well and calibration baths in conjunction with a Reference thermometer. These techniques are particularly relevant and often more convenient when several thermometers and temperature probes are to be calibrated at any one time. Dry-wells and calibration baths provide variable and stable heat sources.

A Reference thermometer is an important instrument for checking the calibration of other thermometers and probes. However, it is of paramount importance that this instrument is kept for the sole purpose of verifying the accuracy of thermometers and temperature probes and has a current UKAS Certificate of Calibration.

Temperature simulators are an alternative to real-world temperature checking and are particularly useful for checking thermometers on-site or in-situ. It should be remembered, when using temperature simulators, that you are only checking the calibration of the instrument and not the system.

UKAS Certificates of Calibration

Our in-house UKAS calibration laboratory offers certification for both thermometers and probes either individually or as a system. Each UKAS Certificate of Calibration indicates deviations from standards at various temperature points.



Reference Thermometers

±0.05 °C high system accuracy



- 5-point UKAS Certificate of Calibration included
- supplied complete with high accuracy probe
- temperature range -199.99 to 199.99 °C
- ideal for calibration comparison checks

The Reference thermometers are high accuracy PT100 instruments that are supplied with a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at various check points: -18, 0, 40, 70 and 100 °C. Special points may be certified by arrangement with our UKAS calibration laboratory.

The Reference thermometers are ideal for comparison checking of the accuracy of other thermometers and probes, when used in conjunction with a stable temperature heat or chill source, see page 95. The instruments measure temperature over the range of -199.99 to 199.99 °C with a resolution of 0.01 °C and an accuracy of ±0.05 °C. The units feature a simple on/off push button with open circuit 'Err' and low battery indication, when applicable. The Reference Plus thermometer incorporates the additional features of a max/min and hold function.

The Reference thermometers are supplied with a permanently attached, high accuracy probe incorporating a 1/10th DIN PT100 sensor. The probe measures Ø3.3 x 130 mm and is supplied with a one metre PVC lead.



low cost calibration checker

The Comparator provides an inexpensive way of checking the temperature of infrared thermometers when used in conjunction with a Reference thermometer.



| specification | Reference & Reference Plus |
|---------------|--|
| range | -199.99 to 199.99 °C |
| resolution | 0.01 °C |
| accuracy | ±0.05 °C (-30 to 150 °C) ±0.1 °C (-50 to 200 °C) |
| battery | 3 x 1.5 volt AAA |
| battery life | 2000 hours |
| sensor type | PT100 1/10th DIN |
| display | 10 mm LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 210 grams |

a UKAS Certificate of Calibration is included

| order code | description |
|------------|----------------|
| 222-055 | Reference |
| 222-063 | Reference Plus |
| 814-132 | Comparator |



Reference Thermanen[®] 3

0.01 °C resolution, high accuracy thermometer



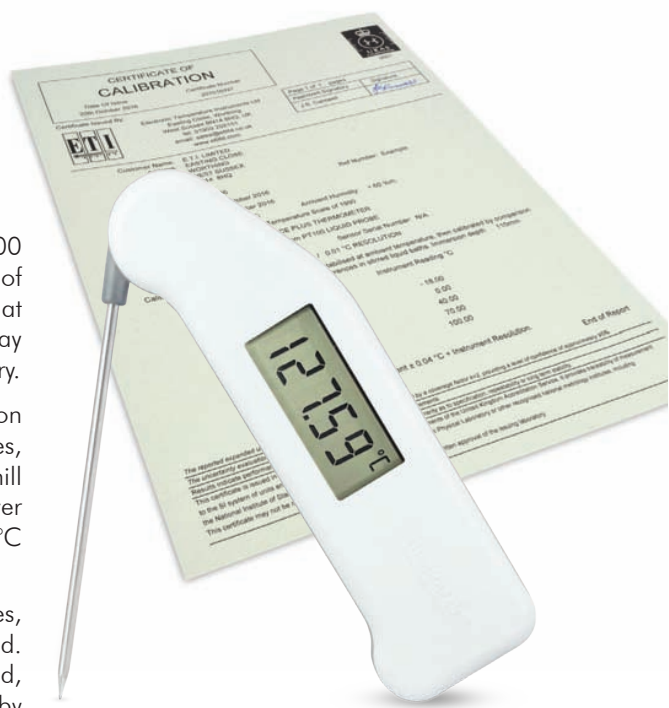
- 5-point UKAS Certificate of Calibration included
- ideal for calibration comparison checks
- one-handed operation
- 2 year guarantee

The Reference Thermanen 3 thermometer is a high accuracy PT100 instrument that is supplied with a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at various check points: -18, 0, 40, 70 and 100 °C. Special points may be certified by arrangement with our UKAS calibration laboratory.

The Reference Thermanen 3 thermometer is ideal for comparison checking of the accuracy of other thermometers and probes, when used in conjunction with a stable temperature heat or chill source, see opposite. The instrument measures temperature over the range of -69.99 to 199.99 °C with a resolution of 0.01 °C and an accuracy of ±0.07 °C.

The thermometer will power off automatically after ten minutes, maximising battery life. This feature can be disabled if not required. Both low battery (icon) and open circuit indication are displayed, when applicable. Each Reference Thermanen 3 is powered by two lithium coin cell batteries with a minimum life expectancy of 1000 hours.

The Reference Thermanen 3 incorporates a stainless steel, penetration probe (Ø3.3 x 108 mm) that conveniently folds back through 180° into the side of the instrument when not in use.



● supplied in a zip pouch with belt strap



optional accessories

- **new** stainless steel wall bracket (832-002)
- protective PVC wallet with belt strap (830-110)
- protect your instrument against high temperatures and accidental damage by fitting a protective silicone boot (830-260)



| order code | description |
|------------|------------------------------|
| 222-213 | Reference Thermanen 3 |
| 830-260 | protective silicone boot |
| 830-265 | silicone boot - glow in dark |
| 830-110 | protective wallet |
| 832-002 | s/steel wall bracket |

the Thermanen is supplied in a zip pouch (830-001)

| specification | Reference Thermanen 3 |
|---------------|---|
| range | -69.99 to 199.99 °C |
| resolution | 0.01 °C |
| accuracy | ±0.07 °C (-30 to 149.99 °C) otherwise ±0.2 °C |
| battery | 2 x 3 volt CR2032 lithium coin cell |
| battery life | 1000 hours |
| sensor type | PT100 |
| display | 12 mm LCD |
| dimensions | 19 x 47 x 153 mm |
| weight | 97 grams |

a UKAS Certificate of Calibration is included



3000 Series Dry-Well

small & lightweight calibrators

- ideal for checking the accuracy of thermometers
- portable temperature heat source

The 3000 dry-well calibrators are small and lightweight heat sources, ideal for checking the accuracy of digital thermometers and temperature probes. The units have a temperature range of 33 to 300 °C with a resolution of 0.1 °C.

The dry-wells offer a high level of stability (± 0.5 °C) and a stabilisation time of five minutes. Plug it in, switch it on, set the verification temperature with the front panel buttons and insert your probe into the correct size well. Compare the temperature reading of your thermometer against the display and the difference is the error.

The 3001 dry-well will accept probe sizes $\varnothing 3.3$, 4, 4.76 and 6.35 mm. The 3002 dry-well will accept probe sizes $\varnothing 3.3$, 4.76, 6.35 and 9.6 mm. The 3003 dry-well will accept probe sizes $\varnothing 4.76$ and 12.7 mm.

| order code | description |
|------------|---------------|
| 271-301 | 3001 dry-well |
| 271-302 | 3002 dry-well |
| 271-303 | 3003 dry-well |



| specification | 3000 series dry-wells |
|---------------|---|
| range | 33 to 300 °C |
| resolution | 0.1 °C |
| accuracy | ± 0.5 °C (33 to 199.9 °C) ± 1 °C (200 to 300 °C) |
| heating time | ambient to 300 °C after 10 mins |
| well depth | 100 mm |
| power | 230 volt AC (115 volt available) |
| dimensions | 57 x 125 x 158 mm |
| weight | 900 grams |

FREE traceable certificate of calibration included

3101 Dry-Well

heat/cool source calibrator

- ideal for checking the accuracy of thermometers
- accepts a wide variety of probe diameters

The 3101 dry-well features an easy to read LED display with a temperature range of -10 to 110 °C and a resolution of 0.1 °C. Heating time, ambient to 100 °C or cooling time, ambient to 0 °C is ten minutes.

The 3101 is excellent for checking the calibration of a wide range of instrumentation including digital thermometers and temperature probes, either above or below ambient temperature. The unit incorporates two removable wells/inserts, both $\varnothing 13$ mm in diameter and will accept probe sizes $\varnothing 3.3$, 4.1, 4.8, 6.4 and 9.6 mm. Each 3101 is supplied with two inserts of the customer's choice.

| order code | description |
|------------|--------------------------------------|
| 271-401 | 3101 dry-well |
| 271-321 | $\varnothing 3.3$ mm ID brass insert |
| 271-322 | $\varnothing 4.1$ mm ID brass insert |
| 271-323 | $\varnothing 4.8$ mm ID brass insert |
| 271-324 | $\varnothing 6.4$ mm ID brass insert |
| 271-325 | $\varnothing 9.6$ mm ID brass insert |



| specification | 3101 dry-well |
|---------------|---|
| range | -10 to 110 °C |
| resolution | 0.1 °C |
| accuracy | ± 0.5 °C (-10 to 99.9 °C) ± 1 °C (100 to 110 °C) |
| heating time | ambient to 100 °C after 10 mins |
| cooling time | ambient to 0 °C after 10 mins |
| well depth | 100 mm |
| power | 12 to 24 volt DC* |
| dimensions | 89 x 152 x 186 mm |
| weight | 1800 grams |

**supplied with 230/115 volt AC power adaptor
FREE traceable certificate of calibration included*

MicroCal 1 & 1 Plus Calibrator

simulator or simulator & thermometer

- tests thermocouple type K, J, T, R, N, S & E thermometers
- for frequent checking of thermometer accuracies
- 2 models - simulator or simulator/thermometer
- 12 adjustable temperature points

The MicroCal 1 and 1 Plus thermocouple simulators help ensure that the frequent checking of thermometer accuracies are a routine operation. Both instruments are designed to simulate a chosen temperature to test thermocouple type K, J, T, R, N, S and E thermometers without the need for specialised equipment or conversion tables. The MicroCal 1 Plus also measures and simulates temperature.

Both models feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include: °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

An optional lead set is also available, that comprises of seven leads, one for each thermocouple type K, J, T, R, N, S and E. Each PVC lead is one metre long and incorporates two miniature thermocouple plugs.

Each MicroCal is supplied with a one metre PVC type K thermocouple lead with miniature connectors and a five-point (type K) UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.

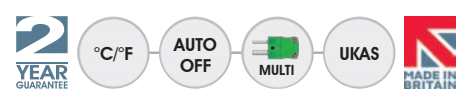


● incorporates a foot stand



| | |
|---------------------|-----------------------|
| thermocouple type K | range -200 to 1372 °C |
| thermocouple type J | range -200 to 1200 °C |
| thermocouple type T | range -270 to 400 °C |
| thermocouple type R | range 0 to 1768 °C |
| thermocouple type N | range -200 to 1300 °C |
| thermocouple type S | range 0 to 1768 °C |
| thermocouple type E | range -140 to 1000 °C |

A 5-point UKAS Certificate of Calibration is included with each MicroCal simulator



| order code | description |
|------------|--------------------------|
| 271-100 | MicroCal 1 |
| 271-101 | MicroCal 1 Plus |
| 816-100 | lead set (7 types) |
| 830-205 | protective silicone boot |
| 832-115 | acrylic wall bracket |

| specification | MicroCal 1 & MicroCal 1 Plus |
|--|---|
| range | (see table above) |
| temp points | 12 adjustable presets |
| accuracy | ±0.3 °C (dependent upon thermocouple type) |
| battery | 2 x 1.5 volt AAA |
| battery life | 300 hours |
| sensor type | thermocouple type K, J, T, R, N, S & E (selectable) |
| display | custom LCD |
| dimensions | 35 x 73 x 141 mm |
| weight | 220 grams |
| <i>a UKAS Certificate of Calibration is included</i> | |



MicroCal 2 & 3 Calibrators

temperature simulators

- type K, J or T thermocouple models available
- no need for additional specialised equipment
- 12 variable or 23 fixed temperature points
- 5-point UKAS Certificate of Calibration

The MicroCal 2 and 3 thermocouple simulators help ensure that the frequent checking of thermometer accuracies is a routine operation. Both instruments are designed to simulate a chosen temperature, allowing standard K, J or T thermocouple thermometers to be tested or re-calibrated simply and quickly, without the need for additional specialised equipment or conversion tables.

Both models feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include; °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

The MicroCal 2 has 12 preset temperatures for type K thermocouple -20, -10, 0, 10, 30, 50, 100, 195, 250, 500, 800 and 1000 °C, any of these temperatures can be modified and saved by the user. The factory default temperatures can be recalled at any time.



● protective boot



The MicroCal 3 has 23 fixed temperature points for type K thermocouple -100, -50, -20, -10, 0, 10, 20, 30, 40, 50, 60, 80, 100, 150, 195, 250, 300, 400, 500, 600, 800, 1000 and 1200 °C.

Each MicroCal is supplied with a one metre PVC lead with miniature thermocouple connectors and a five-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.

A 5-point UKAS Certificate of Calibration is included with each MicroCal simulator



| order code | description |
|------------|--------------------------|
| 271-200 | MicroCal 2 - type K |
| 271-201 | MicroCal 2 - type J |
| 271-202 | MicroCal 2 - type T |
| 271-210 | MicroCal 3 - type K |
| 271-211 | MicroCal 3 - type J |
| 271-212 | MicroCal 3 - type T |
| 830-205 | protective silicone boot |
| 832-115 | acrylic wall bracket |

| specification | MicroCal 2 | MicroCal 3 |
|---|---------------------------------------|-----------------------|
| range | (see table opposite) | |
| temp points | 12 adjustable presets | 23 fixed temperatures |
| accuracy | ±0.3 °C | ±0.5 °C |
| battery | 2 x 1.5 volt AAA | |
| battery life | 300 hours | |
| sensor type | dedicated type K, J or T thermocouple | |
| display | custom LCD | |
| dimensions | 35 x 73 x 141 mm | |
| weight | 220 grams | |
| a UKAS Certificate of Calibration is included | | |



MicroCheck

3-point checker/simulator

- for regular checking of thermometer accuracies
- 3-point UKAS Certificate of Calibration
- simple & easy to use
- 4 models available

The MicroCheck temperature checkers have been developed to verify the continuing accuracy of type K thermocouple thermometers with a 0.1 or 1 °C resolution.

All checkers feature a custom 10 mm LCD display with alpha-numeric display line to prompt the user when changing parameters. Selectable parameters include: °C/°F, auto-power off - enable/disable, CJC - internal/external and display contrast adjustment.

The MicroChecks simulate three fixed temperatures, enabling users to check the accuracy of each instrument at three known points without the need for specialist equipment.

Each MicroCheck is supplied with a one metre PVC type K thermocouple lead with miniature connectors and a three-point UKAS Certificate of Calibration. Each certificate indicates deviations from standards at the various points.



● acrylic wall bracket



| | |
|--------------|------------------------------|
| MicroCheck 1 | range 0 °C, 100 °C & 500 °C |
| MicroCheck 2 | range -20 °C, 20 °C & 200 °C |
| MicroCheck 3 | range -20 °C, 0 °C & 220 °C |
| MicroCheck 4 | range -20 °C, 0 °C & 100 °C |

other ranges are available upon request

A 3-point UKAS Certificate of Calibration is included with each MicroCheck checker



| order code | description |
|------------|--------------------------|
| 271-011 | MicroCheck 1 |
| 271-012 | MicroCheck 2 |
| 271-014 | MicroCheck 3 |
| 271-015 | MicroCheck 4 |
| 830-205 | protective silicone boot |
| 832-115 | acrylic wall bracket |



| specification | MicroCheck |
|---------------|----------------------|
| range | (see table above) |
| temp points | 3 fixed temperatures |
| accuracy | ±0.5 °C |
| battery | 2 x 1.5 volt AAA |
| battery life | 300 hours |
| sensor type | type K thermocouple |
| display | custom LCD |
| dimensions | 35 x 73 x 141 mm |
| weight | 220 grams |

a UKAS Certificate of Calibration is included



Thermistor Test Caps

supplied with a UKAS Certificate of Calibration



Calibration thermistor test caps are suitable for checking the accuracy of the Therma 20, Therma 22 or any equivalent thermistor thermometer.

Simply plug in the desired test cap and the display on the thermometer should show the same temperature as the certified value.

Each test cap is supplied with a UKAS Certificate of Calibration with a guaranteed uncertainty of $\pm 0.1^\circ\text{C}$.



| order code | description |
|------------|---|
| 286-001 | thermistor test cap -18°C |
| 286-002 | thermistor test cap 0°C |
| 286-003 | thermistor test cap 3°C |
| 286-004 | thermistor test cap 70°C |
| 286-005 | thermistor test cap 100°C |

a UKAS Certificate of Calibration is included

PT100 Test Caps

supplied with a UKAS Certificate of Calibration



Calibration PT100 test caps are suitable for checking the accuracy of the Precision PT100 thermometer or any platinum resistance thermometer fitted with a Binder connector.

Simply plug in the test cap and the display on the thermometer should show the same temperature as the certified value.

Each test cap is supplied with a UKAS Certificate of Calibration with a guaranteed uncertainty of $\pm 0.1^\circ\text{C}$.



| order code | description |
|------------|------------------------------------|
| 282-001 | PT100 test cap -18°C |
| 282-002 | PT100 test cap 0°C |
| 282-003 | PT100 test cap 3°C |
| 282-004 | PT100 test cap 70°C |
| 282-005 | PT100 test cap 100°C |

a UKAS Certificate of Calibration is included





UKAS Calibration

service & repair



The United Kingdom Accreditation Service (UKAS) is the UK national accreditation body responsible for assessing and accrediting the competence of organisations in the fields of measurement, testing, inspection and certification of systems, products and personnel. It operates under a Memorandum of Understanding with the Secretary of State for Department for Business, Energy & Industrial Strategy, who has licensed UKAS to use accreditation symbols that feature the Royal Crown, and to confer the use of these symbols to UKAS accredited organisations.

Having achieved accreditation to UKAS, our in-house laboratories are inspected on a regular basis to ensure that our calibration methods, equipment and personnel are maintained to the standards required by UKAS and ISO/IEC 17025.

Our UKAS accredited laboratory is also capable of calibrating non-ETI manufactured temperature and humidity instruments and data-loggers. Please contact our sales department for more information.

The following are just a few examples of frequently asked questions;

● **The difference between calibration & certification?**

Calibration means "to measure". The instrument being tested is calibrated against a known source. A certificate shows which results have been obtained during calibration and certifies the accuracy of the instrument.

● **What is meant by uncertainty of measurement?**

When anything is measured there is a probability that there will be some inaccuracies. Perhaps the test instrument is not entirely accurate; perhaps ambient temperatures are not conducive to accurate measurement; possibly the operator has not followed correct procedures. Each measurement has an "uncertainty" factor, and this can be calculated by a combination of all potential errors. This is then stated as a tolerance, i.e. plus or minus the measured figure.

● **How often should we have our thermometer checked?**

It depends on a number of factors. How important is temperature in your process? How often do you use your thermometer? How roughly is the instrument treated? Do you have the opportunity to check against other thermometers? For continued confidence in the accuracy of measurement, and to assist in compliance with HACCP and other legislation, it is recommended that you obtain a certificate of calibration at 12-month intervals.

● **Can my data-loggers be calibrated?**

Yes. We can issue UKAS Certificates for both temperature and humidity data-loggers with internal or external probes. The standard certificate includes three different temperature or humidity points. For temperature calibration and measurement capability, see opposite, for humidity and air temperature, see page 102.



UKAS Temperature Calibration

in-house accredited laboratory



- thermometer temperature range -100 to 200 °C
- rapid turnaround - normally within 5 days
- certified uncertainties from ± 0.02 °C
- 1 to 5-point UKAS Certificates

Our in-house UKAS accredited calibration laboratory for temperature has a wide measurement range of -100 to 200 °C with a calibration and measurement capability of 0.02 °C. The laboratory can also measure resistance up to 16 M Ω (i.e. resistance decade boxes and PT100/RTD temperature simulators) and DC voltage 0 to 200 mV (i.e. thermocouple simulators and calibrators). Original UKAS Certificates provide proof that instruments and probes have been calibrated against nationally approved standards.

thermometers & probes

Each UKAS Certificate indicates the deviations from standards at various check points, the standard being -18, 0, 40, 70 and 100 °C with a guaranteed uncertainty, dependant on the probe type, see calibration and measurement capability table below.

test caps & simulators

Each UKAS Certificate indicates the deviations from standards at specific check points (-18, 0, 3, 70 and 100 °C) to an uncertainty of ± 0.1 °C (resistance) or ± 0.15 °C (thermocouple).

data-loggers

Each UKAS Certificate indicates the deviations from standards at three check points (-18, 0 and 40 °C) to an uncertainty of ± 0.04 °C.



| order code | UKAS Certificate - temperature | |
|------------|-----------------------------------|--|
| 890-200 | instrument only standard 5-point | |
| 890-210 | instrument & probe system 5-point | |
| 890-215 | checker 3-point | |
| 890-230 | test cap 1-point | |
| 890-235 | simulator 5-point | |
| 890-240 | data-logger 3-point | |

calibration & measurement capability (CMC)

| | |
|--|-------------|
| thermistor thermometer & probe | |
| -50 to 150 °C | CMC 0.02 °C |
| -100 to -50 °C | CMC 0.13 °C |
| PT100 (resistance sensors) thermometer & probe | |
| -50 to 200 °C | CMC 0.02 °C |
| -100 to -50 °C | CMC 0.13 °C |
| thermocouple thermometer & probe | |
| -50 to 120 °C | CMC 0.15 °C |
| -100 to -50 °C | CMC 0.17 °C |
| 120 to 200 °C | CMC 0.2 °C |
| temperature data-loggers | |
| -50 to 100 °C | CMC 0.04 °C |
| thermistor & PT100 test caps | |
| -18 to 100 °C | CMC 0.1 °C |
| thermocouple simulators | |
| -200 to -50 °C | CMC 0.25 °C |
| -50 to 1372 °C | CMC 0.15 °C |



UKAS Humidity Calibration

in-house accredited laboratory



- certified uncertainties from 0.6 %rh, 0.18 °Cdp & 0.15 °C Air
- flexible certification - select the points you need
- qualified & experienced laboratory personnel
- rapid turnaround

Our in-house humidity laboratory is equipped with one of the world's premier humidity chambers together with a high accuracy mirror hygrometer. The Thunder Scientific 2500 humidity chamber uses two-pressure technology to generate controlled humidity conditions, which has long been the recognised standard for instrument calibration, test and verification. This method of generation is a fundamental technology, enabling confidence in traceability to National Standards. This, combined with an MBW referenced mirror hygrometer, ensures the standard of calibration is to a very high level. If you then combine this with UKAS Accreditation, and a rapid turnaround of your instrument, you can be sure that the service offered by our humidity laboratory will meet your requirements.

Accurate monitoring of humidity can increase the efficiency of productivity in many aspects of production. An increasing number of employers are also realising the importance of healthy working environments, which includes the control of humidity to help prevent airborne bacteria, eliminate static shocks and reduce eye-strain.

As with most digital equipment, but even more so with hygrometers, there is a tendency for drift over a period of use. Therefore a regular calibration by comparison against Standards, traceable to National Standards, provides confidence in the continued accuracy of your instrument.

air temperature capability

Our humidity laboratory is also UKAS accredited for air temperature measurement certification. Please see below for calibration and measurement capability.



calibration & measurement capability (CMC)

| order code | UKAS Certificate - humidity |
|------------|-----------------------------|
| 890-110 | 3-point 25, 50 & 75 %rh |
| 890-112 | 1-point customer specified |
| 890-114 | 5-point customer specified |

| order code | UKAS Certificate - air temperature |
|------------|------------------------------------|
| 890-120 | 2-point 10 & 40 °C |
| 890-132 | 1-point customer specified |
| 890-134 | additional specified point |

| humidity | |
|----------------------------|--------------------|
| 10 to 90 %rh @ 0 to 65 °C | CMC 1.2 %rh |
| 10 to 90 %rh @ 20 to 24 °C | CMC 0.6 to 1.0 %rh |

| air temperature | |
|-----------------|-------------|
| 0 to 65 °C | CMC 0.15 °C |

Alternative temperature points can be offered to customer requirements, please contact our Service department for further details.



Service & Repair

of thermometers & probes

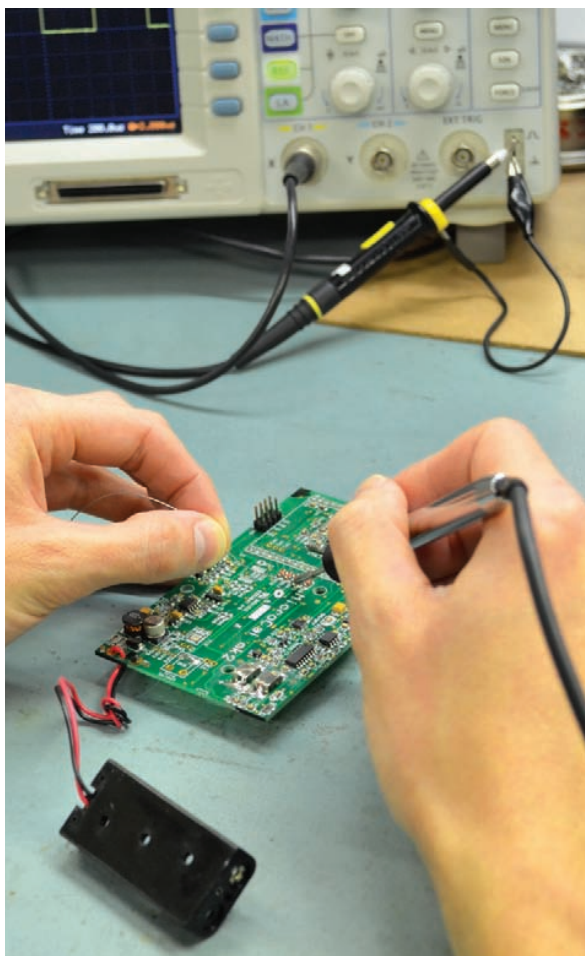
- additional one year's guarantee on repaired instruments
- thermometer, probe & re-calibration service available
- rapid turnaround - normally within 5 days
- qualified & experienced technicians

One of the true advantages of being a manufacturer is that we know how our instruments work and how to repair them. We are fully committed to supporting our customers, no matter which instrument they have chosen. Our service department is equipped with the best of resources and all repairs are undertaken in-house to give an unrivalled after-sales-service.

The vast majority of instruments that are damaged through use in busy commercial environments can be repaired. Naturally, if the instrument is outside the warranty period, there is a charge. But we wish to make customers aware that it can be cost-effective to repair an instrument, rather than throw it away and buy a new one.

Whilst an annual calibration check is all you may need for continued confidence in your instrument, there are times when you may wish for the added assurance of a full service, which includes a re-calibration and the added benefit of a further one year's guarantee.

Instruments for service or repair should be sent to your local distributor or direct to ETI, carriage paid and labelled with the sender's name, address, telephone number and a brief description of the problem to assist with rapid diagnosis. Contact our service department for advice on any non-ETI units you wish to have repaired or calibrated. The prices quoted in our price list below are a guide, for a more comprehensive price structure, please contact our service department.



| order code | description - repair |
|------------|----------------------------|
| 890-254 | waterproof thermometers |
| 890-257 | Thermamite thermometers |
| 890-295 | ThermaData loggers |
| 890-303 | Thermapen 3 thermometers |
| 890-305 | Food Check thermometer |
| 890-306 | CaterTemp thermometer |
| 890-310 | Therma series thermometers |
| 890-318 | CaterTemp Plus thermometer |
| 890-319 | Therma Plus thermometer |
| 890-331 | MicroTherma thermometers |
| 890-403 | Thermapen 4 thermometer |
| 890-500 | TempTest thermometers |
| 890-570 | BlueTherm thermometers |

| order code | description - re-calibration |
|------------|------------------------------|
| 894-254 | waterproof thermometers |
| 894-257 | Thermamite thermometers |
| 894-303 | Thermapen thermometers |
| 894-305 | Food Check thermometer |
| 894-310 | Therma series thermometers |
| 894-318 | CaterTemp Plus thermometer |
| 894-319 | Therma Plus thermometer |
| 894-331 | MicroTherma thermometers |
| 894-500 | TempTest thermometers |

| order code | description - probe repair |
|------------|----------------------------|
| 890-400 | thermocouple probe |
| 890-410 | thermistor probe |
| 890-420 | PT100 probe |



Humidity Meters

hygrometers & therma-hygrometers



In many manufacturing processes the measurement of relative humidity (%rh) is important, as many products are sensitive to variations in humidity. Therefore humidity needs to be measured and controlled for the end products to be consistent in both quality and performance.

what is a hygrometer?

A hygrometer is an instrument used to measure the quantity of water vapour present in air. Hygrometers can measure relative humidity over the range of 0 to 100 %rh but in most instruments, this range may be more limited depending on the sensor type. Relative humidity is expressed as the ratio of the amount of water vapour present in the air or gas, to the quantity which would reach saturation, saturation being 100 %.

applications

There are a wide range of applications for %rh measurement in the following industries:

- pharmaceutical
- electronic component production
- food processing
- building & construction
- livestock
- paper mills
- computer rooms
- healthcare

The pharmaceutical industry is one of the largest users of humidity instrumentation as products can be sensitive to variations in humidity levels. Food manufacturing processes rely on humidity control, as food preservation techniques are often focused on limiting the activity of water. The humidity is an essential element of climate control in buildings for optimum comfort and energy conservation. Paper and paper based products are highly sensitive to humidity and moisture levels. During production, storage and distribution, the monitoring of humidity can have significant benefits on quality.

monitor humidity levels for better health

If a building is too damp and the humidity level is too high (above 70 %rh), not only does mould develop but it can encourage dust mites to breed in carpets and mattresses. Conversely, if the humidity level is too low (below 25 %rh), it can cause respiratory discomfort. The regular monitoring of humidity levels in buildings can improve health.

dew point

The dew point is defined as the lower temperature to which air must be cooled in order for condensation (saturation) to occur. The dew point is dependent on the concentration of water vapour (%rh) present.

UKAS Certificates of Calibration

Our in-house UKAS calibration laboratory offers certification for both temperature and humidity instruments. Each certificate indicates deviations from standards at various temperature or humidity check points.



6000 Series Therma-Hygrometers

dew point calculation & max/min function

- remote or integral %rh & temperature probe
- displays max/min humidity or temperature
- optional backlit display
- 2 year guarantee

The 6000 series therma-hygrometers are easy to use, relative humidity and air temperature measuring instruments. The units measure %rh over the range of 0 to 100 %rh with a resolution of 0.1 %rh and temperature over the range of -20 to 70 °C (-20 to 50 °C with a fixed probe) with a resolution of 0.1 °C.

The therma-hygrometers incorporate a custom LCD, displaying %rh, °C/°F, dew point indication, max/min and hold. There is an automatic display of both open circuit and low battery. The 6000/6100 display the temperature and humidity at the push of a button separately, whereas the 6002/6102 display humidity and temperature simultaneously and additionally incorporates a backlit display.

All units are powered by three AAA batteries with a minimum life expectancy of 10000 hours. An auto-power off facility turns the therma-hygrometer off automatically after ten minutes, maximising battery life.



6100/6102 therma-hygrometers with remote probe

These therma-hygrometers utilise an interchangeable probe that incorporates a one-metre lead with a 6-pin Lumberg connector.



UKAS Calibration Certificate

An optional 3-point UKAS Humidity Calibration Certificate is available at a preferential price, when purchased with these therma-hygrometers.



| order code | description |
|------------|----------------------------------|
| 224-600 | 6000 therma-hygrometer |
| 224-610 | 6100 therma-hygrometer |
| 224-602 | 6002 therma-hygrometer |
| 224-612 | 6102 therma-hygrometer |
| 224-615 | 6100/6102 spare probe |
| 830-227 | protective silicone boot - black |
| 890-111 | *UKAS 3-point Certificate |

**price when purchased with a new instrument*

| specification | temperature | humidity |
|-------------------|-------------------------------|-----------------------|
| range - 6000/6002 | -20 to 50 °C | 0 to 100 %rh |
| range - 6100/6102 | -20 to 70 °C | 0 to 100 %rh |
| resolution | 0.1 °C/°F | 0.1 %rh |
| accuracy | ±1 °C ±1 digit* | ±2 %rh (10 to 90 %rh) |
| hysteresis | n/a | ±1 %rh |
| sensor type | silicone bandgap | capacitance polymer |
| battery | 3 x 1.5 volt AAA | |
| battery life | minimum 5 years (10000 hours) | |
| display | 12 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130/160 grams | |

**accuracy ±0.4 °C over the range 10 to 40 °C otherwise ±1 °C*



6500 Therma-Hygrometer

measures humidity & air temperature

- dew point calculation & max/min function
- remote %rh & temperature probe

The 6500 therma-hygrometer measures both relative humidity and air temperature. The instrument displays %rh over the range of 0 to 100 %rh with a resolution of 0.1 %rh and temperature over the range of -20 to 70 °C with a resolution of 0.1 °C.

The unit incorporates a clear, custom LCD with %rh, °C/°F, dew point indication, max/min and hold. An auto-power off facility turns the therma-hygrometer off automatically after ten minutes, maximising battery life.

The 6500 therma-hygrometer incorporates four, easy to use, push buttons allowing the user to select on/off, hold, max/min and mode functions. Each unit is supplied with a remote sensor and integral PVC lead.



| specification | temperature | humidity |
|---|--------------------------------|---------------------|
| range | -20 to 70 °C | 0 to 100 %rh |
| resolution | 0.1 °C/°F | 0.1 %rh |
| accuracy | ±1 °C ±1 digit* | ±3 % (20 to 80 %rh) |
| hysteresis | n/a | ±1 %rh |
| sensor type | silicone bandgap | capacitance polymer |
| battery & life | 3 x 1.5 volt AAA - 10000 hours | |
| display | 12 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 160 grams | |
| *accuracy ±1 °C over the range 5 to 45 °C otherwise ±1.7 °C | | |

| order code | description |
|------------|----------------------------------|
| 224-655 | 6500 therma-hygrometer |
| 830-227 | protective silicone boot - black |
| 890-111 | *UKAS 3-point Certificate |

*price when purchased with a new instrument

Dial Hygrometer

low cost & easy to read



The general purpose hygrometer incorporates a 70 mm diameter dial with arrow indicator and colour-coded zones to display humidity levels e.g. dry, moderate and humid. The hygrometer indicates the level of humidity in 5 % divisions over the range of 0 to 90 %rh.

The unit is housed in an ABS case, measuring 70 x 60 mm and can be free-standing or hung by the hook from a shelf.

| order code | description |
|------------|------------------------|
| 800-125 | dial hygrometer - room |

Hygro-Thermo

compact & pocket-sized



The pen-shaped Hygro-Thermo simultaneously displays both humidity and temperature over the range of 20 to 95 %rh and 0 to 49.9 °C.

The Hygro-Thermo incorporates a max/min button which allows the user to display the maximum and minimum humidity and temperature simultaneously.

The unit is housed in a slim, ABS case measuring 20 x 23 x 130 mm and incorporates a pocket clip.

| order code | description |
|------------|-------------------------|
| 810-190 | pen-shaped Hygro-Thermo |



Therma-Hygrometers

with comfort level indicator

- displays both humidity & temperature
- max/min memory function

These therma-hygrometers display both the humidity and temperature in addition to indicating and recording the maximum and minimum readings. Each unit features an analogue arrow indicator and a colour-coded bar to display either humidity comfort levels e.g. dry, comfort and wet (810-130) or temperature comfort levels eg. cold, comfort and hot (810-135).

These therma-hygrometers are ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

Each unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

| order code | description |
|------------|---------------------|
| 810-130 | therma-hygrometer |
| 810-135 | comfort thermometer |



| specification | temperature | humidity |
|---------------|-------------------|--------------|
| range | 0 to 50 °C | 10 to 99 %rh |
| resolution | 0.1 °C/°F | 1 %rh |
| accuracy | ±1 °C | ±5 %rh |
| battery | 2 x 1.5 volt AAA | |
| battery life | 10000 hours | |
| display | dual custom LCD | |
| dimensions | 20 x 100 x 110 mm | |
| weight | 150 grams | |

Therma-Hygrometer

max/min & alarm functions

- range of -49.9 to 69.9 °C & 20 to 99 %rh
- integral %rh & remote temperature probe

This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

The instrument measures both humidity and temperature over the range of 0 to 49.9 °C and 20 to 99 %rh via the internal sensors. Using the external temperature sensor the temperature range is extended to -49.9 to 69.9 °C.

The unit features a temperature alert alarm that will sound when the external remote temperature probe indicates the temperature is 0 °C or below. This feature is ideal for frost/freeze alert in horticulture and similar.

The unit is housed in an ABS case, measuring 20 x 65 x 97 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

| order code | description |
|------------|---------------------------|
| 810-155 | therma-hygrometer - alarm |



| specification | temperature | humidity |
|------------------|----------------------------|--------------|
| range - internal | 0 to 49.9 °C | 20 to 99 %rh |
| range - external | -49.9 to 69.9 °C | n/a |
| resolution | 0.1 °C/°F | 1 %rh |
| accuracy | ±1 °C | ±5 %rh |
| sensor type | thermistor | capacitance |
| battery & life | 1.5 volt AAA - 10000 hours | |
| display | dual custom LCD | |
| dimensions | 20 x 65 x 97 mm | |
| weight | 78 grams | |

Therma-Hygrometer

ideal for the home, office or factory

- max/min temperature & humidity function
- integral %rh & temperature

This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum temperature and humidity readings.

The hygrometer measures both humidity and temperature over the range of 0 to 50 °C and 10 to 99 %rh utilising the internal sensors.

This therma-hygrometer is ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

The unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.



| specification | temperature | humidity |
|---------------|-------------------|--------------|
| range | 0 to 50 °C | 10 to 99 %rh |
| resolution | 0.1 °C/°F | 1 %rh |
| accuracy | ±1 °C | ±5 %rh |
| battery | 1.5 volt AAA | |
| battery life | 10000 hours | |
| display | dual custom LCD | |
| dimensions | 20 x 100 x 110 mm | |
| weight | 135 grams | |

| order code | description |
|------------|-------------------|
| 810-145 | therma-hygrometer |

Therma-Hygrometer

for panel-mounting

- displays both temperature & humidity
- easy panel-mounting installation

This panel-mounted therma-hygrometer simultaneously displays both humidity over the range of 20 to 99 %rh and temperature over the range of 0 to 49.9 °C with a resolution of 1 %rh and 0.1 °C. This instrument is ideal for OEMs for installing into equipment, i.e. vivariums, incubators and similar.

The therma-hygrometer is easily installed into a panel via a mounting hole with a minimum Ø33 mm cut-out. The unit incorporates a screw clamp with a maximum panel thickness of 7 mm.

The therma-hygrometer features a max/min memory function for both temperature and humidity. The unit is powered by a CR2032 coin cell battery with a life expectancy of 5000 hours continuous use.



| specification | temperature | humidity |
|---------------|---------------------------------|--------------|
| range | 0 to 49.9 °C | 20 to 99 %rh |
| resolution | 0.1 °C | 1 %rh |
| accuracy | ±1 °C | ±5 %rh |
| sensor type | thermistor | capacitance |
| battery | 3 volt CR2032 lithium coin cell | |
| battery life | 5000 hours | |
| display | dual custom LCD | |
| dimensions | Ø50 x 41 mm | |
| weight | 42 grams | |

| order code | description |
|------------|---------------------------|
| 810-180 | therma-hygrometer - panel |



Therma-Hygrometer

with internal & external probe

- displays both humidity & temperature
- max/min memory function

The therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

Using the external remote probe with integrated three metre lead the unit measures both temperature and humidity over the range of -20 to 70 °C and 10 to 99 %rh. Alternatively using the internal sensor the unit measures temperature over the range of 0 to 50 °C.

This therma-hygrometer is ideal for monitoring both temperature and humidity in rooms, offices, factories and similar to ensure optimum environmental conditions are maintained.

The unit is housed in an ABS case, measuring 20 x 100 x 110 mm, that incorporates a useful foldaway stand and a keyhole slot for hanging on a wall.

| order code | description | |
|------------|--------------------------------|--|
| 810-140 | therma-hygrometer - with probe | |



remote probe



| specification | temperature | humidity |
|------------------|----------------------------|--------------|
| range - internal | 0 to 50 °C | n/a |
| range - external | -20 to 70 °C | 10 to 99 %rh |
| resolution | 0.1 °C/°F | 1 %rh |
| accuracy | ±1 °C | ±5 %rh |
| battery & life | 1.5 volt AAA - 10000 hours | |
| display | dual custom LCD | |
| dimensions | 20 x 100 x 110 mm | |
| weight | 170 grams | |

Therma-Hygrometer

max/min & alarm functions

- 0 °C or below audible alert/alarm
- remote %rh & temperature probe

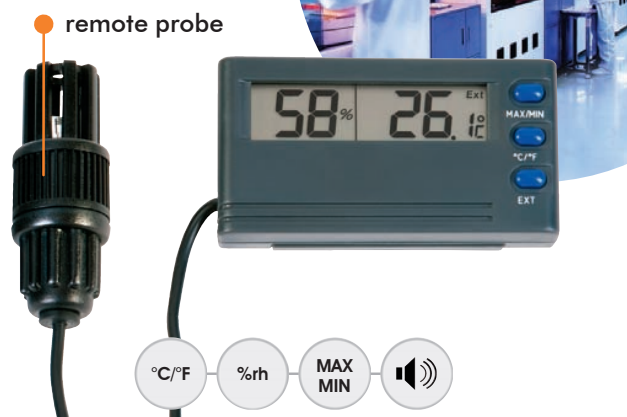
This therma-hygrometer simultaneously displays both the humidity and temperature in addition to indicating and recording the maximum and minimum readings.

Utilising the internal sensor the instrument measures temperature over the range of 0 to 49.9 °C. The external remote probe with integrated three metre lead measures both temperature and humidity over the range of -49.9 to 69.9 °C and 20 to 98 %rh.

The unit features a temperature alert alarm that will sound when the external remote probe indicates the temperature is 0 °C or below. This feature is ideal for frost/freeze alert in horticulture and similar.

The therma-hygrometer is housed in an ABS case measuring 18 x 41 x 76 mm, that incorporates a foldaway stand. Each unit is supplied with a probe wall bracket.

| order code | description | |
|------------|--------------------------------|--|
| 810-195 | therma-hygrometer - with probe | |



remote probe



| specification | temperature | humidity |
|------------------|----------------------------|------------------|
| range - internal | 0 to 49.9 °C | n/a |
| range - external | -49.9 to 69.9 °C | 20 to 98 %rh |
| resolution | 0.1 °C/°F | 1 %rh |
| accuracy | ±1 °C | ±5 %rh at 25 %rh |
| sensor type | thermistor | capacitance |
| battery & life | 1.5 volt AAA - 10000 hours | |
| display | dual custom LCD | |
| dimensions | 18 x 41 x 76 mm | |
| weight | 85 grams | |



Moisture Meters

for measuring dampness in construction materials



We manufacture a range of portable, pin-type (resistance) moisture meters for both the professional and the craftsman. Pin-type moisture meters are acknowledged as a reliable way to obtain percentage moisture readings in a wide range of building materials. The relationship between moisture content and electrical resistance provides consistent and accurate results over the range of 4 % to the fibre saturation point, which is approximately 30 %, dependant on the material.

building materials

Some moisture is unavoidable and may even be necessary in certain building materials, but too much can cause mould, decay and other problems. Our moisture meters are cost-effective instruments that can easily determine moisture levels - allowing the user to diagnose problems and make informed decisions with regard to remedial actions.

problems in measuring moisture

The main problems arise from the 'structure' of the material being tested, in particular, the presence of other conductive material that can affect the reading. Therefore when measuring the moisture content of a material it is important to appreciate a number of factors:

- surrounding environment
- density of the material
- grain size or direction
- ability of a material to absorb moisture

Why measure moisture in floors & walls?

Many of today's flooring materials use water-based adhesives, which are more likely to fail than the older, traditional, solvent-based adhesives. Moisture can cause laminates to fail, tiles to lift and hardwood floors to warp or split. A newly poured concrete floor slab is usually the slowest-drying element of a building. Therefore it is important to measure the moisture content accurately to ensure a successful floor.

Measuring the moisture content of walls is a traditional method for locating damp and other related problems, i.e. damaged pipework, breached damp-proof courses etc. It is important to ascertain the cause of the dampness, i.e. rising damp, penetrating damp or condensation before any remedial action is undertaken.



7250 Moisture Meter

for timber & general building materials

- easy-to-read, digital display with 20-LED bar graph
- specifically designed for the building professional
- 5 scales - concrete, plaster, reference & 2 timber
- 2 year guarantee

The 7250 is a compact, general purpose moisture meter designed specifically for building professionals and tradesmen to check the moisture content in a variety of construction materials. The moisture meter features a 20-LED bar graph within the keypad which displays current moisture levels; green for 'OK', amber for 'WARNING' or red for 'DAMP'. The digital meter incorporates five scales of measurement.

| | |
|-------------------------------------|---------------|
| Scale 1 - Wood 1 (W1) | 6.0 to 40.0 % |
| Scale 2 - Wood 2 (W2) | 8.0 to 40.0 % |
| Scale 3 - Plaster (P1) | 0.1 to 15.0 % |
| Scale 4 - Concrete (C1) | 0.5 to 12.0 % |
| Scale 5 - Linear or Reference (Lin) | 0 to 1000 |

The unit is housed in a robust ABS case and is powered by three AAA batteries that give a minimum of 350 hours battery life. The instrument will power off automatically after ten minutes, maximising battery life. This feature can be disabled by the user, if required.

Each meter incorporates two Ø1.2 x 7 mm pointed, replaceable pins and is supplied in a zip wallet complete with 50 spare pins (602-530). The 7250 moisture meter is an essential tool for flooring surveyors and building and construction engineers.



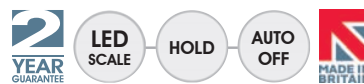
| order code | description |
|------------|-----------------------------------|
| 224-075 | 7250 moisture meter* |
| 830-222 | protective silicone boot - yellow |
| 832-222 | s/steel wall bracket & boot |

*inclusive of spare pins - pack of 50 (602-530)



optional accessory

Protective silicone boot - fitting a boot will make your instrument splashproof to IP64 and prevent against accidental damage. Various colours are available - see page 14



| specification | 7250 moisture meter | |
|----------------|------------------------------|---------------|
| range | scale 1 | 6.0 to 40.0 % |
| | scale 2 | 8.0 to 40.0 % |
| | scale 3 | 0.1 to 15.0 % |
| | scale 4 | 0.5 to 12.0 % |
| | scale 5 | 0 to 1000 |
| resolution | 0.1 % or 1 (Linear Scale) | |
| accuracy | ±1 % moisture content | |
| battery & life | 3 x 1.5 volt AAA - 350 hours | |
| display | 12 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130 grams | |

7000 Moisture Meter

complete with general purpose two-pin probe

- LED bar graph indicates 'OK', 'WARNING' or 'DAMP' levels
- specifically designed for the building professional
- 5 scales - concrete, plaster, reference & 2 timber
- interchangeable 2-pin probes

The 7000 is a compact, general purpose moisture meter designed specifically for building professionals and tradesmen to check the moisture content in a variety of construction materials for moisture content diagnosis.

The instrument features a 20-LED bar graph within the keypad which displays current moisture levels; green for 'OK', amber for 'WARNING' or red for 'DAMP'. The instrument incorporates a large, easy to read, LCD display with low battery indication. The digital meter incorporates five scales of measurement.

| | |
|-------------------------------------|---------------|
| Scale 1 - Wood 1 (W1) | 6.0 to 40.0 % |
| Scale 2 - Wood 2 (W2) | 8.0 to 40.0 % |
| Scale 3 - Plaster (P1) | 0.1 to 15.0 % |
| Scale 4 - Concrete (C1) | 0.5 to 12.0 % |
| Scale 5 - Linear or Reference (Lin) | 0 to 1000 |

Each unit is housed in a robust ABS case and is powered by three AAA batteries that give a minimum of 350 hours battery life. The instrument will power off automatically after ten minutes, maximising battery life. This feature can be disabled by the user, if required.

Each moisture meter comes complete with a general purpose two-pin probe, having a one metre PVC lead and BNC connector, all supplied in a handy-sized protective zip wallet and 50 spare pins (602-530). For alternative moisture probes available, see opposite page.



| order code | description | |
|------------|-----------------------------------|--|
| 224-070 | 7000 moisture meter | |
| 830-222 | protective silicone boot - yellow | |
| 832-222 | s/steel wall bracket & boot | |

the 7000 moisture meter is inclusive of probe



optional accessory

- Protective silicone boot - fitting a boot will make your instrument splashproof to IP64 and prevent against accidental damage. Various colours are available, see page 14



| specification | 7000 moisture meter | |
|----------------|------------------------------|---------------|
| range | scale 1 | 6.0 to 40.0 % |
| | scale 2 | 8.0 to 40.0 % |
| | scale 3 | 0.1 to 15.0 % |
| | scale 4 | 0.5 to 12.0 % |
| | scale 5 | 0 to 1000 |
| resolution | 0.1 % or 1 (Linear Scale) | |
| accuracy | ±1 % moisture content | |
| battery & life | 3 x 1.5 volt AAA - 350 hours | |
| display | 12 mm LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130 grams | |



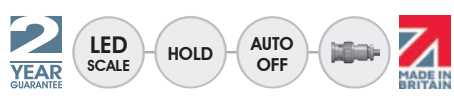
Moisture Meter Kit

for both the professional & the craftsman

Designed specifically for the construction industry, this moisture meter kit is a complete solution for measuring the moisture and dampness in a variety of building materials. This kit represents excellent value for money as it is supplied in a FREE carrying case and includes a two-pin probe, two packs of pins and a FREE protective boot.

each kit contains:






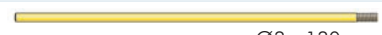
- 7000 moisture meter (224-070)
- general purpose two-pin probe (180-160)
- heavy duty hammer probe (180-170)
- general purpose pins - pack of 50 (602-530)
- hammer probe pins - pack of 10 (602-537)
- protective silicone boot - yellow (830-222)
- ABS carrying case (834-715)



| order code | description |
|------------|--------------------|
| 224-079 | moisture meter kit |

Moisture Probes

for use with 7000 & 7250 moisture meters

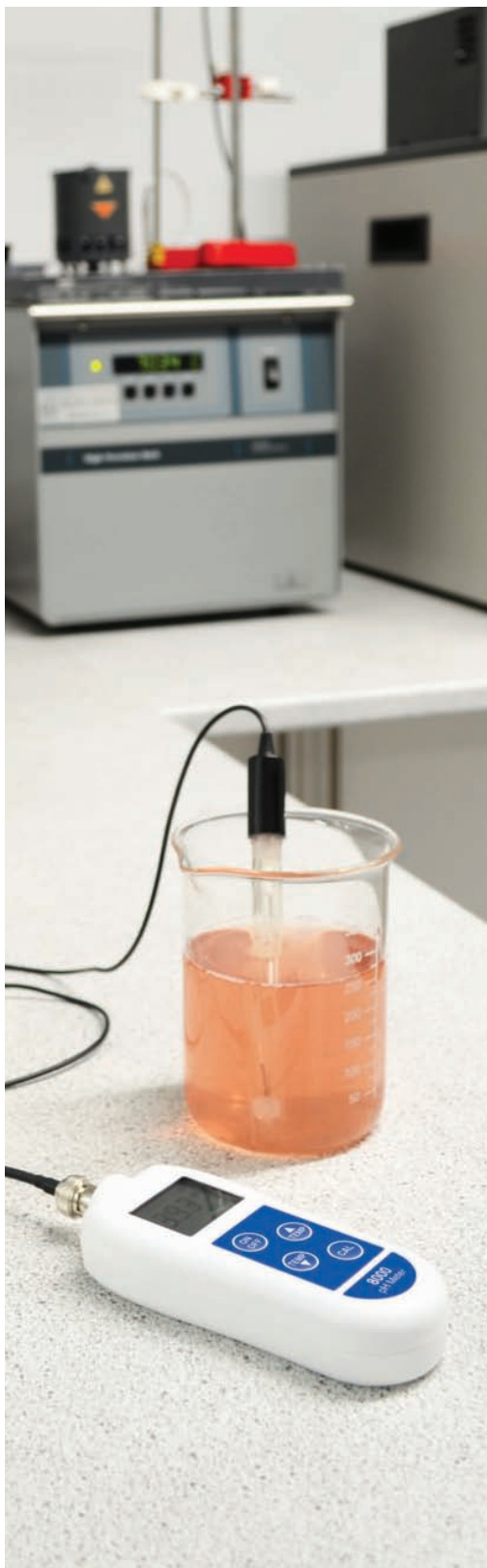
| | | order code |
|--|--|------------|
| general purpose probe  26 x 33 x 60 mm overall | This standard, general purpose, two-pin (12.7 mm spacing) moisture meter probe is ideal for measuring moisture in a variety of building materials. Supplied with a one metre PVC lead and BNC connector. | 180-160 |
|  Ø1.2 x 7 mm (fitted) | Spare general purpose probe pins - pack of 50 | 602-530 |
| heavy duty hammer probe  Ø40 x 290 mm overall | This probe is designed for measuring moisture in wood and similar materials. The pin's insulated shanks ensure measurements are taken at the pin tip, allowing varying of depth measurements. Supplied with a one metre PVC lead and BNC connector. | 180-170 |
|  Ø2.4 x 30 mm (fitted) | Spare hammer probe pins - pack of 10 | 602-537 |
| deep wall probe  Ø3 x 150 mm overall | This insulated deep wall probe measures moisture deep within walls, regardless of surface dampness. The insulated shanks should be inserted into pre-drilled holes. Each pair of probe assemblies is supplied with a one metre PVC lead and BNC connector. | 180-180 |
|  Ø3 x 130 mm | Spare insulated shanks - pack of 2 | 602-539 |





pH Instrumentation

for portable laboratory analysis



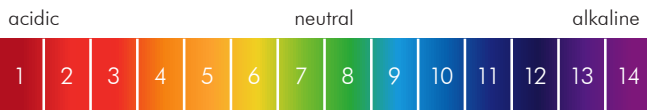
pH meters

The pH (potential hydrogen) level of any material or substance is defined by the acidity or alkalinity of that substance and is represented on a scale of 0 to 14; 7 pH being neutral, 0 pH acidic and 14 pH alkaline.

applications

These analytical meters can be used in many areas, for example:

- food production
- water quality
- process industry
- laboratories
- fish farming
- agriculture
- horticulture
- hydroponics



maintaining your pH meter

If you don't look after your pH meter then incorrect measurements of pH levels may occur.

As a minimum you must always clean the pH electrode by holding it under a running tap, if the pH electrode is excessively dirty a cleaning solution can be used or alternatively use de-ionised water. Leave the electrode in the cleaning solution for at least half an hour, preferably overnight to ensure a thorough clean.

After soaking overnight, rinse the electrode and then soak in a 4 pH buffer solution before giving the electrode a final rinse. The electrode should then be ready for use.

When not in use, ensure the pH meter electrode is kept moist in either storage solution or a 4.01 pH solution. If the sensor is allowed to dry out completely, the instrument's performance will be affected and its guarantee invalidated.

If an electrode has been allowed to dry out or becomes slow to respond it may be rejuvenated by soaking the electrode overnight in a cleaning solution. Avoid touching the glass bulb at the end of the pH electrode at all times as this can easily cause damage.

calibrating your pH meter

To ensure accurate measurements, it is necessary to calibrate/standardise pH meters on a regular basis. For this you will require pH buffer solutions. These standard, inexpensive solutions are used to check that the pH reading is correct. If it is not, it can be easily corrected following the procedure for the specific instrument.

Generally pH electrodes have a limited working life, dependant on the frequency of use. This life is approximately twelve months or 365 measurements.

Want to know more about pH and how to look after your pH meter? A care guide for pH meters is available to download via our website



pH Pal Plus pH Tester

ideal for food processing & laboratories

- pocket-sized meter, ideal for everyday use
- automatic re-calibration feature
- easy to read 8 mm LCD display
- display hold function

The pH Pal Plus pH tester is a user-friendly, simple to use pocket-sized pH meter that incorporates an automatic re-calibration feature. At the touch of a button, the instrument will automatically re-calibrate itself when used in conjunction with a 7.00 pH buffer solution.

The unit is housed in a water resistant case and features an easy to read 8 mm LCD display indicating pH over the range of 0 to 14 pH with a resolution of 0.1 pH and an accuracy of ± 0.2 pH.

The pH Pal Plus tester will power off automatically after ten minutes, maximising battery life. This pH Pal is ideal for measuring the pH in food processing and water testing applications. The pH tester is an invaluable tool when mixing concentrates with water.

The unit is powered by four LR44 button cell batteries (supplied) and includes a protective cap. For pH buffer solutions and capsules, see page 118.



optional accessory

This ready-made 7.00 pH buffer solution ensures the pH meter is reading correctly



| specification | pH Pal Plus pH tester |
|---------------|-------------------------------|
| range | 0 to 14 pH |
| resolution | 0.1 pH |
| accuracy | ± 0.2 pH |
| battery | 4 x 1.5 volt LR44 button cell |
| battery life | 150 hours |
| display | 8 mm LCD |
| dimensions | 15 x 32 x 170 mm |
| weight | 70 grams |

| order code | description |
|------------|-------------------------|
| 813-513 | pH Pal Plus pH tester |
| 816-051 | 7.00 pH buffer solution |

8000 pH meter & interchangeable electrode

- easy to use 2-point re-calibration function
- 2 year guarantee

The 8000 pH meter features an easy to read, LCD display and is supplied with a budget pH electrode.

The 8000 pH meter indicates pH over the range of 0 to 14 pH with a resolution of 0.01 pH and an accuracy of ± 0.05 pH. The pH readings are manually temperature compensated over the range of 0 to 60 °C (default 25 °C).

The unit will power off automatically after ten minutes, maximising battery life.

At the touch of a button, the instrument will automatically re-calibrate itself when used in conjunction with pH buffer solutions. See page 118 for pH electrodes, buffer solutions and capsules.

| order code | description |
|---|---------------|
| 860-800 | 8000 pH meter |
| <i>the 8000 pH meter is inclusive of pH electrode</i> | |

8100 pH Kit pH & temperature meter

- simultaneously displays pH & temperature
- automatic temperature compensation (ATC)

The 8100 pH meter features an easy to read, LCD display and is supplied as a kit which includes an 8100 pH meter, budget pH electrode, temperature probe, 4.01 and 7.00 pH buffer solutions and carrying case.

The 8100 pH meter indicates pH over the range of 0 to 14 pH with a resolution of 0.01 pH and temperature over the range of 0 to 99.9 °C with a resolution of 0.1 °C. The pH readings are automatically temperature compensated over the operating range of 0 to 60 °C utilising the temperature probe supplied.

At the touch of a button, the instrument will automatically re-calibrate itself when used in conjunction with pH buffer solutions. See page 118 for pH electrodes, buffer solutions and capsules.

| order code | description |
|------------|-------------------------|
| 860-810 | 8100 pH kit |
| 170-101 | spare temperature probe |



budget pH electrode
(823-500)

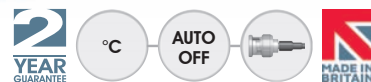


| specification | 8000 pH meter |
|----------------|-------------------------------|
| range | 0 to 14 pH |
| resolution | 0.01 pH |
| accuracy | ± 0.05 pH |
| battery & life | 3 x 1.5 volt AAA - 5000 hours |
| sensor type | combination electrode |
| display | custom LCD |
| dimensions | 25 x 56 x 128 mm |
| weight | 130 grams |



budget pH electrode
(823-500)

temperature probe
(170-101)



| specification | pH | temperature |
|----------------|------------------------------------|--------------|
| range | 0 to 14 pH | 0 to 99.9 °C |
| resolution | 0.01 pH | 0.1 °C |
| accuracy | ± 0.05 pH | ± 0.5 °C |
| battery & life | 3 x 1.5 volt AAA - 5000 hours | |
| sensor type | combination electrode / thermistor | |
| display | custom LCD | |
| dimensions | 25 x 56 x 128 mm | |
| weight | 130 grams | |

8100 Plus pH meter

pH & temperature meter

- robust waterproof case offering IP66/67 protection
- manual/automatic temperature compensation
- easy to use 2-point re-calibration function
- 2 year guarantee

The 8100 Plus pH meter is a three-in-one instrument that features a large easy to read, LCD display that indicates pH over the range of -2 to 16 pH with a resolution of 0.01 pH, mV over the range of -1000 to 1000 mV and temperature over the range of -39.9 to 149.9 °C with a resolution of 0.1 °C. The LCD display features both low battery indication and a user selectable backlight.

The pH readings are either manually or automatically temperature compensated over the range of 0 to 100 °C. To automatically compensate, it is necessary to utilise a thermistor temperature probe. Each unit incorporates an auto-power off facility that automatically turns the instrument off after ten minutes, maximising battery life.

The 8100 Plus has an integrated rubber seal to ensure complete water resistance and helps to reduce the possibility of damage in harsh environments. At the touch of a button, the instrument will automatically re-calibrate (two-point autocal) itself when used in conjunction with pH buffer solutions. For pH electrodes, buffer solutions and capsules, see overleaf.

Each unit incorporates an easy to use BNC connector and Lumberg screw-locking type connector, allowing a wide range of interchangeable thermistor probes to be used. We offer an extensive range of temperature probes, see pages 68 and 69 for full details.

The 8100 Plus is available as a meter only or as a complete kit.



| order code | description |
|------------|-----------------------------|
| 225-085 | 8100 Plus pH meter* |
| 860-820 | 8100 Plus kit |
| 170-100 | temperature probe |
| 830-231 | silicone boot - white |
| 832-050 | s/steel wall bracket & boot |

*8100 Plus is exclusive of pH electrode & probe



(823-501)

(170-100)

8100 Plus pH meter kit

- 8100 Plus pH meter (225-085)
- temperature probe (170-100)
- general purpose pH electrode (823-501)
- 4.01 pH buffer solution (816-050)
- 7.00 pH buffer solution (816-051)
- carrying case (830-080)







| specification | pH | mV | temperature |
|---------------|------------------------------------|----------|------------------------|
| range | -2 to 16 pH | ±1000 mV | -39.9 to 149.9 °C |
| resolution | 0.01 pH | 1 mV | 0.1 °C |
| accuracy | ±0.02 pH | ±1 mV | ±0.4 °C (-10 to 70 °C) |
| battery | 3 x 1.5 volt AAA | | |
| battery life | maximum 5 years (2500 hours) | | |
| sensor type | combination electrode / thermistor | | |
| display | 12 mm LCD | | |
| dimensions | 32 x 71 x 141 mm | | |
| weight | 230 grams | | |

pH Electrodes

with BNC connector

pH meters are only part of the system, of equal importance is the design of the pH electrodes that are used to physically measure the product. This range of standard hand held pH electrodes are fully interchangeable via a BNC connector and are designed for use with the 8000/8100 and 8100 Plus pH meters or similar.

| | | order code |
|--|---|---|
| budget pH electrode  Ø12 x 120 mm | This plastic bodied electrode is ideal for measuring the pH in liquids and semi-solids, in a variety of industries including hydroponics, education and scientific. | 823-500 |
| general purpose electrode  Ø12 x 120 mm | This plastic bodied electrode is ideal for measuring the pH in liquids and semi-solids in a wide variety of industries including food processing, agriculture and pharmaceutical. | 823-501 |
| spear-shaped electrodes  Ø6 or 12 x 120 mm | These glass penetration pH electrodes measure pH in semi-solid and soft materials. Ideal for use in a wide variety of industries including food processing and agriculture. | 823-502 (Ø12 mm) 823-503 (Ø6 mm) |
| knife probe electrode  Ø15 x 150 mm | This stainless steel, sheathed glass electrode is ideal for insertion into meat, cheese or similar. The knife probe can also be used in a variety of applications in food processing and agriculture. | 823-510 |

Calibration Solutions & Capsules

for pH meters & electrodes

pH buffer, cleaning & storage solutions

These ready-made pH buffer solutions are suitable for checking pH instrumentation and pH electrodes.

Buffer solutions are available for 4.01, 7.00 and 10.01 pH.



| order code | description |
|------------|-----------------------------------|
| 816-050 | 4.01 pH buffer solution - 100 ml |
| 816-051 | 7.00 pH buffer solution - 100 ml |
| 816-052 | 10.01 pH buffer solution - 100 ml |
| 816-040 | cleaning solution - 500 ml |
| 816-041 | storage solution - 500 ml |

pH buffer capsules

These DIY pH buffer capsules are available in four standard values, 4.00, 7.00, 9.00 and 10.00 pH.

Each capsule makes 100 ml of solution when mixed with de-ionised water. Supplied in packs of ten capsules.



| order code | description |
|------------|-------------------------------|
| 816-004 | 4.00 pH buffer capsules (10) |
| 816-007 | 7.00 pH buffer capsules (10) |
| 816-009 | 9.00 pH buffer capsules (10) |
| 816-010 | 10.00 pH buffer capsules (10) |





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In 2014 ETI proudly received for the second time in three years the **'Queen's Award for Enterprise for International Trade'**

ETI won two awards in 2016, **'Innovation'** at the Johnston Press South Awards and **'Apprenticeship/Training'** at the Insider Made in the South East Awards

ETI was also shortlisted as a finalist for **'Innovation & Design'** at The Manufacturer MX Awards 2016



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Unit S, Dominion Way



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