THERMOCOUPLE & RESISTANCE THERMOMETER
SENSORS & PROBES
A wide range of configurations for industrial and laboratory applications

LABFACILITY
TEMPERATURE & PROCESS TECHNOLOGY
www.labfacility.co.uk
Choosing the sensor type:

**Thermocouples** are less expensive than PRT sensors, more versatile, less accurate, more rugged, more sensitive, have a wider operating range, are tip sensitive, and can be smaller. Extension cabling is more expensive. Various calibrations are available for different applications.

**PRT assemblies** are much more accurate and stable, permit greater resolution of measurement but over a more limited range, are stem sensitive, larger and more expensive. Extension cabling is inexpensive copper wire. Remember the type of sensor chosen must suit the associated instrumentation.

- Thermocouple & platinum resistance thermometers in a wide range of configurations & dimensions
- Ranges from -200°C to 1700°C
- Mineral insulated, flexible and fabricated, rigid probes
- Fine wire thermocouples
- Hand held probes
- Plastics, surface & air sensors
- Furnace thermocouples
- Calibrated sensors
- General purpose and application specific designs
- Installation fittings
- Head mounting temperature transmitters
- Pt100 & Pt1000 detectors
- ISO 9001 registered
- Full compliance with IEC specifications
- Thermocouple calibration types J, K, T, N, E, R & S available

**COLOUR CODES**

**THERMOCOUPLE CONNECTORS, EXTENSION AND COMPENSATING WIRES AND CABLES**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CONDUCTORS +/−</th>
<th>BS1843: 1952</th>
<th>ANSI/MC 96.1</th>
<th>DIN 43713 /43714</th>
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* Magnetic, ( )

Alternative & Trade Name

For Thermocouple Connectors body colours are similar to outer sheath colours

For Thermocouple Connectors body colours are similar to outer sheath colours

The British Standard Colour Code for Thermocouple Cables, BS1843: 1952 is superseded by BS4937 PART 30 1993 (=IEC 584-3 1989)

Additional identification as to whether a thermocouple cable type is extension or compensating is indicated in the example which follows; however, please note that a letter A or B after the C for Compensating refers to the Cable Temperature Range in accordance with the table of Tolerance Values set out with this standard.

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MINERAL INSULATED THERMOCOUPLES

Mineral insulated thermocouples are for use up to 1300°C depending on the configuration. They are rugged, steel sheathed probes with flexible sheaths allowing bending or forming. They offer long life (depending on use) and can be used in high pressure and vibration applications. Stainless steel sheaths provide optimum flexibility. Inconel 600 offers better corrosion resistance in many applications.

Alternative cable types available.

MINERAL INSULATED THERMOCOUPLES WITH TAILS. STYLE MD

- Mineral insulated thermocouple type K
- Choice of stainless steel 310 or Inconel 600 sheath
- M8 x 1.0mm threaded pot (200°C)
- Sensor temperature range -100 to 1100°C
- Tails 100mm, PFA insulated twin twisted, 7/0.2mm

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MINERAL INSULATED THERMOCOUPLES WITH EXTENSION LEAD & PLAIN POT SEAL. STYLE MA

- Mineral insulated thermocouple type J or K
- Plain, stainless steel pot (200°C)
- Stainless steel sheath, type K 310, type J 321
- Type K -100 to 1100°C sensor range
- Type J -100 to 760°C sensor range
- 2m PFA insulated lead, 7/0.2mm flat pair

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MINERAL INSULATED THERMOCOUPLES WITH EXTENSION LEAD & THREADED POT SEAL. STYLE MA

- Mineral insulated thermocouple type K or N
- Type N Inconel sheath, type K stainless steel sheath 310
- Type K -100 to 1100°C sensor range
- Type N -230 to 1300°C sensor range
- 2m PFA insulated lead, 7/0.2mm flat pair

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MINERAL INSULATED THERMOCOUPLES WITH EXTENSION LEAD & PLAIN POT SEAL. STYLE MA

- Mineral insulated thermocouple type K
- Stainless steel 310 or Inconel 600 sheath
- M8 x 1.0mm threaded pot (200°C)
- Sensor temperature range -100 to 1100°C
- Tails 100mm, PFA insulated twin twisted, 7/0.2mm

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Alternatives made to order – details on request

www.labfacility.co.uk
**DUPLEX MINERAL INSULATED THERMOCOUPLES WITH EXTENSION LEAD & PLAIN POT SEAL. STYLE MA**

- 2 independent thermocouples in single sheath
- Mineral insulated thermocouples type K
- Stainless steel sheath 310
- Plain, stainless steel pot (200°C)
- Sensor temperature range -100 to 1100°C
- 2m PFA insulated lead, 4 core 7/0.2mm

**MINERAL INSULATED THERMOCOUPLES WITH STANDARD PLUG. STYLE MB**

- Mineral insulated thermocouples, type K
- Quick, simple connection for easy installation
- Standard plug termination (220°C)
- Stainless steel sheath 310
- Sensor temperature range -100 to 1100°C

**MINERAL INSULATED THERMOCOUPLES WITH MINIATURE PLUG. STYLE MB**

- Mineral insulated thermocouples, type K
- Quick, simple connection for easy installation
- Miniature plug termination (220°C)
- Stainless steel sheath 310
- Sensor temperature range -100 to 1100°C

Alternatives made to order – details on request

**INDUSTRIAL MINERAL INSULATED THERMOCOUPLE WITH TERMINAL HEAD, EXTENSION & REPLACEABLE INSERT. STYLE MC/ME**

- Mineral insulated thermocouple, type K
- Aluminium IP67 terminal head, M20 x 1.5mm cable entry
- Sensor temperature range -100°C to 800°C
- Stainless steel sheath & extension
- Extension 12.5mm diameter x 75mm
- ½” BSP (P) process connection
- Replaceable spring loaded insert

**INDUSTRIAL MINERAL INSULATED THERMOCOUPLE WITH TERMINAL HEAD. STYLE MC**

- Mineral insulated thermocouples, type J or K
- Stainless steel sheath, type K 310, type J 321, 6mm diameter
- Aluminium IP67 terminal head, M20 x 1.5mm cable entry
- Sensor temperature range -100°C to 1100°C (K) -100°C to 760°C (J)
- Optional Transmitter-in-head, see page 14
- Thermowells & fittings available, see page 13

**INDUSTRIAL MINERAL INSULATED THERMOCOUPLE WITH TERMINAL HEAD & PROCESS CONNECTION. STYLE MC**

- Mineral insulated thermocouple, type K
- Aluminium IP67 terminal head, M20 x 1.5mm cable entry
- ½” BSP (P) process connection, stainless steel
- Stainless steel sheath 310, 6mm diameter
- Sensor temperature range -100°C to 1100°C
- Optional transmitter-in-head, see page 14
- Thermowells available – details on request

**ORDER CODES**

**Type K**

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</table>

**Type K complete assembly:**

- Probe length
  - 150mm: 010597TD-A
  - 250mm: 010597TD-B
  - 500mm: 010599TD-C

**Replacement inserts to suit:**

- 150mm: ME-ISK-S60-275-DBP
- 250mm: ME-ISK-S60-375-DBP
- 500mm: ME-ISK-S60-625-DBP

**ORDER CODES**

**Type K complete assembly:**

- Probe length
  - 150mm: 010599TD-A
  - 250mm: 010599TD-B
  - 500mm: 010599TD-C

**ORDER CODES**

**Type K 100mm probe**

- Type K: MC-ISK-S60-100-KNE
- Type J: MC-ISJ-S60-100-KNE

**Type K 200mm probe**

- Type K: MC-ISK-S60-200-KNE
- Type J: MC-ISJ-S60-200-KNE

**Type K 400mm probe**

- Type K: MC-ISK-S60-400-KNE
- Type J: MC-ISJ-S60-400-KNE

**Type K 600mm probe**

- Type K: MC-ISK-S60-600-KNE
- Type J: MC-ISJ-S60-600-KNE

**ORDER CODES**

**Type J 200mm probe**

- MC-ISJ-S60-200-KNE
- MC-ISJ-S60-200-KNE

**Type J 400mm probe**

- MC-ISJ-S60-400-KNE
- MC-ISJ-S60-400-KNE

**Type J 600mm probe**

- MC-ISJ-S60-600-KNE
- MC-ISJ-S60-600-KNE

**ORDER CODES**

**Type K complete assembly:**

- Probe length
  - 150mm: MC-ISK-S60-150-KNE-PR1
  - 250mm: MC-ISK-S60-250-KNE-PR1
  - 500mm: MC-ISK-S60-500-KNE-PR1
### WELDED TIP FINE WIRE THERMOCOUPLES

- Fast response, exposed junction
- Thermocouple types J, K, & T
- Glassfibre insulated wires, silicone varnished
- Flat pair, 1/0.315mm, 2m long
- Rated -60°C to 350°C
- Ideal for test & development applications

### FINE WIRE WELDED TIP THERMOCOUPLES, PFA INSULATED. STYLE Z2

- Fast response, exposed junction
- Thermocouple type K/T
- PFA insulated wires, 1m singles 1/0.08mm, class 1
- Rated -75°C to 250°C
- IEC colours supplied (ANSI shown)
- Ideal for test & development applications

### WELDED TIP THERMOCOUPLES, PFA INSULATED. STYLE Z2

- Fast response, exposed junction
- Thermocouple types J, K, & T
- PFA insulated wires, twin twist 1/0.2mm, Class 1, 2m long
- Rated -75°C to 250°C
- Ideal for test & development applications

### VERY FINE WELDED TIP THERMOCOUPLES, BARE WIRE. STYLE Z1

- Optimum sensitivity, very responsive
- Exposed junction
- Thermocouple type K
- Bare wires 1/0.0254mm x 200mm
- Ideal for minimally invasive temperature sensing

### CABLE TIDY THERMOCOUPLE WITH FITTED MINIATURE PLUG

- A complete, precision fine wire, high sensitivity thermocouple with a fitted miniature connector
- Quick and easy integral storage of the thermocouple
- Type K & T thermocouples, 1 & 2m lengths
- Class 1 wire for high accuracy
- PFA insulated wire, 0.2 & 0.315mm conductors
- Rated 220°C continuous
- Ideal & convenient for scientific and industrial test & measurement
  - Details on application

**ORDER CODES**

- **Fitted plug PFA:**
  - Type J: Z2-J-PFA-TT-1/0.08-1.0-T
  - Type K: Z2-K-PFA-TT-1/0.08-1.0-T
  - Add x5 to code

- **Fitted plug Glassfibre:**
  - Type J: Z2-J-F/G-1/0.315-2.0-T
  - Type K: Z2-K-F/G-1/0.315-2.0-T
  - Type N: Z2-N-F/G-1/0.315-2.0-T
  - Add x5 to code

**ORDER CODES**

- **Fitted plug PFA:**
  - Type J: Z2-J-PFA-TT-1/0.2-2.0-MP
  - Type K: Z2-K-PFA-TT-1/0.2-2.0-MP
  - Type T: Z2-T-PFA-TT-1/0.2-2.0-MP
  - FOR PACKS OF FIVE, ADD x5 TO CODE
  - Other thermocouple types available, details on request

- **Fitted plug Glassfibre:**
  - Type J: Z2-J-F/G-1/0.315-2.0-T
  - Type K: Z2-K-F/G-1/0.315-2.0-T
  - Type N: Z2-N-F/G-1/0.315-2.0-T
  - “Moulded-on” plug PFA
  - Type J: Z2-J-PFA-TT-1/0.2-2.0-MMP
  - Type K: Z2-K-PFA-TT-1/0.2-2.0-MMP
  - Type T: Z2-T-PFA-TT-1/0.2-2.0-MMP
  - FOR PACKS OF FIVE, ADD x5 TO CODE
  - Other thermocouple types available, details on request

**ORDER CODES**

- **Type K:** Z3-K-F/G-1/0.315-2.0-T
  - FOR PACKS OF FIVE, ADD x5 TO CODE
  - Other thermocouple types available, details on request

- **Type T:** Z3-T-F/G-1/0.315-2.0-T
  - FOR PACKS OF FIVE, ADD x5 TO CODE
  - Other thermocouple types available, details on request

- **Type J:** Z3-J-F/G-1/0.315-2.0-T
  - FOR PACKS OF FIVE, ADD x5 TO CODE
  - Other thermocouple types available, details on request

Alternatives made to order – details on request
COPPER DISC, FINE WIRE THERMOCOUPLE, PFA INSULATED

- Copper disc 6.35mm diameter x 0.3mm thick
- Thermocouples type J & K
- PFA insulated wires 2m, twin twist 1/0.2mm, class 1
- Rated 0°C to 200°C
- Adhesive kapton strip 13x18mm supplied x 5

THERMOPADS

- Self-adhesive pads in PTFE glass cloth for locating welded tip thermocouples
- -50°C to 200°C
- Packs of 20 pads
- Pad 13x18mm

THERMOCOUPLES FOR SPECIFIC APPLICATIONS

MAGNETIC STRIP THERMOCOUPLE. STYLE FMS

- Type K thermocouple in a flexible magnetic strip for use on ferro-magnetic surfaces
- Temperature range -50 to 120°C
- 2m PFA twisted pair insulated lead, 1/0.315mm
- Strip 50 x 25 x 1mm

BUTTON MAGNET THERMOCOUPLE. STYLE BMS

- Type K thermocouple in a powerful magnet
- Grounded measuring junction
- Temperature range 0°C to 250°C
- 2m PFA twisted pair insulated lead 7/0.2mm
- Magnet 12.5mm diameter x 10mm

PLASTICS & GENERAL USE

ADJUSTABLE BAYONET FITTING THERMOCOUPLE. STYLE FS

- A type J or K thermocouple with adjustable insertion depth
- 4.5mm or 6.0mm diameter tip
- 170mm spring with adjustable fixing cap
- Grounded tip for fast response
- Rated 350°C
- 2m Glassfibre, stainless steel braided lead, 7/0.2mm
- Male adaptor available ¼” BSP thread, see page 13

WASHER THERMOCOUPLE. STYLE FW

- A type J or K thermocouple housed in a washer eyelet
- Grounded tip for fast response
- Rated 350°C
- Washer with 6mm clearance hole
- 2m glassfibre steel braided extension lead, 7/0.2mm

MELT THERMOCOUPLE. STYLE FM

- Type J melt bolt sensors for plastics machinery
- Robust construction to withstand high pressure and temperatures
- Rated 450°C (sensor), 220°C (connector). Insulated junction
- Suits wide range of extruders and moulders
- 310 stainless steel: UNF 20 thread. 76 or 152mm bolt length
- Sheath; immersion depth 5mm, diameter 3mm

Alternatives made to order – details on request

ORDER CODES

- Copper Disc K-PFA-TT-1/0.2-2.0-T
- Disc-J-PFA-TT-1/0.2-2.0-T

ORDER CODES

- Thermopads PE-021

ORDER CODES

- Type & Size
  - Type K 6mm FS-GSK-6.0-2.0-C4-T
  - Type J 6mm FS-GSJ-6.0-2.0-C4-T
  - Type K 4.5mm FS-GSK-4.5-2.0-C4-T
  - Type J 4.5mm FS-GSJ-4.5-2.0-C4-T

ORDER CODES

- Type & Length
  - J, 76mm FM-J-U-76-5
  - J, 152mm FM-J-U-152-5

ORDER CODES

- K DISC-K-PFA-TT-1/0.2-2.0-T
- J DISC-J-PFA-TT-1/0.2-2.0-T

OTHER THERMOCOUPLE TYPES AVAILABLE, DETAILS ON REQUEST

WASHER THERMOCOUPLE. STYLE FW

ORDER CODES

- Type J FW-J-2.0-C4-T
- Type K FW-K-2.0-C4-T

ORDER CODES

- Type J FW-J-2.0-C4-T
- Type K FW-K-2.0-C4-T

ORDER CODES

- Male Adaptor CA-400

www.labfacility.co.uk
NOZZLE THERMOCOUPLE. STYLE FN

- A type J or K thermocouple housed in a threaded bolt
- Grounded tip for fast response
- Adjustable insertion via free running nut
- M6 x 1mm threaded stainless steel bolt
- Rated 350°C
- 2m glassfibre stainless steel braided extension lead, 7/0.2mm

ORDER CODES
J  FN-J-M-2.0-C4-T
K  FN-K-M-2.0-C4-T

LEAF THERMOCOUPLE. STYLE FL

- A type J or K sensor mounted on a stainless steel shim
- Grounded tip for fast response
- Rated 350°C
- 2m glassfibre stainless steel braided extension cable, 7/0.2mm
- Stainless steel shim 25mm long x 13mm wide

ORDER CODES
J  FL-J-2.0-C4--T
K  FL-K-2.0-C4-T

PATCH SURFACE THERMOCOUPLE. STYLE SRS

- Type K thermocouple in a moulded silicone rubber patch
- Dimensions 40 x 13mm
- Self-adhesive, aluminium foil backing
- 2m PFA twin twisted lead 1/0.2mm
- Resistant to many oils and chemicals

ORDER CODES
K  SRS-K-PFA-TT-1/0.2-2.0-T

PIECE Surface THERMOCOUPLE. STYLE FP

- Fits pipe diameters 13mm to 55mm (4 sizes)
- A type K stainless steel pipe clamp sensor with adjustable diameter
- Grounded tip for fast response
- Rated 350°C
- 2m glassfibre stainless steel braided extension lead, 7/0.2mm

ORDER CODES
Type & Size
K, 13-20mm FP-K-13-2.0-C4-T
K, 20-30mm FP-K-20-2.0-C4-T
K, 30-40mm FP-K-30-2.0-C4-T
K, 40-55mm FP-K-40-2.0-C4-T

HEAVY DUTY RIGID PROBE. STYLE FA

- Type J or K rugged, immersion thermocouple
- Probe 4.5mm diameter x 150mm long
- 2m glassfibre, stainless steel braided lead, 7/0.2mm
- Sensor temperature range -60°C to 350°C
- Grounded junction for fast response

ORDER CODES
Type
K  FAA-SSK-4.5-150-2.0-C4-T
J  FAA-JS-J-4.5-150-2.0-C4-T

HAND HELD THERMOCOUPLE PROBES

A range of hand held probes provides alternative handle and sheath configurations for a wide variety of applications.

- A choice of handle designs
- Coiled lead or straight lead options
- Miniature plug termination
- Penetration, air & surface tip designs
- Use with any digital thermometer

FURNACE THERMOCOUPLES

Labfacility offers a comprehensive range of base and rare metal thermocouples for high temperature applications including furnaces.

- Standard configurations or custom made
- Types K,N,R,S & B
- Temperature ratings up to 1750°C
- Wide range of sheath materials including stainless steel and Alumina
- Single and dual sheathed versions for optimum element protection
Details on application

Alternatives made to order – details on request

www.labfacility.co.uk
PLATINUM RESISTANCE THERMOMETERS

MINERAL INSULATED, FLEXIBLE SHEATH RESISTANCE THERMOMETERS

Mineral Insulated Resistance Thermometers are for use up to 500°C depending on the configuration. They are rugged, steel sheathed probes with flexible sheaths allowing bending or forming. They offer long life (depending on use) are resistant to vibration and can be used in high pressure applications. Alternative cable types available

4 wire thermometer can be connected as 4,3 or 2 wire; 3 wire can be connected as 3 or 2 wire

MINERAL INSULATED Pt100 PROBE WITH EXTENSION LEAD. STYLE MIRA

- High temperature, rugged flexible Pt100 probe
- Pt100 Class B, 4-wire connection
- Sensor Temperature rating -100 to 500°C
- 2m PFA insulated screened lead, 7/0.2mm, 4 core
- Stainless steel sheath

ORDER CODES

<table>
<thead>
<tr>
<th>Dia (mm)</th>
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MINERAL INSULATED, FLEXIBLE SHEATH RESISTANCE THERMOMETERS

MINERAL INSULATED Pt100 PROBE WITH EXTENSION LEAD. STYLE MIRA

- High temperature, rugged flexible Pt100 probe
- Pt100 Class B, 4-wire connection
- Sensor Temperature rating -100 to 500°C
- 2m PFA insulated screened lead, 7/0.2mm, 4 core
- Stainless steel sheath

ORDER CODES

<table>
<thead>
<tr>
<th>Dia (mm)</th>
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MINERAL INSULATED Pt100 PROBE WITH EXTENSION LEAD. STYLE MIRA

- High temperature, rugged flexible Pt100 probe
- Pt100 Class B, 4-wire connection
- Sensor Temperature rating -100 to 500°C
- 2m PFA insulated screened lead, 7/0.2mm, 4 core
- Stainless steel sheath

ORDER CODES

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<tr>
<th>Dia (mm)</th>
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FABRICATED, RIGID SHEATH RESISTANCE THERMOMETERS

Fabricated or general purpose resistance thermometers are for use up to 350°C. The rigid, steel probes and alternative sensor configurations suit many applications. Alternative cable types available.

4 wire thermometer can be connected as 4,3 or 2 wire; 3 wire can be connected as 3 or 2 wire

Pt100 PROBE WITH EXTENSION LEAD. STYLE RA

- Accurate, general purpose temperature sensor
- Pt100, Class B, 4 wire connection
- Stainless steel probe
- Sensor Temperature range -50 to 250°C
- 2m PFA insulated screened lead, 7/0.2mm for 6.0mm probe
- 2m PFA insulated screened lead, 7/0.1mm for 3.0mm probe

ORDER CODES

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<th>Length (mm)</th>
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<td>3.0</td>
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Pt100 PRECISION PROBES. STYLE RA

- High accuracy, close tolerance Pt100 sensors
- Suitable as reference probes
- Pt100 1/5DIN tolerance element, 4 wire connection
- Accuracy better than ±0.6°C at 0°C
- 2m PTFE insulated, screened lead, 7/0.2mm
- Sensor temperature range -50°C to 200°C

ORDER CODES

<table>
<thead>
<tr>
<th>Max Temperature</th>
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<td>350</td>
<td>H450</td>
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</table>

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Alternatives made to order -
**Quick Response Thin Film, General Purpose Pt100 Probe. Style RA**

- Stainless steel sheath housing a thin film Pt100 in flat tip
- Adjustable, fitted compression gland
- Pt100, Class B element, 2 wire connection
- Probe 4mm diameter x 117mm
- Sensor temperature range -50 to 250°C
- Brass gland ⅜” BSP (P)
- 1m PTFE insulated, screened lead, 2 wire 7/0.2mm

**Duplex Pt100 Probe with Extension Lead. Style RA**

- 2 independent Pt100 sensors in single sheath
- Pt100, Class B, 2 x 3 wire
- Sensor temperature range -50°C to 250°C
- 2m PTFE insulated screened lead, 6 core 7/0.2mm
- Stainless steel sheath

**Industrial Pt100 Sensor with Terminal Head, Extension & Replaceable Insert. Style RC & RE**

- High temperature, rugged probe with Pt100 element
- Pt100, Class B, 4 wire connection
- Stainless steel sheath & extension
- Extension 12.5mm diameter x 75mm
- Aluminium IP67 terminal head, M20 x 1.5mm cable entry
- Replaceable spring loaded insert
- Sensor temperature range -100°C to 450°C

**Industrial Pt100 Sensor with Terminal Head & Process Connection. Style RC**

- High temperature, rugged probe with Pt100 element
- Pt100, Class B, 4 wire connection
- Stainless steel sheath, 6mm diameter
- Stainless steel sheath, 6mm diameter
- Aluminium IP67 terminal head, M20 x 1.5mm cable entry
- Sensor temperature range -100 to 450°C
- Optional transmitter-in-head, see page 14
- Thermowells & fittings available, see page 13

**Order Codes**

**Quick Response Thin Film, General Purpose Pt100 Probe. Style RA**

3 wire connection available on request

010351TD

**Order Codes**

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**Quick Response Thin Film, General Purpose Pt100 Probe. Style RA**

**Order Codes**

Pt100 complete assembly:

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Replaceable inserts:

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<td>RE-S4B-S60-625-DPB</td>
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**Order Codes**

**Industrial Pt100 Sensor with Terminal Head, Extension & Replaceable Insert. Style RC & RE**

**Order Codes**

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**Order Codes**

**Industrial Pt100 Sensor with Terminal Head & Process Connection. Style RC**

**Order Codes**

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<tr>
<td>500</td>
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- Details on request
RESISTANCE THERMOMETER FOR SPECIFIC APPLICATIONS

EXTERNAL/COLD STORE Pt100 SENSOR.
STYLE RTP

- Rugged, wall mounting Pt100 assembly for heavy duty applications
- Pt100, Class B for 2, 3 or 4 wire connection
- Temperature range -50°C to 150°C
- Weatherproof assembly to IP67, H80 x W74 x D54mm
- Stainless steel perforated probe 12.5mm diameter x 75mm
- M20 cable gland
- 4-20mA transmitter option

ORDER CODE
Code
Pt100 assembly RTP-PT100
4-20mA transmitter version RTP-PT100-TX

PATCH, SURFACE Pt100.
STYLE RTF

- Pt100 Class B sensor in a moulded silicone rubber patch
- Dimension L40mm, W13mm, thickness 5mm
- 4 wire connection
- Self-adhesive, aluminium foil backing
- 2m PTFE insulated, twisted pair lead, 4 core, 7/0.2mm
- Temperature range -50 to 150°C
- Resistant to many oils & chemicals

ORDER CODE
Code
RTF4-2

CLEAN ROOM Pt100 SENSOR.
STYLE RTZ

- Moulded, wall mounting Pt100 housing for accurate, indoor air temperature sensing
- Moulded case H85 x W85 x D30mm
- Surface or standard electrical conduit mounting
- Pt100, Class B for 2, 3, or 4 wire connection
- Temperature range 0 to 70°C

ORDER CODE
Code
RTZ-PT100

HAND HELD Pt100 PROBES

A range of hand held probes provides alternative handle and sheath configurations – details on application.

PLATINUM RESISTANCE SENSING ELEMENTS

- Pt100 & Pt1000 elements to IEC751, Class A & B
- Wirewound & thin film construction
- Thin film elements are resistant to vibration & shock & provide better thermal sensitivity
- Wirewound elements provide optimum performance in process applications when used in a protective sheath
- Glass encapsulated options for hermetic sealing details on request
- Extended lead options, 2 & 4 wire with ceramic sheath
- Wide range of sizes
- Range -200 to 800°C wirewound, -70 to 500°C thin film
- Duplex versions (wirewound)

THIN FILM Pt100 ELEMENTS

ORDER CODES
Thin Film elements Pt100
Type
Code
2 x 5mm, Class B DM-503
2 x 10mm, Class A DM-334
2 x 10mm, Class B DM-333
2 x 2.3mm, Class A DM-503
2 x 2.3mm, Class B DM-301
FOR PACKS OF 5, ADD x5 TO CODE

Alternatives made to order – details on request

www.labfacility.co.uk
THIN FILM ELEMENTS Pt100, CLASS B THERMOMETER INSERTS

- Element housed in ceramic sheath 5mm dia x 35mm long
- Thin Film Pt100 Elements to BS1904 1984, class B
- Leads 1/0.4mm dia nickel wire
- 7/0.2mm singles copper wire, PTFE insulated
- 2 and 4 wire configurations
- Non sleeved or Glassfibre sleeved for -50°C to 450°C
- PTFE insulated wires for -50°C to 250°C

WIREWOUND ELEMENTS Pt100

Also available with extended leads

FLAT SHEATHED, THIN FILM Pt100

- Sheathed Pt100 element in thin stainless steel body
- Dimensions, length x 35mm – width x 6mm – height 2mm
- Temperature range -50°C to 250°C
- 1m of PTFE insulated twin twist 7/0.2mm

Alternatives made to order – details on request

ORDER CODES

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>450mm x 4 wire, 1/0.4mm Glass fibre</td>
<td>01-412-RT/A</td>
</tr>
<tr>
<td>450mm x 4 wire, 7/0.2mm PTFE</td>
<td>01-412-RT/B</td>
</tr>
<tr>
<td>10mm x 2 wire, 1/0.4mm Bare</td>
<td>01-412-RT/C</td>
</tr>
<tr>
<td>50mm x 2 wire, 7/0.2mm PTFE</td>
<td>01-412-RT/D</td>
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DIMENSIONS TOLERANCE

<table>
<thead>
<tr>
<th>Dia x length</th>
<th>Tolerance Class</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>2.8 x 25</td>
<td>B</td>
<td>DA-016</td>
</tr>
<tr>
<td>2.8 x 25</td>
<td>A</td>
<td>DA-017</td>
</tr>
<tr>
<td>2.8 x 25</td>
<td>1/3</td>
<td>DA-018</td>
</tr>
<tr>
<td>2.8 x 25</td>
<td>1/5</td>
<td>DA-019</td>
</tr>
<tr>
<td>2.8 x 25</td>
<td>1/10</td>
<td>DA-020</td>
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<tr>
<td>1.5 x 25</td>
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<td>DA-026</td>
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<td>B</td>
<td>DA-041</td>
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<tr>
<td>2.8 x 15</td>
<td>A</td>
<td>DA-042</td>
</tr>
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<td>DA-043</td>
</tr>
<tr>
<td>2.8 x 15</td>
<td>1/5</td>
<td>DA-044</td>
</tr>
<tr>
<td>2.8 x 15</td>
<td>1/10</td>
<td>DA-045</td>
</tr>
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<td>2.4 x 15</td>
<td>B</td>
<td>DA-046</td>
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<tr>
<td>1.6 x 15</td>
<td>B</td>
<td>DA-056</td>
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ORDER CODES

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>5mm dia x 35mm long x 2 wire</td>
<td>010011TD</td>
</tr>
<tr>
<td>5mm dia x 35mm long x 4 wire</td>
<td>010010TD</td>
</tr>
</tbody>
</table>

ORDER CODES

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5mm dia x 15mm Class A</td>
<td>DB-151</td>
</tr>
<tr>
<td>1.5mm dia x 15mm Class B</td>
<td>DB-150</td>
</tr>
</tbody>
</table>

Wirewound Elements, Pt100 Class B with extended leads

Leads 7/0.2mm copper wire, PFA sleeved

DUPLEX WIREWOUND ELEMENTS, Pt100

ORDER CODES

<table>
<thead>
<tr>
<th>Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x Pt100 elements, single element shown. Also available with extended leads</td>
<td></td>
</tr>
</tbody>
</table>
Labfacility is a specialist designer and manufacturer for custom specified temperature sensors. Special assemblies can be supplied against a sample (existing) probe, a customer drawing or a written specification. Special close tolerance, high accuracy sensors can be produced for the most exacting requirements. New machinery or processes may require a new design of temperature sensor and Labfacility can undertake such requirements. Advice is freely available on the best choice of sensor type, probe material, termination method and installation technique to best suit the process.

Sensor capabilities and markets include:
- Vehicle ice-warning
- Steriliser
- Measurement of rotor-blade temperature
- Outside aircraft temperature measurement
- Medical and cryogenic applications
- Aircraft brake-disc temperature testing
- Formula 1 Racing – engine testing and tyre warming
- Manifold automotive engine testing
- Vending machines
- Surface temperature measurement
- Laboratory test equipment
- Food processing Machinery
- Wind tunnel Testing
- Tobacco Machinery
- Heating and Ventilation
- Plastics Machinery
- Textile Industry
- Oil Industry

PROBE CERTIFICATION

Labfacility can supply probes and instruments complete with a UKAS certificate of calibration to order.

Some stock resistance thermometer probes with a UKAS certificate are available for immediate delivery.

Custom calibration to specific customer requirements caters for routine, specified re-calibration for Quality control procedures. Calibration points can be specified between -20°C and +1100°C according to probe and instrumentation specifications. The certificate issued for each sensor will state any calibration error which is measured at the various test values and also the uncertainties which exist in the calibration measurement system.

Thermal Temperature Calibration

Essentially the test probe reading is compared with that of a certified reference probe whilst both are held at a common, stable temperature. Alternatively, if a fixed point cell is used, there is no comparison with a certified thermometer; fixed point cells provide a highly accurate, known reference temperature, that of their phase conversion.
COMPRESSION GLANDS

- Male coupling compression glands for positioning temperature probes
- Brass & stainless steel versions
- 1/8, 1/4, 1/2 BSPP & BSPT
- Suitable for probe diameters 1.0, 1.5, 3.0, 4.5 & 6.0mm
- Metric threads also available from stock
- Imperial probe Sizes available upon request

FLANGE PLATE

- Stainless steel or brass for mounting temperature sensor through a vessel wall
- Suitable for probe diameter 1.5, 3.0,4.5 & 6mm
- 1/8 BSPP female thread to accept compression gland
- 3 x 4mm diameter holes on 40mm pcd

ORDER CODES

<table>
<thead>
<tr>
<th>Material</th>
<th>Stainless steel</th>
<th>Brass</th>
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<tbody>
<tr>
<td>BSPP bore mm</td>
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<tr>
<td>1/8</td>
<td>FC-130</td>
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<td>1/4</td>
<td>FC-131</td>
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<td>1/2</td>
<td>FC-153</td>
<td>FC-153</td>
</tr>
<tr>
<td>1/8</td>
<td>FC-136</td>
<td>FC-136</td>
</tr>
<tr>
<td>1/4</td>
<td>FC-158</td>
<td>FC-158</td>
</tr>
<tr>
<td>1/2</td>
<td>FC-167</td>
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<td>XS-253-RS</td>
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<td>FC-200</td>
<td>FC-200</td>
</tr>
<tr>
<td>1/2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THERMOPOCKETS

- Solid drilled & fabricated versions
- Stainless steel 303 & 316 food grade
- Protect probes from corrosive media
- Facilitate probe replacement without process disturbance
- 1/8 BSPP process thread, 1/4 BSPP sensor connection
- To suit 3 & 6mm diameter probes
- Outside diameter 12mm
- High pressure version for 1000 & 5000 psi (solid drilled)

ORDER CODES

- High pressure version 303 Grade stainless steel (1000 PSI)
  - To suit probe size/Length 6mm x 100mm, 6mm x 150mm
  - Code: LB-005, LB-003, LB-001-RS
- High pressure version 316 Grade Stainless steel (Tapered) (5000 PSI)
  - To suit probe size/Length 6mm x 100mm, 6mm x 150mm, 6mm x 200mm, 6mm x 400mm, 6mm x 600mm

ORDER CODES

<table>
<thead>
<tr>
<th>Bayonet Fittings</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single pin / single slot</td>
<td>CA-300</td>
</tr>
<tr>
<td>3.0mm Grub screw</td>
<td>CA-303</td>
</tr>
<tr>
<td>4.5mm Compression</td>
<td>CA-301</td>
</tr>
<tr>
<td>Bayonet Adaptors</td>
<td>CA-400</td>
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<tr>
<td>35mm Long</td>
<td>CA-400</td>
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<tr>
<td>48mm Long</td>
<td>CA-402</td>
</tr>
<tr>
<td>64mm Long</td>
<td>CA-403</td>
</tr>
</tbody>
</table>

IN-HEAD INDICATORS

DM600 – BATTERY POWERED IN-HEAD FIELD INDICATOR
- Temperature readout in-head
- Battery powered (3 year battery life)
- RTD or TC input options
- Push button configurable
- 4 digit display
- IP67 housing

DM700 – LOOP POWERED IN-HEAD FIELD INDICATOR
- Temperature readout in-head
- 4-20mA Loop Powered
- RTD or TC input options
- Push button configurable
- 4 Digit display
- IP67 housing

Details on request

Alternatives made to order – details on request

www.labfacility.co.uk
**TX104 TEMPERATURE TRANSMITTER**

- Proven, reliable design
- Two wire 4-20mA
- Low cost
- Terminal head mounting, DIN form for KNE, B&N heads
- Thermocouple input J,K and T
- Pt100 input, 2 or 3 wire
- User re-scaleable
- Special ranges to order
- EMC compliant
- Supply 10 to 30V dc
- High accuracy

**Specifications**

**Output** 4-20mA loop powered, Max, 30mA
**Loop supply** 10 to 30V dc reverse connection protected
**Loop resistance** 700Ω @ 24V
**Ambient temperature** 0 to 70°C operating
**Dimensions** 42mm dia x 23mm. Holes 5.5mm x 33mm centres

**TX104P Pt100 input**

- Accuracy ±0.2°C plus +0.2% rdg
- Range adjustment 25°C to 500°C

**TX104 K,T or J thermocouple input**

- Accuracy ±0.1%fs plus cold junction errors
- Offset adjustment ±100°C, solder link & potentiometer
- Span adjustment 100 to 1000°C
- Cold junction Automatic 0 to 70°C
- Rescaleable Type K between 0 and 1000°C
- Type J between 0 and 400°C

**Note:** Thermocouple must have insulated measuring junction

---

**TX203 DIGITAL PRT TEMPERATURE TRANSMITTER**

- Low cost, high accuracy
- Two wire, 4-20mA
- Pt100 input, 2 or 3 wire, -200°C to 850°C
- Terminal head mounting, DIN form for KNE, B & N heads
- EMC compliant
- Supply 10 to 30V dc
- “One shot” digital programming, without “pots”
- Sensor fail LED

**Specifications**

**Input** Pt100, 2/3 wire, IEC751, 100Ω @ 0°C
**Range** -200°C to 850°C
**Accuracy** ±0.1°C ±0.1% of reading
**Output** 4-20mA, loop powered
**Loop supply** 10-35V dc, reverse connection protected
**Loop resistance** 700Ω @24V
**Ambient temperature** -40°C to 85°C
**Dimensions** 38mm dia x 21. Holes 5.5mm dia x 33 centre

**TX205 SMART TEMPERATURE TRANSMITTER**

- Low cost, entry level SMART transmitter
- Galvanic isolation
- High accuracy
- Pt100 input 2 or 3 wire, -200 to 850°C scaleable
- Programming via RS232 interface
- Two wire, 4-20mA
- Thermocouple input J,K,T,R,S,E & N -200 to 1760°C full range, scaleable
- Terminal head mounting
- EMC compliant
- Supply 10-30V dc
- IS version to ExiaIIC T4 T6 available

**Specifications**

**Output** 4-20mA loop powered
**Loop supply** 10-30V dc, reverse connection protected
**Loop resistance** 700Ω @24V
**Ambient temperature** -40°C to 85°C
**Dimensions** 43mm dia x 21. Holes 5.5mm dia x 33 centre

**TX205P Pt100 input**

- Accuracy ±0.1°C ±0.05% of reading
- Cold junction Automatic 0 to 70°C

**TX205T Thermocouple input**

- Types J,K,T,R,S,E,N
- Accuracy ±0.04% full range ±0.4% of reading

**Note:** Thermocouple must have insulated measuring junction

---

**TX210 SMART ISOLATED TEMPERATURE TRANSMITTER**

- Low cost, entry level
- Smart transmitter with galvanic isolation
- High accuracy
- Pt100 input 2 or 3 wire, -200 to 850°C scaleable
- Programming via RS232 interface
- Two wire, 4-20mA
- Thermocouple input J,K,T,R,S,E & N -200 to 1760°C full range, scaleable
- Terminal head mounting, DIN form
- EMC compliant
- Supply 10-30V dc
- IS version to ExiaIIC T4 T6 available

**Specifications**

**Output** 4-20mA loop powered
**Loop supply** 10-30V dc, reverse connection protected
**Loop resistance** 700Ω @24V
**Ambient temperature** -40°C to 85°C
**Dimensions** 43mm dia x 21. Holes 5.5mm dia x 33 centre

**Pt100 input:**

- Accuracy ±0.1°C ±0.05% of reading
- Cold junction Automatic, 0 to 70°C

**Thermocouple input:**

- Types J,K,T,R,S,E,N
- Accuracy ±0.04% full range ±0.4% of reading

---

Alternatives made to order – details on request

www.labfacility.co.uk
EUROPE’S LARGEST RANGE OF TEMPERATURE SENSORS

- Industrial & laboratory thermocouple & PRT probes in configurations to suit any application, ranges from -200°C to 1700°C
- Custom design versions available
- Transmitter-in-head options
- Pt100 elements
- Probe fittings & accessories

All in this brochure

THE BEST IN THERMOCOUPLE CONNECTORS

- Full range of thermocouple connectors – high quality plugs and sockets in IEC 60584, ANSI, JIS, and other colours
- Comprehensive range of fittings and accessories including mounting panels

WIDE RANGE OF HIGH QUALITY THERMOCOUPLE & PRT CABLES

- Extension and compensating cables – a wide range of insulation types and configurations in IEC 60584 and BS 1843 colours including PFA, PTFE, PVC and fibreglass

MARKET LEADING TEMPERATURE & PROCESS INSTRUMENTATION

- Precision digital thermometers
- Multi function digital thermometers
- Calibrators
- Multi-way switches
- Transmitters
- Controllers & Indicators
- Loggers and Scanners
- Digital test Meters

EQUIPMENT & COMPONENT PARTS FOR SENSOR MANUFACTURERS

- Compact thermocouple welder and microwelder
- MI cables, stainless steel sheaths, pots and fittings
- Terminal heads & blocks

VERSATILE DRY BLOCK CALIBRATORS

- Accurate, stable portable calibrators for -10°C to 1200°C to suit industrial & scientific temperature sensors

UKAS TRACEABLE CALIBRATIONS

- Certified probe calibrations between -10°C and 1200°C

And our indispensable Temperature handbook

Extensive pdf downloads available from website
Labfacility market leading products represent more than thirty years of design and applications experience in industrial and laboratory, temperature and process measurement. Labfacility products and services are specified by leading UK and European distributors and manufacturers and are also exported to more than 85 countries.

Quality and Service are key elements in the continued growth of Labfacility; technical support is always freely available from our experienced technical sales teams and the company has ISO9001 accreditation.

Not only do we manufacture temperature sensors and fittings, thermocouple connectors, precision electronic thermometers and thermocouple welders, we also supply thermocouple cables, temperature transmitters, hand held digital thermometers and test instruments, dry block calibrators, loggers, scanners and temperature controllers.

Labfacility – Manufacturer and Stockist

Applications and Industries include:
- Autoclaves
- Aerospace
- Automotive & Motorsport
- Education
- Energy
- Food
- Heat Treatment
- Medical
- Metallurgy
- Meteorology
- Metrology, in particular, R&D, Temperature Calibration, Laboratory and Quality Control departments.
- Plastics & Rubber
- Power Generation.

Extensive pdf downloads available from website

To receive our regular email newsletter, please register your details on our website

www.labfacility.co.uk

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