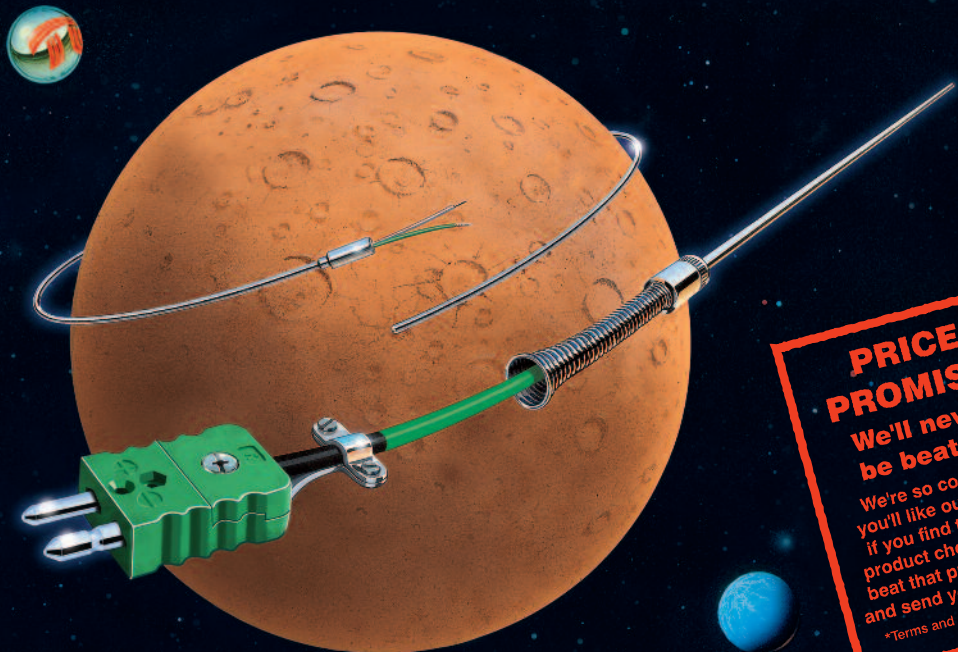


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**2015 / 2016**

# Temperature Measurement and Control Products

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# Some of the Low Cost products

## Thermocouple Sensors



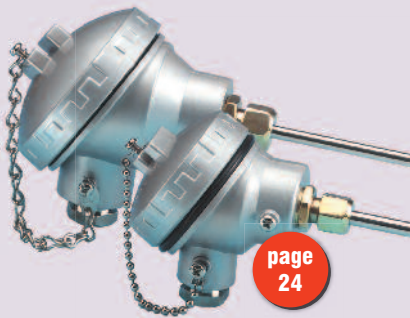
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Mineral Insulated Thermocouples  
with Pot Seals



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Mineral Insulated Thermocouples  
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Mineral Insulated Thermocouples  
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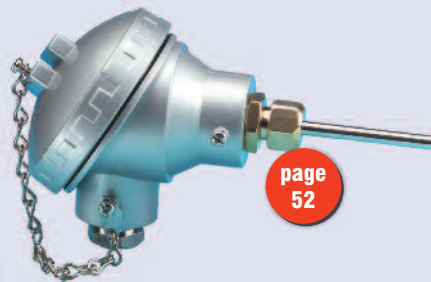
Brake Disc Rubbing  
Thermocouples

## RTD Pt100 Sensors



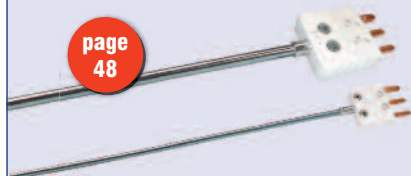
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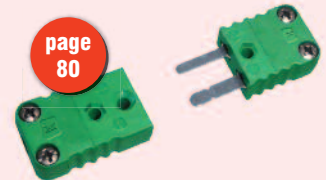
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with 3-pin Plugs



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Silicone Rubber  
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## Cables and Connectors



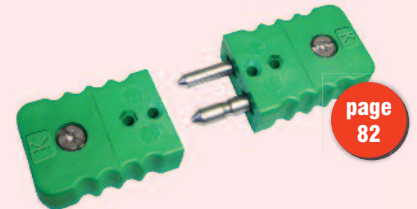
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If you need to measure temperature then we have a vast range of products Ex Stock for immediate overnight delivery! We have no minimum order value. Carriage for next day delivery within the UK is just £12.00 plus VAT per shipment but **free for orders above £100.00**. If you require delivery before Noon next day, charges start at £15.50 plus VAT (depending on location).



Every product has been meticulously tested throughout, and you can be confident of all our in house procedures from manufacturing and stocking right through to order processing and despatch, as we are registered to ISO 9001. We also have a UKAS laboratory if you require any product to be calibrated.

We believe that all the products in this catalogue represent excellent value for money, however, we have selected certain items on the following few pages which we believe are best buys. If you are currently purchasing these products, please check our prices. We are sure that you will not be disappointed.

Our engineers are readily available to assist you. We have been manufacturing and supplying temperature measurement products for over 35 years and have a wealth of experience within the organisation. We can either talk through a problem with you or further technical advice can be emailed or faxed to you by return. Just call us.

An account can instantly be opened for orders over £50.00. If you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



Most of our products are supplied with a no quibble guarantee. If you are unhappy with anything we have supplied you, as long as they are returned within 14 days in the original packing unused, we will give you full credit for the value of the goods. All we ask is that you pay for the cost of returning them. Please note, some items may be non returnable.

Don't hesitate to call us. TC Direct is the distribution division of the TC group of companies and we are able to custom build probably the widest range of temperature sensors, controllers, cables and accessories in Europe. We can quote to your specifications or drawings.



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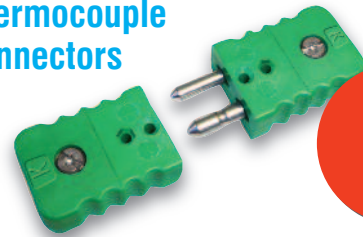
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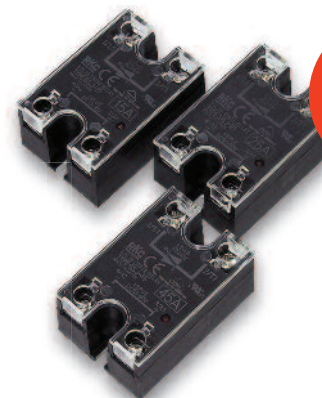
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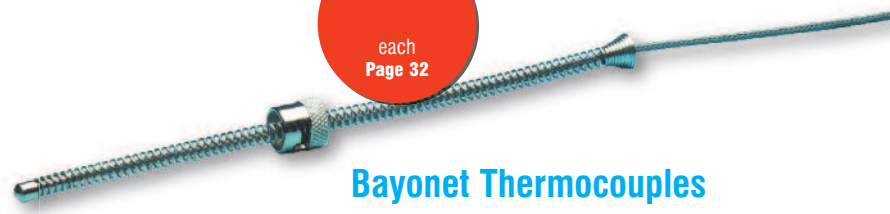
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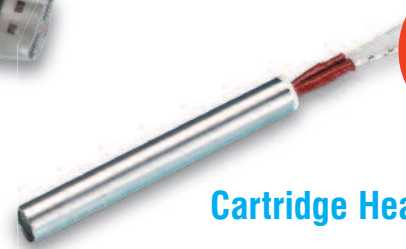
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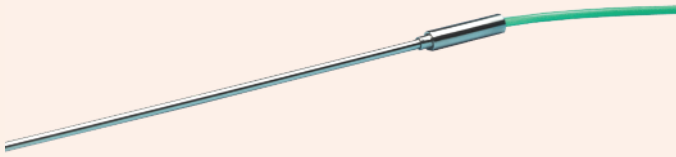


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Mineral Insulated Thermocouples with Pot Seal

# Thermocouple Sensors

## Mineral Insulated Thermocouple with Pot Seal 1.0, 1.5 and 3.0mm diameters



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 1 metre PVC insulated leads is supplied as standard. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N or R available (see page 16)
- Available in 1.0, 1.5 and 3.0mm diameters in a variety of lengths.
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel, Type N - Microbell D sheath or Type R - Inconel 600®
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Leads: 1 metre PVC insulated
- Terminated in a pot seal 6.35mm diameter x 31mm long rated to 105°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Description

408-053	1.0mm dia x 150mm long
408-056	1.0mm dia x 300mm long
408-059	1.0mm dia x 500mm long
408-062	1.0mm dia x 1000mm long
408-065	1.0mm dia x 2000mm long
405-001	1.5mm dia x 150mm long
405-004	1.5mm dia x 300mm long
405-007	1.5mm dia x 500mm long
405-010	1.5mm dia x 1000mm long
405-013	1.5mm dia x 2000mm long
405-016	3.0mm dia x 150mm long
405-019	3.0mm dia x 300mm long
405-022	3.0mm dia x 500mm long
405-025	3.0mm dia x 1000mm long
405-028	3.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No Description

408-110	1.0mm dia x 150mm long
408-113	1.0mm dia x 300mm long
408-116	1.0mm dia x 500mm long
408-119	1.0mm dia x 1000mm long
408-122	1.0mm dia x 2000mm long
405-050	1.5mm dia x 150mm long
405-053	1.5mm dia x 300mm long
405-056	1.5mm dia x 500mm long
405-059	1.5mm dia x 1000mm long
405-062	1.5mm dia x 2000mm long
405-065	3.0mm dia x 150mm long
405-068	3.0mm dia x 300mm long
405-071	3.0mm dia x 500mm long
405-074	3.0mm dia x 1000mm long
405-077	3.0mm dia x 2000mm long

## Mineral Insulated Thermocouple with IP67 Miniature Weatherproof Head



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A small weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available (see page 24)
- Variety of lengths and diameters available
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel and Type N which has a Microbell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Description

405-740	3.0mm dia x 150mm long
405-743	3.0mm dia x 300mm long
405-746	3.0mm dia x 500mm long
405-749	3.0mm dia x 1000mm long
405-752	3.0mm dia x 2000mm long
405-755	6.0mm dia x 150mm long
405-758	6.0mm dia x 300mm long
405-761	6.0mm dia x 500mm long
405-764	6.0mm dia x 1000mm long
405-767	6.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No Description

405-770	3.0mm dia x 150mm long
405-773	3.0mm dia x 300mm long
405-776	3.0mm dia x 500mm long
405-779	3.0mm dia x 1000mm long
405-782	3.0mm dia x 2000mm long
405-785	6.0mm dia x 150mm long
405-788	6.0mm dia x 300mm long
405-791	6.0mm dia x 500mm long
405-794	6.0mm dia x 1000mm long
405-797	6.0mm dia x 2000mm long

### Also Available

All our thermocouple sensors are also available from stock in types J, T and N calibration. Please see the thermocouple sensors section for more details.

For advice, call one of our experienced engineers on:

☎ 01895 855555

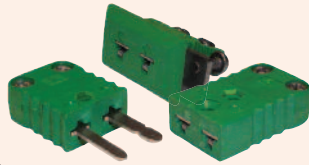
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# Connectors and Transmitters

## Miniature Thermocouple Connectors (rated to 210°C)

These flat pin miniature connectors are ideal for connecting thermocouple sensors and extension or compensating cable to each other.



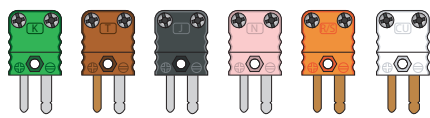
The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C. In addition to offering a plug and socket, a panel socket is also available. Matching anodised aluminium connector panels can also be found in this section. Weatherproof silicone rubber boots for added protection in moist environments and cable clamps are also available.

- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for wire diameters up to 0.6mm**
- **Colour coded to IEC 60584-3 : 2007 Type K - Green, Type T - Brown, Type J - Black, Type N - Pink, Type RCB/SCB - Orange and Copper - White**
- **Dimensions: Plug 19x16x8mm (LxWxD) with 12mm long pins, Socket 26x16x8mm (LxWxD), Panel socket is typically 19x16x8mm (LxWxD) with front bezel 23.5x14mm supplied with bracket for attachment to panel (see page 84 for panel details)**
- **Cable clamps and weatherproof silicone rubber boots offered as options but cannot be used at the same time**
- **Manufactured by the TC Group**

### Miniature Thermocouple Connectors (Rated to 210°C)

Code No	Description
724-102	Type K Miniature Plug
724-104	Type K Miniature Socket
724-106	Type K Miniature Panel Socket
724-108	Type T Miniature Plug
724-110	Type T Miniature Socket
724-112	Type T Miniature Panel Socket
724-114	Type J Miniature Plug
724-116	Type J Miniature Socket
724-118	Type J Miniature Panel Socket
724-120	Type N Miniature Plug
724-122	Type N Miniature Socket
724-124	Type N Miniature Panel Socket
724-126	Type RCB/SCB Miniature Plug
724-128	Type RCB/SCB Miniature Socket
724-130	Type RCB/SCB Miniature Panel Socket
724-132	Copper Miniature Plug
724-134	Copper Miniature Socket
724-136	Copper Miniature Panel Socket
724-790	Miniature Cable Clamp (One per connector)
724-800	Silicone Rubber Boot (One per connector)

**Colour Codes available**  
to IEC 60584-3 : 2007  
(ANSI colours available on request)



Thermocouple Type    K    T    J    N    RCB/SCB    Cu

## Head Mounted Thermocouple and Pt100 Transmitters (Fixed Range)

Our microprocessor based range of linearised thermocouple and Pt100 transmitters are factory ranged for your convenience. They offer high accuracy yet low cost and are ideal for a variety of industrial applications. They can be optionally DIN rail mounted.



- **Available for thermocouple types K, J or T & Pt100 inputs**
- **Fixed ranges for quick connection to your system**
- **Provides a 4-20mA output signal**
- **Suits all standard industrial connection heads with 33mm centre hole fixings or can be optionally DIN rail mounted**
- **CE marked**

### Specifications:

Power Supply: 7-30 V DC  
 Operating Temperature Range: -40°C / +85°C  
 Error Transmission: 0.1% (min 0.5°C for Thermocouple)  
 Response Time (10..90%): <1 s  
 Temperature linearised  
 Burnout: Upscale default (programmable with software)  
 Connection: Push Fit Terminals for quick connection  
 Dimensions: 43.7mm dia x 20mm high body

### Thermocouple Transmitter - Fixed Range

Code No	Description
747-150	Type K -25°C/+150°C
747-154	Type K 0°C/+200°C
747-158	Type K 0°C/+300°C
747-162	Type K 0°C/+600°C
747-166	Type K 0°C/+900°C
747-170	Type K 0°C/+1200°C
747-174	Type T -25°C/+150°C
747-178	Type T 0°C/+300°C
747-182	Type T 0°C/+400°C
747-186	Type J 0°C/+300°C
747-190	Type J 0°C/+600°C
747-194	Type J 0°C/+800°C
747-910	Optional DIN rail mounting kit

### Pt100 Transmitter - Fixed Range

Code No	Description
747-230	Pt100 -25°C/+100°C
747-234	Pt100 0°C/+100°C
747-238	Pt100 0°C/+150°C
747-242	Pt100 0°C/+200°C
747-246	Pt100 0°C/+300°C
747-250	Pt100 0°C/+400°C
747-910	Optional DIN rail mounting kit

Please see pages 80 to 84

For our full range of Thermocouple and RTD Connectors including Miniature and Standard connectors rated to 210°C, 350°C and 650°C.

Please see pages 94 to 100

For our full range of Temperature Transmitters including head mounting, DIN Rail mounting, HART and ATEX approved versions.

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# Temperature Controllers, Indicators & Pt100 Sensors

## NEW! Low Cost, Space Saving Temperature Controllers



This new range of space saving, low cost PID temperature controllers feature an innovative 60mm instrument depth and a large 15mm high LCD display. An improved autotuning algorithm calculates optimum PID values to achieve faster than ever stable control. Other features include 6-level fine tuning, start-up tuning and a 5 year warranty. These low cost controllers are available in 1/16, 1/8 and 1/4 DIN sizes with a variety of output options. A hard plastic front cover is available to prevent the controls of the unit being pressed and settings being changed accidentally. A rear terminal cover to add protection to the rear terminals and help to prevent an electrical shock during operation is also available.

- **Low cost temperature control**
- **Space saving 60mm instrument depth**
- **Large, bright dual LCD Display**
- **PID Auto tuning or On/Off can be selected**
- **1/16 DIN (48x48mm), 1/8 DIN (96x48mm) and 1/4 DIN (96x96mm)**
- **Accuracy: Typically better than  $\pm 0.3\%$  of reading**
- **100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions**
- **Customer rangeable for Type K J T N E R S and B thermocouple or Pt100 inputs**
- **Relay or Solid State Relay drive (SSR) output versions**
- **Non volatile memory**
- **5 year warranty**
- **Accessories:**  
Front hard plastic cover to prevent accidental button operation.  
Rear terminal cover for added protection/safety to rear screw terminals



### 1/16 DIN - 48 x 48 x 63mm deep

Code No Description

309-100	1 alarm - Relay output
309-103	1 alarm - SSR output
309-192	Hard Plastic Front Cover
309-196	Rear Terminal Cover

### 1/8 DIN - 96 x 48 x 60mm deep

Code No Description

309-200	1 alarm - Relay output
309-203	1 alarm - SSR output
309-292	Hard Plastic Front Cover
309-196	Rear Terminal Cover

### 1/4 DIN - 96 x 96 x 60mm deep

Code No Description

309-300	1 alarm - Relay output
309-303	1 alarm - SSR output
309-392	Hard Plastic Front Cover
309-296	Rear Terminal Cover

## Standard Budget RTD Sensor - Pt100

These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. They are terminated with heat shrink which allows the attachment of the 2 metre long PFA extension lead. They are an ideal budget buy for general use up to 200°C. A range of adjustable compression fittings can be found in this catalogue to complement this product.



- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 3mm or 6mm OD**
- **Variety of lengths available (not including heat shrink or extension leads)**
- **Operating range: -50°C to +200°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with PFA oversheath. 3 wire - 2 coloured red and 1 coloured white**

### Standard Budget RTD Sensor

Code No Description

514-103	3mm dia x 100mm long
514-106	3mm dia x 150mm long
514-109	3mm dia x 200mm long
514-110	3mm dia x 250mm long
514-112	3mm dia x 300mm long
514-113	3mm dia x 400mm long
514-115	3mm dia x 500mm long
514-121	6mm dia x 100mm long
514-124	6mm dia x 150mm long
514-127	6mm dia x 200mm long
514-128	6mm dia x 250mm long
514-130	6mm dia x 300mm long
514-131	6mm dia x 400mm long
514-133	6mm dia x 500mm long

## Hand Held Type K Thermocouple Indicator

This hand held digital thermocouple indicator has large 14mm high digits within a LCD display. The case is manufactured from hi-grade ABS plastic and is supplied complete with a moulded rubber holster which makes it ideal for harsh working environments. It also has an offset adjustment for calibrating sensor errors. Other features include max/min hold and data hold function keys, a °C/°F transfer key and an ergonomically designed keypad with non slip function keys.



- **Hand held with moulded rubber holster**
- **0.1°C/F or 1.0°C/F auto ranging resolution dependent on temperature value**
- **Accuracy: -50°C to 999°C  $\pm 0.3\%$  of reading +1°C, 1000°C to 1300°C  $\pm 0.5\%$  of reading +1°C**
- **14mm high digits in LCD display**
- **Offset adjustment**
- **Suitable for use with all our type K thermocouples when connected with a miniature plug**
- **Weight 300g**
- **Power supply: PP3 battery (supplied)**

Code No Description

753-526	Hand Held Type K Indicator
898-406	Spare PP3 9V battery

For advice, call one of our experienced engineers on:

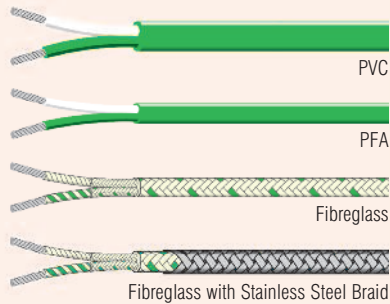
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# Thermocouple Cables

## Thermocouple Extension and Compensating Cable Laid Flat Construction

We supply 7/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA. Each conductor is insulated in either Heat Resistant PVC, PFA, Fibreglass or Fibreglass with Stainless Steel braiding overall. The cores are laid flat and then overall sheathed in the same material with an



optional stainless steel braiding for the fibreglass version. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- **7/0.2mm dia laid flat and overall sheathed construction**
- **Heat Resistant PVC rated to 105°C, PFA rated to 250°C and Fibreglass rated to 480°C**
- **Colour coded :-**  
**Type: KX extension cable: green outer sheath, green pos/white neg core**  
**Type: KCB compensating cable: green outer sheath, green pos/white neg core**  
**Type: TX extension cable: brown outer sheath, brown pos/white neg core**  
**Type: JX extension cable: black outer sheath, black pos/white neg core**  
**Type: NX extension cable: pink outer sheath, pink pos/white neg core**  
**Type: RCA/SCA compensating cable: orange outer, orange pos/white neg core**
- **Available in a variety of lengths**
- **Easy connection to our range of sensors via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers**

### Type KX - Laid Flat Extension Cable

Code No	Description
818-152	25 metre reel - PVC
818-154	50 metre reel - PVC
818-156	100 metre reel - PVC
818-158	200 metre reel - PVC
818-162	25 metre reel - PFA
818-164	50 metre reel - PFA
818-166	100 metre reel - PFA
818-168	200 metre reel - PFA
818-172	25 metre reel - Fibreglass
818-174	50 metre reel - Fibreglass
818-176	100 metre reel - Fibreglass
818-178	200 metre reel - Fibreglass
819-002	25 metre reel - Fibreglass/St St Braided
819-004	50 metre reel - Fibreglass/St St Braided
819-006	100 metre reel - Fibreglass/St St Braided
819-008	200 metre reel - Fibreglass/St St Braided

### Type KCB - Laid Flat Compensation Cable

Code No	Description
818-184	25 metre reel - PVC
818-186	50 metre reel - PVC
818-188	100 metre reel - PVC
818-190	200 metre reel - PVC

### Type TX - Laid Flat Extension Cable

Code No	Description
818-212	25 metre reel - PVC
818-214	50 metre reel - PVC
818-216	100 metre reel - PVC
818-218	200 metre reel - PVC
818-222	25 metre reel - PFA
818-224	50 metre reel - PFA
818-226	100 metre reel - PFA
818-228	200 metre reel - PFA
818-232	25 metre reel - Fibreglass
818-234	50 metre reel - Fibreglass
818-236	100 metre reel - Fibreglass
818-238	200 metre reel - Fibreglass
819-018	25 metre reel - Fibreglass/St St Braided
819-020	50 metre reel - Fibreglass/St St Braided
819-022	100 metre reel - Fibreglass/St St Braided
819-024	200 metre reel - Fibreglass/St St Braided

### Type JX - Laid Flat Extension Cable

Code No	Description
818-272	25 metre reel - PVC
818-274	50 metre reel - PVC
818-276	100 metre reel - PVC
818-278	200 metre reel - PVC
818-282	25 metre reel - PFA
818-284	50 metre reel - PFA
818-286	100 metre reel - PFA
818-288	200 metre reel - PFA
818-292	25 metre reel - Fibreglass
818-294	50 metre reel - Fibreglass
818-296	100 metre reel - Fibreglass
818-298	200 metre reel - Fibreglass
819-036	25 metre reel - Fibreglass/St St Braided
819-038	50 metre reel - Fibreglass/St St Braided
819-040	100 metre reel - Fibreglass/St St Braided
819-042	200 metre reel - Fibreglass/St St Braided

### Type NX - Laid Flat Extension Cable

Code No	Description
818-362	25 metre reel - PVC
818-364	50 metre reel - PVC
818-366	100 metre reel - PVC
818-368	200 metre reel - PVC
818-372	25 metre reel - PFA
818-374	50 metre reel - PFA
818-376	100 metre reel - PFA
818-378	200 metre reel - PFA
818-382	25 metre reel - Fibreglass
818-384	50 metre reel - Fibreglass
818-386	100 metre reel - Fibreglass
818-388	200 metre reel - Fibreglass
819-056	25 metre reel - Fibreglass/St St Braided
819-058	50 metre reel - Fibreglass/St St Braided
819-060	100 metre reel - Fibreglass/St St Braided
819-062	200 metre reel - Fibreglass/St St Braided

These styles of cable are also available for thermocouple types RCA/SCA. Further details can be found on pages 66 and 67. We also have a more extensive range of thermocouple cable as well as cable for RTD Pt100 sensors. These can be found in the main product section of this catalogue.

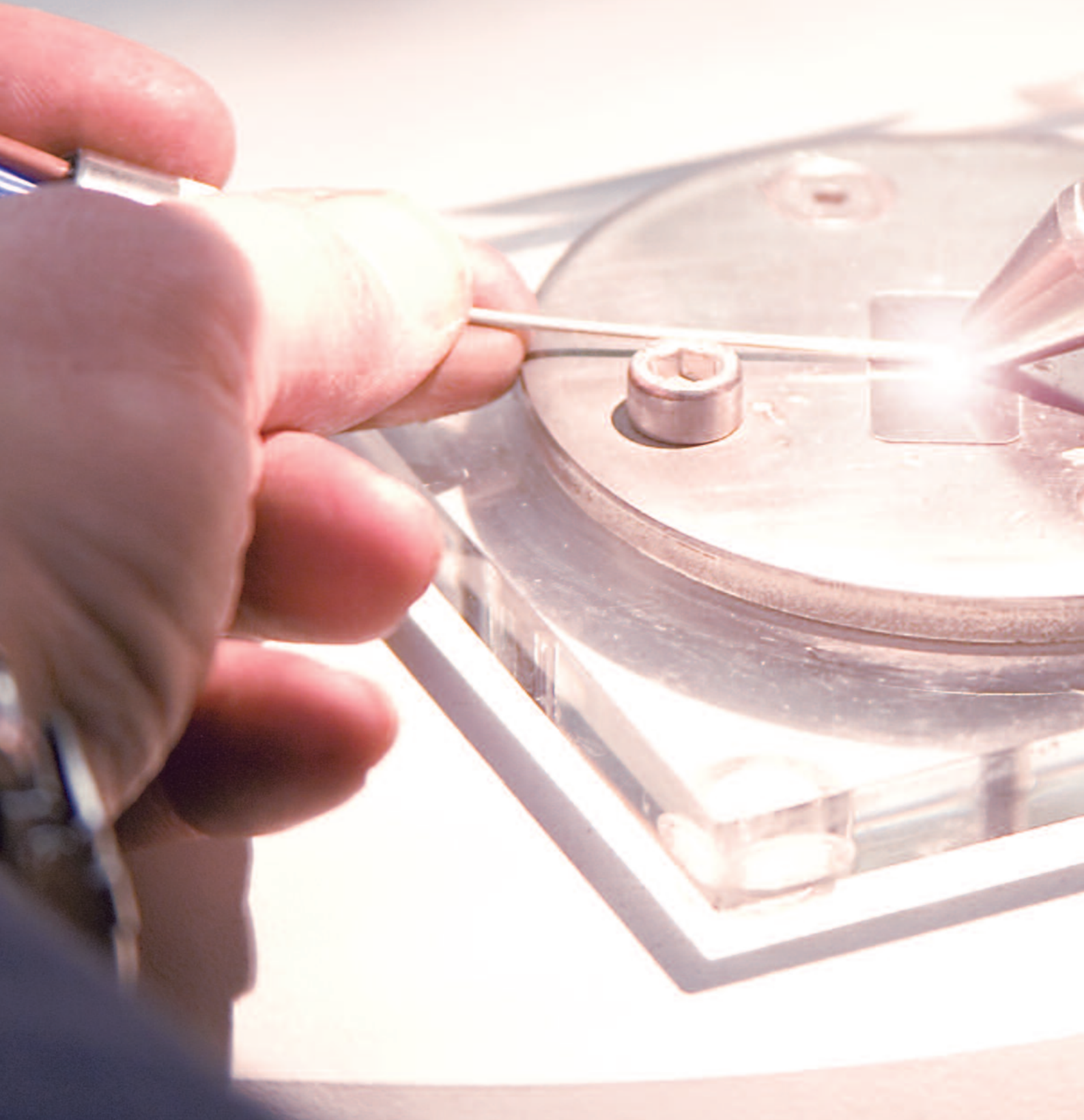
**Fax: 01895 857777**

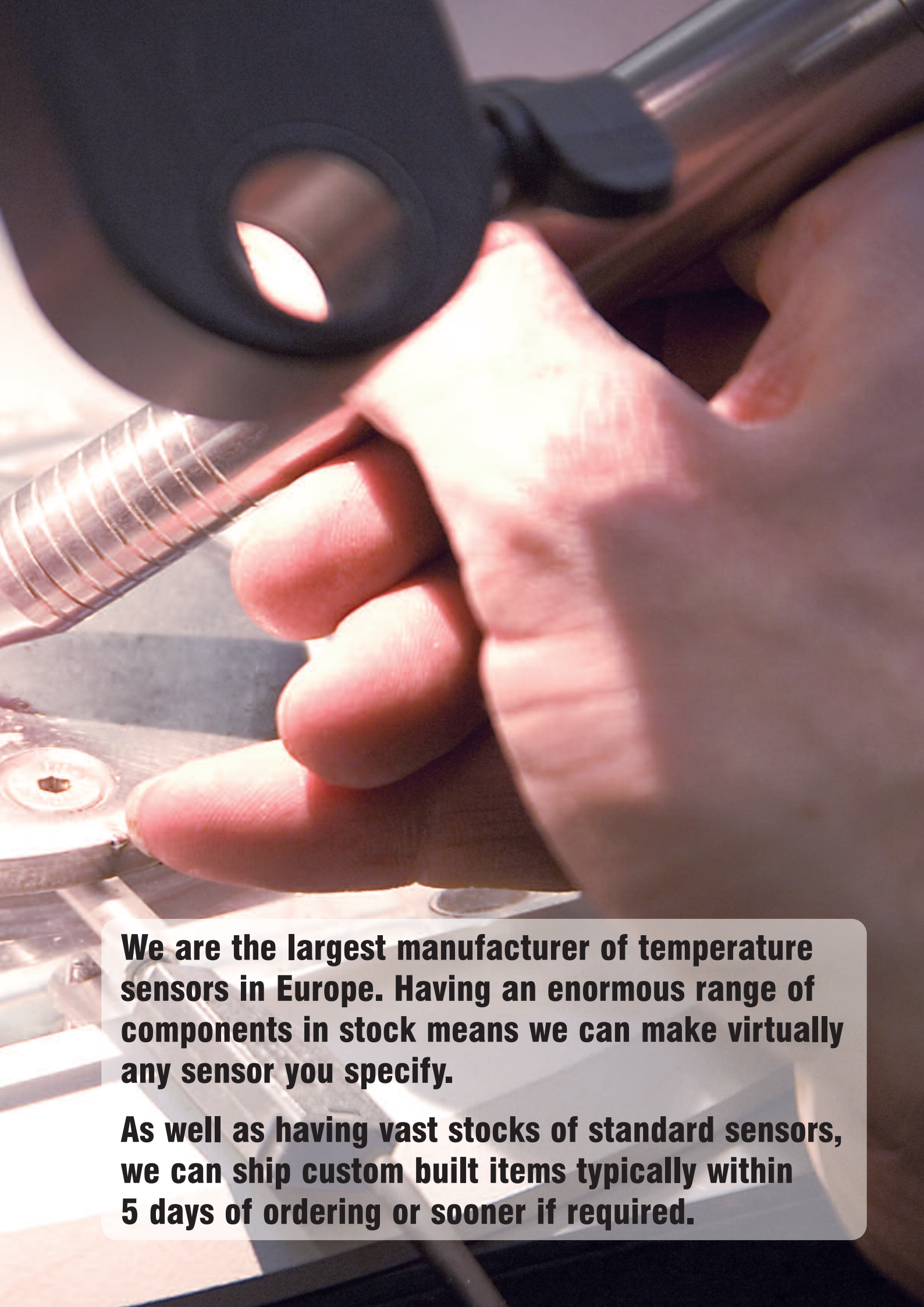
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**TC  
Direct**

**Custom Built or Ex Stock  
Temperature Sensors**





**We are the largest manufacturer of temperature sensors in Europe. Having an enormous range of components in stock means we can make virtually any sensor you specify.**

**As well as having vast stocks of standard sensors, we can ship custom built items typically within 5 days of ordering or sooner if required.**

# Ex Stock Hand Held Thermocouples & Indicators

## Hand Held Type K Thermocouple Single or Dual Input Indicator

These hand held digital thermocouple indicators have large 14mm high digits within an LCD screen. The case is manufactured from hi-grade ABS plastic and is supplied complete with a moulded rubber holster which makes it ideal for harsh working environments. They have an offset adjustment for calibrating sensor errors. Other features include max/min hold and data hold function keys, a °C/°F transfer key and an ergonomically designed keypad with non slip function keys. The dual input model also has a differential key for displaying the difference between two thermocouple inputs.



- Hand held with moulded rubber holster
- 0.1°C/°F or 1°C/°F auto ranging resolution
- Accuracy: Single input: -50°C to 999°C ±0.3% of reading +1°C, 1000°C to 1300°C ±0.5% of reading +1°C. Dual input: -50°C to 0°C ±0.2°C, 0°C to 600°C ±0.3% of reading +1°C, 600°C to 1300°C ±0.5% of reading +1°C
- 14mm high digits in LCD screen
- Offset adjustment
- Suitable for use with all our type K thermocouples terminating in a mini plug
- Weight 300g
- Power supply: PP3 battery (supplied)

Code No Description

753-526	Hand Held Type K Indicator
753-541	Hand Held Type K Indicator with 2 inputs
898-406	Spare PP3 9V battery

## Hand Held Type K Thermocouple Datalogger with Windows® Software

This easy to use hand held digital type K thermocouple datalogger has a large display which shows up to four channels simultaneously for comparing and recording various temperature readings. This lightweight and durable datalogger features a backlit LCD screen which produces a remarkable display quality. The operation interface is intuitive and has a hold and record function to stop and start recordings. The unit is supplied with a USB cable, software for recording data to a PC or laptop on site and a carry case for easy transportation.



- Type K Datalogger with Windows® Software
- Range: -200 to +1370°C
- Resolution: 0.1°C
- Up to 16,000 recordings per channel
- Four channels viewable simultaneously
- Accuracy: ±0.2% of reading +1°C (between -200°C to +200°C and 400°C to 1370°C), ±0.5% of reading +1°C (200°C to 400°C)
- Backlit LCD screen
- Suitable for use with all our type K thermocouples terminating in a mini plug
- Supplied with a USB cable & carry case
- Weight 220g
- Power supply: 9V Battery (supplied)

### Hand Held Type K Thermocouple Datalogger with Windows Software

Code No Description

753-700	Type K Thermocouple Datalogger with Windows Software
---------	--

## Hand Held Multi Thermocouple Single or Dual Input Indicator

These hand held digital thermocouple indicators accept K, T, J, N, E, R & S thermocouple types and have a clear LCD screen. They have either one or two thermocouple inputs dependent upon model selected. The dual unit allows the user to make two readings which can be viewed alternately as required or a differential reading can be obtained at the touch of a button showing the difference in temperature between the two thermocouples. The case is manufactured from hi-grade ABS plastic and is supplied complete with a moulded rubber holster which makes it ideal for harsh working environments. It also has a flip out desk stand built into the rear of the instrument for bench work. Other features include max/min/avg display and data hold function keys, timer, a °C/°F/K transfer key and an ergonomically designed keypad with non slip function keys.



- One or two thermocouple inputs dependent upon model selected
- Hand held with moulded rubber holster
- Resolution: 0.1°C/0.1°F/0.1K
- Accuracy: Types K, J, E and T: ±0.1% of reading +0.7°C (-100°C to +1300°C), Types R and S: ±0.1% of reading +2°C (0°C to 1700°C), Type N: ±0.1% of reading +1.5°C (-100°C to +1300°C)
- Read rate: once per second
- Suitable for use with most thermocouple types
- Weight 270g
- Power supply: 4 x AAA battery (supplied)

### Hand Held Multi Thermocouple Indicator

Code No Description

753-661	Single Input Multi Thermocouple Type Indicator
753-671	Dual Input Multi Thermocouple Type Indicator
898-567	Spare pack of 4 AAA Batteries

## Hand Held Thermocouple Sensors - Type K

We offer a wide range of hand held thermocouple sensors to suit a variety of applications. All sensors are supplied with a 1 metre (extended) coiled lead and a miniature flat pin plug which makes them suitable for all our hand held indicators as well as most other brands of indicators. They can also be connected to other instrumentation by using thermocouple extension cable and the appropriate connectors which can also be found in this catalogue.

### General Purpose Sensor

Our general purpose style is offered with a semi flexible mineral insulated sheath in either 3 or 6mm dia. in a variety of lengths. The stem is rated to 800°C and the handle to 135°C.



Code No Description

406-700	3mm dia x 150mm
406-703	3mm dia x 300mm
406-706	3mm dia x 500mm
406-709	6mm dia x 150mm
406-712	6mm dia x 300mm
406-715	6mm dia x 500mm

For advice, call one of our experienced engineers on:

01895 855555

TC Direct

# Ex Stock Hand Held Thermocouples & Indicators

## Spring Loaded Surface Sensor

This sensor has a ribbon style butt welded sensing tip which allows a fast response when placed upon a solid surface. The tip is rated to 400°C and the handle to 135°C.



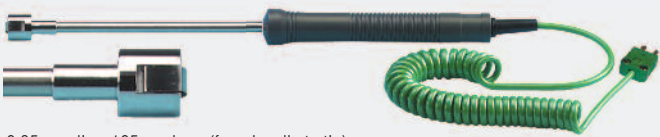
6.35mm dia x 165mm long (from handle to tip)

Code No	Description
---------	-------------

406-735	Spring Loaded Surface Sensor
---------	------------------------------

## Heavy Duty Spring Loaded Surface Sensor

This is a more robust version of the same style with a larger butt welded ribbon junction. Whilst stronger, the response time is not as good as the standard version; however, in most applications it is perfectly acceptable. The tip is rated to 400°C and the handle to 135°C.



6.35mm dia x 165mm long (from handle to tip)

Code No	Description
---------	-------------

406-755	Heavy Duty Spring Loaded Surface Sensor
---------	---

## Spring Loaded Surface Sensor with 90° Bend

This sensor has the standard fast response butt welded junction, but the sensing tip is positioned at a right angle for difficult to reach applications. The tip is rated to 400°C and the handle to 135°C.



6.35mm dia x 195mm long (140mm to start of bend)

Code No	Description
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406-775	Spring Loaded Surface Sensor with 90° Bend
---------	--

## Heavy Duty Spring Loaded Sensor with 90° Bend

This version has a robust butt welded junction and right angle positioning for difficult to reach applications. Whilst stronger, the response time is not as good as the standard version; however, in most applications it is perfectly acceptable. The tip is rated to 400°C and the handle to 135°C.



6.35mm dia x 195mm long (140mm to start of bend)

Code No	Description
---------	-------------

406-795	Heavy Duty Spring Loaded Sensor with 90° Bend
---------	---

## Fast Response Air/Gas Sensor

This style is ideal for measuring air or gas flows as it has a perforated sheath to allow for fast sensing. The stem is rated to 800°C and the handle to 135°C.



4.85mm dia x 155mm long (from handle to tip)

Code No	Description
---------	-------------

406-815	Fast Response Air/Gas Sensor
---------	------------------------------

## Needle Penetration Sensor

This sensor can be used for penetrating extreme semi solids as it has a sharp sensing tip. The stem is rated to 800°C and the handle to 135°C.



4.85mm dia x 155mm long (from handle to tip)

Code No	Description
---------	-------------

406-835	Needle Penetration Sensor
---------	---------------------------

## Heavy Duty Needle Penetration Sensor

This sensor is similar to the standard Needle Penetration Sensor, however it can be hammered into fairly solid applications such as frozen food product etc.



6.35mm dia x 150mm long (from handle to tip)

Code No	Description
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406-855	Heavy Duty Needle Penetration Sensor
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## Moving Surface Roller Sensor

We offer two styles of moving surface roller sensors. One has PTFE wheels which makes it ideal for low abrasion resistance requirements and is rated to 250°C. The other has stainless steel wheels which is not as good as the PTFE version for abrasion resistance applications; however, it can be used up to 300°C.



Code No	Description
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406-875	PTFE Wheels - Roller Sensor
---------	-----------------------------

406-878	Stainless Steel Wheels - Roller Sensor
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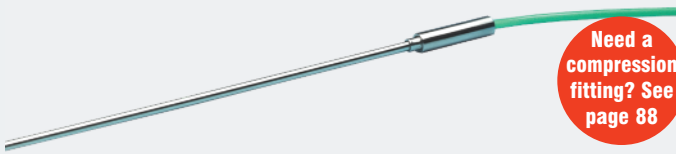
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be beaten!



# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with Pot Seal 1.0, 1.5 and 3.0mm diameters



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 1 metre PVC insulated leads is supplied as standard. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N or R available
- Available in 1.0, 1.5 and 3.0mm diameters in a variety of lengths.
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel, Type N - Nicrobell D sheath or Type R - Inconel 600®
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Leads: 1 metre PVC insulated
- Terminated in a pot seal 6.35mm diameter x 31mm long rated to 105°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No	Description
408-053	1.0mm dia x 150mm long
408-056	1.0mm dia x 300mm long
408-059	1.0mm dia x 500mm long
408-062	1.0mm dia x 1000mm long
408-065	1.0mm dia x 2000mm long
405-001	1.5mm dia x 150mm long
405-004	1.5mm dia x 300mm long
405-007	1.5mm dia x 500mm long
405-010	1.5mm dia x 1000mm long
405-013	1.5mm dia x 2000mm long
405-016	3.0mm dia x 150mm long
405-019	3.0mm dia x 300mm long
405-022	3.0mm dia x 500mm long
405-025	3.0mm dia x 1000mm long
405-028	3.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
408-110	1.0mm dia x 150mm long
408-113	1.0mm dia x 300mm long
408-116	1.0mm dia x 500mm long
408-119	1.0mm dia x 1000mm long
408-122	1.0mm dia x 2000mm long
405-050	1.5mm dia x 150mm long
405-053	1.5mm dia x 300mm long
405-056	1.5mm dia x 500mm long
405-059	1.5mm dia x 1000mm long
405-062	1.5mm dia x 2000mm long
405-065	3.0mm dia x 150mm long
405-068	3.0mm dia x 300mm long
405-071	3.0mm dia x 500mm long
405-074	3.0mm dia x 1000mm long
405-077	3.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
408-201	1.0mm dia x 150mm long
408-204	1.0mm dia x 300mm long
408-207	1.0mm dia x 500mm long
408-210	1.0mm dia x 1000mm long
408-213	1.0mm dia x 2000mm long
405-110	1.5mm dia x 150mm long
405-113	1.5mm dia x 300mm long
405-116	1.5mm dia x 500mm long
405-119	1.5mm dia x 1000mm long
405-122	1.5mm dia x 2000mm long
405-125	3.0mm dia x 150mm long
405-128	3.0mm dia x 300mm long
405-131	3.0mm dia x 500mm long
405-134	3.0mm dia x 1000mm long
405-137	3.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
408-250	1.0mm dia x 150mm long
408-253	1.0mm dia x 300mm long
408-256	1.0mm dia x 500mm long
408-259	1.0mm dia x 1000mm long
408-262	1.0mm dia x 2000mm long
405-160	1.5mm dia x 150mm long
405-163	1.5mm dia x 300mm long
405-166	1.5mm dia x 500mm long
405-169	1.5mm dia x 1000mm long
405-172	1.5mm dia x 2000mm long
405-175	3.0mm dia x 150mm long
405-178	3.0mm dia x 300mm long
405-181	3.0mm dia x 500mm long
405-184	3.0mm dia x 1000mm long
405-187	3.0mm dia x 2000mm long

### Type N - Nicrobell D® Sheath (1250°C)

Code No	Description
408-310	1.0mm dia x 150mm long
408-313	1.0mm dia x 300mm long
408-316	1.0mm dia x 500mm long
408-319	1.0mm dia x 1000mm long
408-322	1.0mm dia x 2000mm long
405-210	1.5mm dia x 150mm long
405-213	1.5mm dia x 300mm long
405-216	1.5mm dia x 500mm long
405-219	1.5mm dia x 1000mm long
405-222	1.5mm dia x 2000mm long
405-225	3.0mm dia x 150mm long
405-228	3.0mm dia x 300mm long
405-231	3.0mm dia x 500mm long
405-234	3.0mm dia x 1000mm long
405-237	3.0mm dia x 2000mm long

### Type R - Inconel 600® Sheath (850°C)

Code No	Description
408-610	1.0mm dia x 300mm long
408-613	1.0mm dia x 500mm long
408-616	1.0mm dia x 1000mm long
408-619	1.5mm dia x 300mm long
408-622	1.5mm dia x 500mm long
408-625	1.5mm dia x 1000mm long

Note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

Please visit [www.tcdirect.co.uk](http://www.tcdirect.co.uk) for a larger selection of Ex Stock sheath lengths

For advice, call one of our experienced engineers on:

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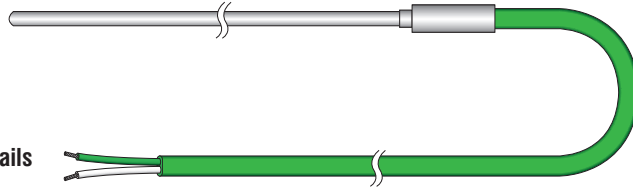
# Custom Built Thermocouples

## Mineral Insulated Thermocouple with Pot Seal 0.25mm to 3.0mm diameters

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you.

Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 0.25mm to 3mm
- Wide choice of sheath materials
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



See page 19 for diameters 4.5mm and above

SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C

SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
<b>Standard Sizes</b>	0.25mm	0.010"
	0.5mm	0.020"
	1.0mm	0.039"
	1.5mm	0.059"
	2.0mm	0.079"
	3.0mm	0.118"

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Extension Cables (please specify length in metres)
<b>A30</b>	PVC Insulation (105°C)
<b>B50</b>	PFA Insulation (250°C)
<b>C40</b>	Fibreglass Insulation (480°C)
<b>C60</b>	Fibreglass Insulation with Stainless Steel Overbraid (480°C)

SECTION 6	Optional Stainless Steel Adjustable Compression Fittings	
Dia.	1/8" BSPT	1/4" BSPT
0.5mm	ACF80S	—
1.0mm	ACF01S	ACF76S
1.5mm	ACF02S	ACF69S
2.0mm	ACF04S	ACF53S
3.0mm	ACF05S	ACF59S

For our full range of fittings, please See page 88

### Order Code - Example

Type N°	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Dia. (See section 3)	Sensing Junction (See section 4)	Termination (pot seal)	Extension Cable (See section 5)	Compression Fitting (Optional, see section 6)
<b>12</b>	<b>- K</b>	<b>- 450</b>	<b>- 118</b>	<b>- 3.0</b>	<b>- 2I</b>	<b>- 3P2L</b>	<b>- 2m A30KX</b>	<b>- ACF05S</b>

Call us on 01895 855555 to discuss your requirements

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with Pot Seal - 4.5 and 6.0mm diameters



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 1 metre PVC insulated leads is supplied as standard. A complete range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available
- Available in 4.5 and 6.0mm diameters in a variety of lengths
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel and Type N which has a Microbell D sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Leads: 1 metre PVC insulated
- Terminated in a pot seal 12.7mm diameter x 29mm long rated to 105°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No	Description
408-380	4.5mm dia x 150mm long
408-383	4.5mm dia x 300mm long
408-386	4.5mm dia x 500mm long
408-389	4.5mm dia x 1000mm long
408-392	4.5mm dia x 2000mm long
405-031	6.0mm dia x 150mm long
405-034	6.0mm dia x 300mm long
405-037	6.0mm dia x 500mm long
405-040	6.0mm dia x 1000mm long
405-043	6.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
408-410	4.5mm dia x 150mm long
408-413	4.5mm dia x 300mm long
408-416	4.5mm dia x 500mm long
408-419	4.5mm dia x 1000mm long
408-422	4.5mm dia x 2000mm long
405-083	6.0mm dia x 150mm long
405-086	6.0mm dia x 300mm long
405-089	6.0mm dia x 500mm long
405-092	6.0mm dia x 1000mm long
405-095	6.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
408-440	4.5mm dia x 150mm long
408-443	4.5mm dia x 300mm long
408-446	4.5mm dia x 500mm long
408-449	4.5mm dia x 1000mm long
408-452	4.5mm dia x 2000mm long
405-140	6.0mm dia x 150mm long
405-143	6.0mm dia x 300mm long
405-146	6.0mm dia x 500mm long
405-149	6.0mm dia x 1000mm long
405-152	6.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
408-490	4.5mm dia x 150mm long
408-493	4.5mm dia x 300mm long
408-496	4.5mm dia x 500mm long
408-499	4.5mm dia x 1000mm long
408-502	4.5mm dia x 2000mm long
405-190	6.0mm dia x 150mm long
405-193	6.0mm dia x 300mm long
405-196	6.0mm dia x 500mm long
405-199	6.0mm dia x 1000mm long
405-202	6.0mm dia x 2000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No	Description
408-550	4.5mm dia x 150mm long
408-553	4.5mm dia x 300mm long
408-556	4.5mm dia x 500mm long
408-559	4.5mm dia x 1000mm long
408-562	4.5mm dia x 2000mm long
405-246	6.0mm dia x 150mm long
405-249	6.0mm dia x 300mm long
405-252	6.0mm dia x 500mm long
405-255	6.0mm dia x 1000mm long
405-258	6.0mm dia x 2000mm long

### Can't see what you want ?

Don't hesitate to call us. TC Direct is the distribution division of the TC group of companies. We are able to custom build the widest range of temperature sensors in Europe. We can quote to your specifications or drawings. Most custom built products can be made for you in days!

### Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

Please visit [www.tcdirect.co.uk](http://www.tcdirect.co.uk) for a larger selection of Ex Stock sheath lengths

For advice, call one of our experienced engineers on:

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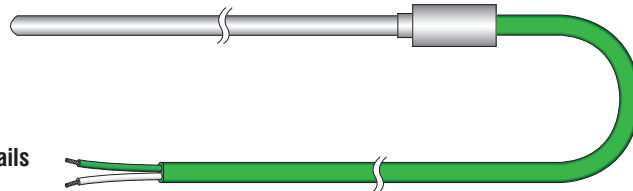
# Custom Built Thermocouples

## Mineral Insulated Thermocouple with Pot Seal 4.5mm to 10.8mm diameters

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you.

Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 4.5mm to 10.8mm
- Wide choice of sheath materials
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



See page 17 for diameters 3.0mm and below

SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C

SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
<b>Standard Sizes</b>	4.5mm	0.177"
	5.5mm*	0.216"
	6.0mm	0.236"
	8.0mm	0.315"
	10.8mm*	0.425"

\* 5.5mm and 10.8mm sheaths are thick wall for heavy duty use

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Extension Cables (please specify length in metres)	
<b>A30</b>	PVC Insulation (105°C)	
<b>B50</b>	PFA Insulation (250°C)	
<b>C40</b>	Fibreglass Insulation (480°C)	
<b>C60</b>	Fibreglass Insulation with Stainless Steel Overbraid (480°C)	

SECTION 6	Optional Stainless Steel Adjustable Compression Fittings		
Dia.	1/4" BSPT	1/2" BSPT	
4.5mm	ACF10S	ACF11S	
5.5mm	ACF13S	ACF14S	
6.0mm	ACF16S	ACF17S	
8.0mm	ACF27S	ACF56S	
10.8mm	—	ACF41S	

For our full range of fittings, please See page 88

### Order Code - Example

Type N°	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Dia. (See section 3)	Sensing Junction (See section 4)	Termination (pot seal)	Extension Cable (See section 5)	Compression Fitting (Optional, see section 6)
<b>12</b>	<b>- J</b>	<b>- 500</b>	<b>- 118</b>	<b>- 6.0</b>	<b>- 2I</b>	<b>- 3P4CL</b>	<b>- 2m A30JX</b>	<b>- ACF17S</b>

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# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with Miniature Flat Pin Plug



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A miniature flat pin plug is incorporated and is compatible with the miniature thermocouple sockets available in this catalogue. A range of extension cables and adjustable compression fittings can also be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available
- Variety of lengths and diameters available
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J 321 Stainless Steel Sheath and Type N which has a Microbell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in a miniature thermocouple plug rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Description

405-270	1.0mm dia x 150mm long
405-273	1.0mm dia x 300mm long
405-276	1.0mm dia x 500mm long
405-279	1.0mm dia x 1000mm long
405-282	1.0mm dia x 2000mm long
405-285	1.5mm dia x 150mm long
405-288	1.5mm dia x 300mm long
405-291	1.5mm dia x 500mm long
405-294	1.5mm dia x 1000mm long
405-297	1.5mm dia x 2000mm long
405-300	3.0mm dia x 150mm long
405-303	3.0mm dia x 300mm long
405-306	3.0mm dia x 500mm long
405-309	3.0mm dia x 1000mm long
405-312	3.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No Description

405-320	1.0mm dia x 150mm long
405-323	1.0mm dia x 300mm long
405-326	1.0mm dia x 500mm long
405-329	1.0mm dia x 1000mm long
405-332	1.0mm dia x 2000mm long
405-335	1.5mm dia x 150mm long
405-338	1.5mm dia x 300mm long
405-341	1.5mm dia x 500mm long
405-344	1.5mm dia x 1000mm long
405-347	1.5mm dia x 2000mm long
405-350	3.0mm dia x 150mm long
405-353	3.0mm dia x 300mm long
405-356	3.0mm dia x 500mm long
405-359	3.0mm dia x 1000mm long
405-362	3.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No Description

405-370	1.0mm dia x 150mm long
405-373	1.0mm dia x 300mm long
405-376	1.0mm dia x 500mm long
405-379	1.0mm dia x 1000mm long
405-382	1.0mm dia x 2000mm long
405-385	1.5mm dia x 150mm long
405-388	1.5mm dia x 300mm long
405-391	1.5mm dia x 500mm long
405-394	1.5mm dia x 1000mm long
405-397	1.5mm dia x 2000mm long
405-400	3.0mm dia x 150mm long
405-403	3.0mm dia x 300mm long
405-406	3.0mm dia x 500mm long
405-409	3.0mm dia x 1000mm long
405-412	3.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No Description

405-420	1.0mm dia x 150mm long
405-423	1.0mm dia x 300mm long
405-426	1.0mm dia x 500mm long
405-429	1.0mm dia x 1000mm long
405-432	1.0mm dia x 2000mm long
405-435	1.5mm dia x 150mm long
405-438	1.5mm dia x 300mm long
405-441	1.5mm dia x 500mm long
405-444	1.5mm dia x 1000mm long
405-447	1.5mm dia x 2000mm long
405-450	3.0mm dia x 150mm long
405-453	3.0mm dia x 300mm long
405-456	3.0mm dia x 500mm long
405-459	3.0mm dia x 1000mm long
405-462	3.0mm dia x 2000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No Description

405-470	1.0mm dia x 150mm long
405-473	1.0mm dia x 300mm long
405-476	1.0mm dia x 500mm long
405-479	1.0mm dia x 1000mm long
405-482	1.0mm dia x 2000mm long
405-485	1.5mm dia x 150mm long
405-488	1.5mm dia x 300mm long
405-491	1.5mm dia x 500mm long
405-494	1.5mm dia x 1000mm long
405-497	1.5mm dia x 2000mm long
405-500	3.0mm dia x 150mm long
405-503	3.0mm dia x 300mm long
405-506	3.0mm dia x 500mm long
405-509	3.0mm dia x 1000mm long
405-512	3.0mm dia x 2000mm long

### Matching Miniature Socket

Code No Description

724-104	Type K
724-110	Type T
724-116	Type J
724-122	Type N

Please visit [www.tcdirect.co.uk](http://www.tcdirect.co.uk) for a larger selection of Ex Stock sheath lengths

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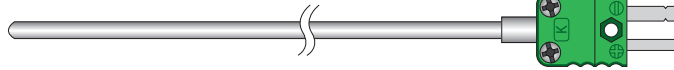
# Custom Built Thermocouples

## Mineral Insulated Thermocouple with Miniature Flat Pin Plug

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you.

Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 0.25mm to 3mm
- Wide choice of sheath materials
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner

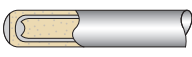
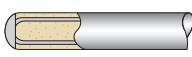


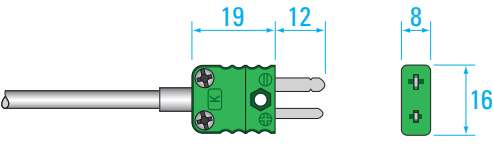
For mating miniature sockets, please see page 80

SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C

SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
<b>Standard Sizes</b>	0.25mm	0.010"
	0.5mm	0.020"
	1.0mm	0.039"
	1.5mm	0.059"
	2.0mm	0.079"
	3.0mm	0.118"

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Termination
<b>3P6M</b>	

SECTION 6	Optional Stainless Steel Adjustable Compression Fittings	
Dia.	1/8" BSPT	1/4" BSPT
0.5mm	ACF80S	—
1.0mm	ACF01S	ACF76S
1.5mm	ACF02S	ACF69S
2.0mm	ACF04S	ACF53S
3.0mm	ACF05S	ACF59S

For our full range of fittings, please See page 88

### Order Code - Example

Type N°	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Diameter (See section 3)	Sensing Junction (See section 4)	Termination (See section 5)	Compression Fitting (Optional, see section 6)
<b>12</b>	<b>- K</b>	<b>- 250</b>	<b>- 118</b>	<b>- 3.0</b>	<b>- 2I</b>	<b>- 3P6M</b>	<b>- ACF05S</b>

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# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with Standard Round Pin Plug



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A standard round pin thermocouple plug is incorporated and is compatible with the standard thermocouple sockets available in this catalogue. A range of extension cables and adjustable compression fittings can also be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available
- Variety of lengths and diameters available
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J 321 Stainless Steel Sheath and Type N which has a Microbell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in a standard round pin plug rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No	Description
405-520	1.5mm dia x 150mm long
405-523	1.5mm dia x 300mm long
405-526	1.5mm dia x 500mm long
405-529	1.5mm dia x 1000mm long
405-532	1.5mm dia x 2000mm long
405-535	3.0mm dia x 150mm long
405-538	3.0mm dia x 300mm long
405-541	3.0mm dia x 500mm long
405-544	3.0mm dia x 1000mm long
405-547	3.0mm dia x 2000mm long
405-550	6.0mm dia x 150mm long
405-553	6.0mm dia x 300mm long
405-556	6.0mm dia x 500mm long
405-559	6.0mm dia x 1000mm long
405-562	6.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
405-565	1.5mm dia x 150mm long
405-568	1.5mm dia x 300mm long
405-571	1.5mm dia x 500mm long
405-574	1.5mm dia x 1000mm long
405-577	1.5mm dia x 2000mm long
405-580	3.0mm dia x 150mm long
405-583	3.0mm dia x 300mm long
405-586	3.0mm dia x 500mm long
405-589	3.0mm dia x 1000mm long
405-592	3.0mm dia x 2000mm long
405-595	6.0mm dia x 150mm long
405-596	6.0mm dia x 300mm long
405-597	6.0mm dia x 500mm long
405-598	6.0mm dia x 1000mm long
405-599	6.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
405-600	1.5mm dia x 150mm long
405-603	1.5mm dia x 300mm long
405-606	1.5mm dia x 500mm long
405-609	1.5mm dia x 1000mm long
405-612	1.5mm dia x 2000mm long
405-615	3.0mm dia x 150mm long
405-618	3.0mm dia x 300mm long
405-621	3.0mm dia x 500mm long
405-624	3.0mm dia x 1000mm long
405-627	3.0mm dia x 2000mm long
405-630	6.0mm dia x 150mm long
405-633	6.0mm dia x 300mm long
405-636	6.0mm dia x 500mm long
405-639	6.0mm dia x 1000mm long
405-642	6.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
405-650	1.5mm dia x 150mm long
405-653	1.5mm dia x 300mm long
405-656	1.5mm dia x 500mm long
405-659	1.5mm dia x 1000mm long
405-662	1.5mm dia x 2000mm long
405-665	3.0mm dia x 150mm long
405-668	3.0mm dia x 300mm long
405-671	3.0mm dia x 500mm long
405-674	3.0mm dia x 1000mm long
405-677	3.0mm dia x 2000mm long
405-680	6.0mm dia x 150mm long
405-683	6.0mm dia x 300mm long
405-686	6.0mm dia x 500mm long
405-689	6.0mm dia x 1000mm long
405-692	6.0mm dia x 2000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No	Description
405-695	1.5mm dia x 150mm long
405-698	1.5mm dia x 300mm long
405-701	1.5mm dia x 500mm long
405-704	1.5mm dia x 1000mm long
405-707	1.5mm dia x 2000mm long
405-710	3.0mm dia x 150mm long
405-713	3.0mm dia x 300mm long
405-716	3.0mm dia x 500mm long
405-719	3.0mm dia x 1000mm long
405-722	3.0mm dia x 2000mm long
405-725	6.0mm dia x 150mm long
405-728	6.0mm dia x 300mm long
405-731	6.0mm dia x 500mm long
405-734	6.0mm dia x 1000mm long
405-737	6.0mm dia x 2000mm long

### Matching Standard Socket

Code No	Description
724-322	Type K
724-328	Type T
724-334	Type J
724-340	Type N

Please visit [www.tcdirect.co.uk](http://www.tcdirect.co.uk) for a larger selection of Ex Stock sheath lengths

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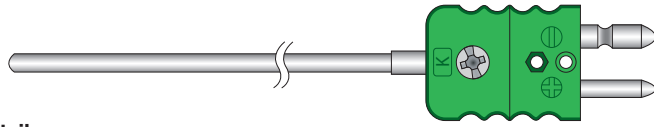
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# Custom Built Thermocouples

## Mineral Insulated Thermocouple with Standard Round Pin Plug

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 1.5mm to 6mm
- Wide choice of sheath materials
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner

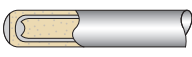
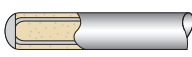


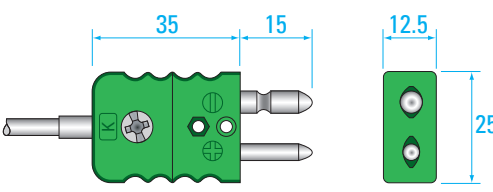
For mating standard sockets, please see page 82

SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C

SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
<b>Standard Sizes</b>	1.5mm	0.059"
	2.0mm	0.079"
	3.0mm	0.118"
	4.5mm	0.177"
	6.0mm	0.236"

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Termination
<b>3P6</b>	

SECTION 6	Optional Stainless Steel Adjustable Compression Fittings	
Dia.	1/4" BSPT	1/2" BSPT
1.5mm	ACF69S	—
3.0mm	ACF59S	ACF58S
4.5mm	ACF10S	ACF11S
6.0mm	ACF16S	ACF17S

For our full range of fittings, please See page 88

### Order Code - Example

Type N°	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Diameter (See section 3)	Sensing Junction (See section 4)	Termination (See section 5)	Compression Fitting (Optional, see section 6)
<b>12</b>	<b>- K</b>	<b>- 450</b>	<b>- 118</b>	<b>- 6.0</b>	<b>- 2I</b>	<b>- 3P6</b>	<b>- ACF17S</b>

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# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with IP67 Miniature Weatherproof Head



**Need a  
compression  
fitting? See  
page 88**

These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A small weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available
- Variety of lengths and diameters available
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel and Type N which has a Microbell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Description

405-739	3.0mm dia x 100mm long
405-740	3.0mm dia x 150mm long
405-741	3.0mm dia x 200mm long
405-742	3.0mm dia x 250mm long
405-743	3.0mm dia x 300mm long
405-744	3.0mm dia x 400mm long
405-746	3.0mm dia x 500mm long
405-747	3.0mm dia x 750mm long
405-749	3.0mm dia x 1000mm long
405-750	3.0mm dia x 1500mm long
405-752	3.0mm dia x 2000mm long
405-753	3.0mm dia x 3000mm long
405-754	6.0mm dia x 100mm long
405-755	6.0mm dia x 150mm long
405-756	6.0mm dia x 200mm long
405-757	6.0mm dia x 250mm long
405-758	6.0mm dia x 300mm long
405-759	6.0mm dia x 400mm long
405-761	6.0mm dia x 500mm long
405-762	6.0mm dia x 750mm long
405-764	6.0mm dia x 1000mm long
405-765	6.0mm dia x 1500mm long
405-767	6.0mm dia x 2000mm long
405-768	6.0mm dia x 3000mm long

### Ex Stock Delivery !

If you need to measure temperature, you'll find our vast range of products Ex Stock for immediate overnight delivery!

### Type K - Inconel 600® Sheath (1100°C)

Code No Description

405-769	3.0mm dia x 100mm long
405-770	3.0mm dia x 150mm long
405-771	3.0mm dia x 200mm long
405-772	3.0mm dia x 250mm long
405-773	3.0mm dia x 300mm long
405-774	3.0mm dia x 400mm long
405-776	3.0mm dia x 500mm long
405-777	3.0mm dia x 750mm long
405-779	3.0mm dia x 1000mm long
405-780	3.0mm dia x 1500mm long
405-782	3.0mm dia x 2000mm long
405-783	3.0mm dia x 3000mm long
405-784	6.0mm dia x 100mm long
405-785	6.0mm dia x 150mm long
405-786	6.0mm dia x 200mm long
405-787	6.0mm dia x 250mm long
405-788	6.0mm dia x 300mm long
405-789	6.0mm dia x 400mm long
405-791	6.0mm dia x 500mm long
405-792	6.0mm dia x 750mm long
405-794	6.0mm dia x 1000mm long
405-795	6.0mm dia x 1500mm long
405-797	6.0mm dia x 2000mm long
405-798	6.0mm dia x 3000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No Description

405-810	3.0mm dia x 150mm long
405-813	3.0mm dia x 300mm long
405-816	3.0mm dia x 500mm long
405-819	3.0mm dia x 1000mm long
405-822	3.0mm dia x 2000mm long
405-825	6.0mm dia x 150mm long
405-828	6.0mm dia x 300mm long
405-831	6.0mm dia x 500mm long
405-834	6.0mm dia x 1000mm long
405-837	6.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No Description

405-850	3.0mm dia x 150mm long
405-853	3.0mm dia x 300mm long
405-856	3.0mm dia x 500mm long
405-859	3.0mm dia x 1000mm long
405-862	3.0mm dia x 2000mm long
405-865	6.0mm dia x 150mm long
405-868	6.0mm dia x 300mm long
405-871	6.0mm dia x 500mm long
405-874	6.0mm dia x 1000mm long
405-877	6.0mm dia x 2000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No Description

405-890	3.0mm dia x 150mm long
405-893	3.0mm dia x 300mm long
405-896	3.0mm dia x 500mm long
405-899	3.0mm dia x 1000mm long
405-902	3.0mm dia x 2000mm long
405-905	6.0mm dia x 150mm long
405-908	6.0mm dia x 300mm long
405-911	6.0mm dia x 500mm long
405-914	6.0mm dia x 1000mm long
405-917	6.0mm dia x 2000mm long

For advice, call one of our experienced engineers on:

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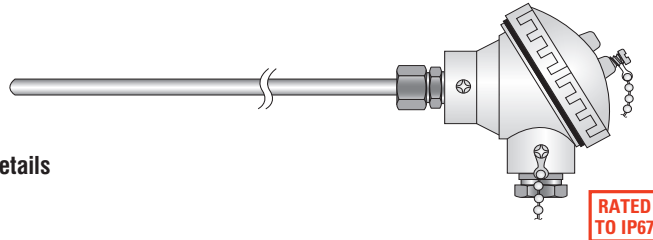
# Custom Built Thermocouples

## Mineral Insulated Thermocouple with IP67 Miniature Weatherproof Head

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you.

Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 3.0mm to 8mm
- Wide choice of sheath materials
- Die Cast Alloy Head with ceramic terminal block
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner





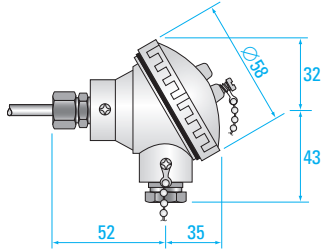
SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C

SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
<b>Standard Sizes</b>	3.0mm	0.118"
	4.5mm	0.177"
	5.5mm*	0.216"
	6.0mm	0.236"
	8.0mm	0.315"

\* 5.5mm sheath is thick wall for heavy duty use

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Termination
<b>3P10</b>	

SECTION 6	Optional Stainless Steel Adjustable Compression Fittings		
Dia.	1/8" BSPT	1/4" BSPT	1/2" BSPT
3.0mm	ACF05S	ACF59S	ACF58S
4.5mm	ACF55S	ACF10S	ACF11S
5.5mm	—	ACF13S	ACF14S
6.0mm	ACF15S	ACF16S	ACF17S
8.0mm	—	ACF27S	ACF56S

For our full range of fittings, please See page 88

### Order Code - Example

Type N°	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Diameter (See section 3)	Sensing Junction (See section 4)	Termination (See section 5)	Compression Fitting (Optional, see section 6)
<b>12</b>	<b>- K</b>	<b>- 750</b>	<b>- 125</b>	<b>- 3.0</b>	<b>- 2I</b>	<b>- 3P10</b>	<b>- ACF59S</b>

**Fax: 01895 857777**

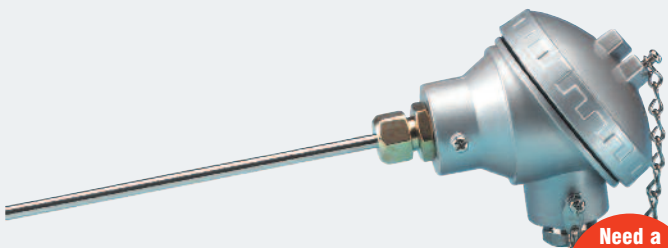
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



Call us on 01895 855555 to discuss your requirements

# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with IP67 Standard Weatherproof Head



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A standard weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A complete range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, J or N available in a variety of lengths - 6mm dia
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel and Type N which has a Microbell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Description

405-930	6.0mm dia x 150mm long
405-933	6.0mm dia x 300mm long
405-936	6.0mm dia x 500mm long
405-939	6.0mm dia x 1000mm long
405-942	6.0mm dia x 2000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No Description

405-960	6.0mm dia x 150mm long
405-963	6.0mm dia x 300mm long
405-966	6.0mm dia x 500mm long
405-969	6.0mm dia x 1000mm long
405-972	6.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No Description

405-987	6.0mm dia x 150mm long
405-990	6.0mm dia x 300mm long
405-993	6.0mm dia x 500mm long
405-996	6.0mm dia x 1000mm long
405-999	6.0mm dia x 2000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No Description

406-002	6.0mm dia x 150mm long
406-005	6.0mm dia x 300mm long
406-008	6.0mm dia x 500mm long
406-011	6.0mm dia x 1000mm long
406-014	6.0mm dia x 2000mm long

### Type N - Microbell D Sheath (1250°C)

Code No Description

406-022	6.0mm dia x 150mm long
406-024	6.0mm dia x 300mm long
406-027	6.0mm dia x 500mm long
406-030	6.0mm dia x 1000mm long
406-033	6.0mm dia x 2000mm long

## Thermocouple with Standard Head and 4-20mA Transmitter



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments.

A 4-20 mA transmitter is incorporated into the standard head so that you may extend the sensor with standard copper instrument cable into your loop system. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A range of instrument cable and adjustable compression fittings can be found in this catalogue to complement this product.

- Thermocouple types K, T, or J available
- Sheath Material: Type K (0 to 300°C), T & J - 321 Stainless Steel Type K (0 to 1200°C) - 310 Stainless Steel
- The operating range of these sensors is shown in the order code boxes
- Terminated in an IP67 standard weatherproof head rated to 135°C with head mounted 4-20 mA transmitter

### Type K - Ranged 0 to 300°C

Code No Description

406-041	6.0mm dia x 150mm long
406-044	6.0mm dia x 300mm long
406-047	6.0mm dia x 500mm long
406-050	6.0mm dia x 1000mm long

### Type K - Ranged 0 to 1200°C (sensor rated to 1100°C)

Code No Description

406-077	6.0mm dia x 150mm long
406-080	6.0mm dia x 300mm long
406-083	6.0mm dia x 500mm long
406-086	6.0mm dia x 1000mm long

### Type T - Ranged 0 to 400°C

Code No Description

406-102	6.0mm dia x 150mm long
406-105	6.0mm dia x 300mm long
406-108	6.0mm dia x 500mm long
406-111	6.0mm dia x 1000mm long

### Type J - Ranged 0 to 600°C

Code No Description

406-121	6.0mm dia x 150mm long
406-124	6.0mm dia x 300mm long
406-127	6.0mm dia x 500mm long
406-130	6.0mm dia x 1000mm long

Please visit [www.tcdirect.co.uk](http://www.tcdirect.co.uk) for a larger selection of Ex Stock sheath lengths

For advice, call one of our experienced engineers on:

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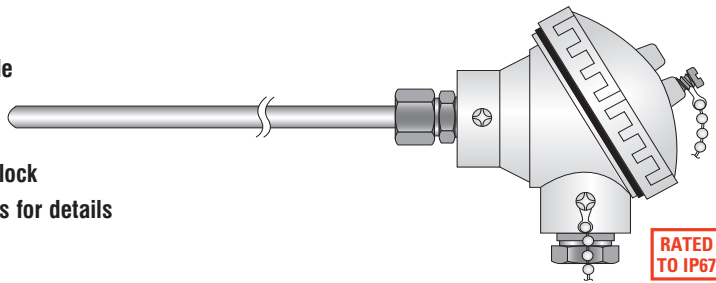
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# Custom Built Thermocouples

## Mineral Insulated Thermocouple with IP67 Standard Weatherproof Head

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Thermocouple types K, T, J, N and E available
- Sheath diameters from 4.5mm to 10.8mm
- Wide choice of sheath materials
- Die Cast Alloy Head with ceramic terminal block
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner

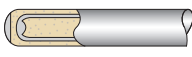
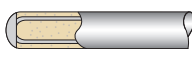


SECTION 1	Thermocouple Type	Temperature Range (continuous)
<b>K</b>	Nickel Chromium vs Nickel Aluminium	0°C to +1100°C
<b>T</b>	Copper vs Constantan	-185°C to +400°C
<b>J</b>	Iron vs Constantan	+50°C to +800°C
<b>N</b>	Nicrosil vs Nisil	0°C to +1200°C
<b>E</b>	Nickel Chromium vs Constantan	0°C to +800°C

SECTION 2	Sheath Material	Maximum Temperature
<b>118</b>	321 Stainless Steel (Types K, J, T & E)	800°C
<b>125</b>	310 Stainless Steel (Type K)	1100°C
<b>176</b>	Inconel 600 (Types K & N)	1100°C
<b>114</b>	Nicrobell D (Types K & N)	1250°C
<b>156</b>	Hastelloy X (Type K)	1220°C


SECTION 3	Sheath Diameter (mm)	Sheath Diameter (inches)
	4.5mm	0.177"
	5.5mm*	0.216"
	6.0mm	0.236"
	8.0mm	0.315"
	10.8mm*	0.425"

\* 5.5mm and 10.8mm sheaths are thick wall for heavy duty use

SECTION 4	Types of Sensing Junction	
<b>2I</b>		INSULATED (2ID for a Duplex element)
<b>2G</b>		GROUNDED (2GD for a Duplex element)

SECTION 5	Optional Stainless Steel Adjustable Compression Fittings	
Dia.	1/4" BSPT	1/2" BSPT
4.5mm	ACF10S	ACF11S
5.5mm	ACF13S	ACF14S
6.0mm	ACF16S	ACF17S
8.0mm	ACF27S	ACF56S
10.8mm	—	ACF41S

For our full range of fittings, please See page 88

SECTION 6	Optional 4 to 20mA Head Mounted Transmitter (please specify range in °C)
<b>TXLTC</b>	 Fully Linearised

### Order Code - Example

Type No	Thermocouple Type (See section 1)	Sheath Length in mm	Sheath Material (See section 2)	Sheath Dia. (See section 3)	Sensing Junc. (See section 4)	Termination (Standard 3P11 Head)	Compression Fitting (Optional, see section 5)	Transmitter (Optional, see section 6)
<b>12</b>	<b>- K</b>	<b>- 750</b>	<b>- 118</b>	<b>- 6.0</b>	<b>- 2I</b>	<b>- 3P11</b>	<b>- ACF16S</b>	<b>- TXLTC(0/100°C)</b>

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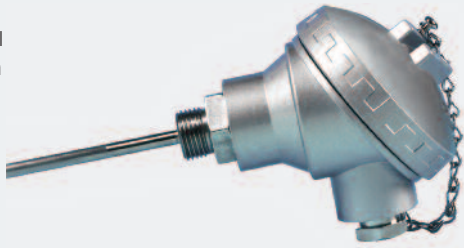


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# Ex Stock Thermocouples

## Mineral Insulated Thermocouple with Standard Head & Process Connection

These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be



formed to shape to suit particular applications without impairing performance. A standard weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A 1/2" BSP parallel process connection thread is fitted directly below the terminal head for easy mounting of the sensor in to the process.

- Thermocouple types K, T, J or N available in a variety of lengths - 6mm dia
- Sheath Material: Type K - 310 Stainless Steel or Inconel 600®, Type T or J - 321 Stainless Steel and Type N which has a Nicrobell D® sheath
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- 1/2" BSP Parallel process connection thread (length taken from under hex of process thread)
- Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No	Description
407-350	6.0mm dia x 150mm long
407-355	6.0mm dia x 300mm long
407-365	6.0mm dia x 500mm long
407-370	6.0mm dia x 1000mm long

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
407-375	6.0mm dia x 150mm long
407-380	6.0mm dia x 300mm long
407-385	6.0mm dia x 500mm long
407-390	6.0mm dia x 1000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
407-395	6.0mm dia x 150mm long
407-400	6.0mm dia x 300mm long
407-405	6.0mm dia x 500mm long
407-415	6.0mm dia x 1000mm long

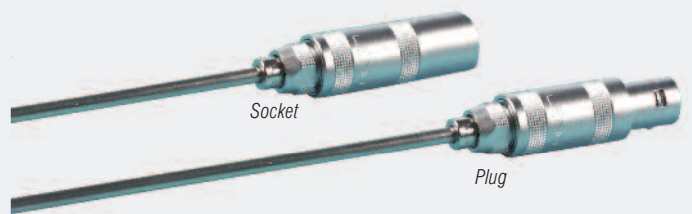
### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
407-420	6.0mm dia x 150mm long
407-425	6.0mm dia x 300mm long
407-430	6.0mm dia x 500mm long
407-435	6.0mm dia x 1000mm long

### Type N - Nicrobell D® Sheath (1250°C)

Code No	Description
407-440	6.0mm dia x 150mm long
407-445	6.0mm dia x 300mm long
407-450	6.0mm dia x 500mm long
407-455	6.0mm dia x 1000mm long

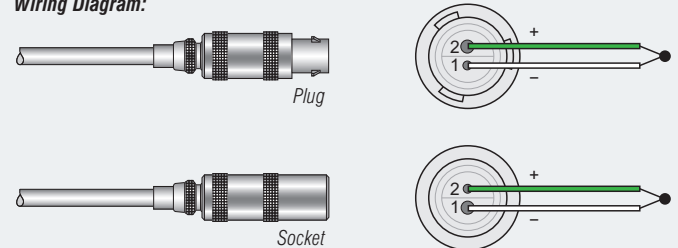
## Mineral Insulated Thermocouple with Size 1 Lemo Connector



These semi rigid thermocouples are ideal for all applications from simple temperature measurement to more arduous environments. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A Size 1 Lemo plug or socket is incorporated and is compatible with the mating Lemo connectors available in this catalogue. A range of extension cables and adjustable compression fittings can also be found in this catalogue to complement this product.

- Thermocouple types K or T
- Variety of lengths and diameters available
- Sheath Material: Type K - 310 Stainless Steel, Type T - 321 Stainless Steel

### Wiring Diagram:



Other wiring configurations are available on request - please contact us with your requirements

### Type K - 310 Stainless Steel Sheath (1100°C)

Code No Plug	Code No Socket	Description
407-500	407-501	1.5mm dia x 150mm long
407-505	407-506	1.5mm dia x 300mm long
407-510	407-511	1.5mm dia x 500mm long
407-515	407-516	1.5mm dia x 1000mm long
407-520	407-521	1.5mm dia x 2000mm long
407-525	407-526	3.0mm dia x 150mm long
407-530	407-531	3.0mm dia x 300mm long
407-535	407-536	3.0mm dia x 500mm long
407-540	407-541	3.0mm dia x 1000mm long
407-545	407-546	3.0mm dia x 2000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No Plug	Code No Socket	Description
407-550	407-551	1.5mm dia x 150mm long
407-555	407-556	1.5mm dia x 300mm long
407-560	407-561	1.5mm dia x 500mm long
407-565	407-566	1.5mm dia x 1000mm long
407-570	407-571	1.5mm dia x 2000mm long
407-575	407-576	3.0mm dia x 150mm long
407-580	407-581	3.0mm dia x 300mm long
407-585	407-586	3.0mm dia x 500mm long
407-590	407-591	3.0mm dia x 1000mm long
407-600	407-601	3.0mm dia x 2000mm long

### Mating Lemo Connector

Code No	Description
407-700	Mating Lemo Socket
407-701	Mating Lemo Plug

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# Ex Stock Thermocouples

## Platinum / Rhodium Sheathed Thermocouple with Miniature Plug



This new range of Type R, S and B thermocouples are ideal for use in high temperature environments where standard sheath materials are unsuitable due to inaccuracies caused by contamination of the core conductors. They have insulated junctions to prevent earth loops and a mineral insulated construction enables these sensors to be formed to shape to suit particular applications without impairing performance. Termination is in a miniature flat pin plug which is compatible with the miniature thermocouple sockets available in this catalogue. A range of extension cables and adjustable compression fittings can also be found in this catalogue to complement this product.

- **Thermocouple types R, S and B available**
- **Sheath Material: Platinum 10% Rhodium**
- **Maximum temperature: 1400°C**
- **Insulated Junction**
- **Terminated in a miniature thermocouple plug rated to 135°C**

### Type R with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-800	1.5mm dia x 150mm long
407-805	1.5mm dia x 300mm long
407-810	1.5mm dia x 500mm long
407-815	1.5mm dia x 1000mm long
407-820	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

### Type S with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-825	1.5mm dia x 150mm long
407-830	1.5mm dia x 300mm long
407-835	1.5mm dia x 500mm long
407-840	1.5mm dia x 1000mm long
407-845	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

### Type B with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-850	1.5mm dia x 150mm long
407-855	1.5mm dia x 300mm long
407-860	1.5mm dia x 500mm long
407-865	1.5mm dia x 1000mm long
407-870	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

## Platinum / Rhodium Sheathed Thermocouple with 1mtr Cable



This new range of Type R, S and B thermocouples are ideal for use in high temperature environments where standard sheath materials are unsuitable due to inaccuracies caused by contamination of the core conductors. They have insulated junctions to prevent earth loops and a mineral insulated construction enables these sensors to be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 1 metre PVC insulated leads is supplied as standard. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **Thermocouple types R, S and B available**
- **Sheath Material: Platinum 10% Rhodium**
- **Maximum temperature: 1400°C**
- **Insulated Junction**
- **Leads: 1 metre PVC insulated**
- **Terminated in a pot seal 6.35mm diameter x 31mm long rated to 105°C**

### Type R with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-900	1.5mm dia x 150mm long
407-905	1.5mm dia x 300mm long
407-910	1.5mm dia x 500mm long
407-915	1.5mm dia x 1000mm long
407-920	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

### Type S with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-925	1.5mm dia x 150mm long
407-930	1.5mm dia x 300mm long
407-935	1.5mm dia x 500mm long
407-940	1.5mm dia x 1000mm long
407-945	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

### Type B with Platinum 10% Rhodium Sheath (1400°C)

Code No Description

407-950	1.5mm dia x 150mm long
407-955	1.5mm dia x 300mm long
407-960	1.5mm dia x 500mm long
407-965	1.5mm dia x 1000mm long
407-970	1.5mm dia x 2000mm long

Please note: Due to the fluctuating market price of platinum, the prices may vary from time to time. Please contact us for an up to date position.

### Can't see what you want ?

Don't hesitate to call us. TC Direct is the distribution division of the TC group of companies. We are able to custom build the widest range of temperature sensors in Europe. We can quote to your specifications or drawings. Most custom built products can be made for you in days!

### Quality

Every product has been meticulously tested throughout, and you can be confident of all our in house procedures from manufacturing and stocking right through to order processing and despatch, as we are registered to Quality Standard ISO 9001.

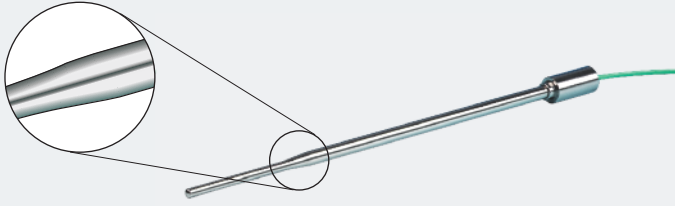
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# Ex Stock Swaged Thermocouples

## Swaged Mineral Insulated Thermocouple with Pot Seal



A unique fast response, high strength, low cost solution to many problematical temperature measurement applications. Rugged large diameter with a low thermal mass reduced tip provides for incredibly fast response. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 1 metre PVC insulated leads is supplied as standard. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product. Do remember to select compression fittings for the larger diameter on the sensor.

- Thermocouple types K, T, J or N available
- Variety of lengths and diameters available
- Sheath Material: Type K - Inconel 600®, Type T or J - 321 Stainless Steel Sheath and Type N which has a Microbell D® sheath
- The swaged tip part of the sensor is approximately 50mm long. This dimension is nominal due to the nature of swaging.
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Leads: 1 metre PVC insulated
- Terminated in a pot seal 12.7mm diameter x 29mm long rated to 105°C

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
406-191	3.0>2.0mm dia x 300mm long
406-194	3.0>2.0mm dia x 500mm long
406-197	3.0>2.0mm dia x 1000mm long
406-203	6.0>4.0mm dia x 300mm long
406-206	6.0>4.0mm dia x 500mm long
406-209	6.0>4.0mm dia x 1000mm long
406-215	8.0>6.0mm dia x 300mm long
406-218	8.0>6.0mm dia x 500mm long
406-221	8.0>6.0mm dia x 1000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
406-243	6.0>4.0mm dia x 300mm long
406-246	6.0>4.0mm dia x 500mm long
406-249	6.0>4.0mm dia x 1000mm long

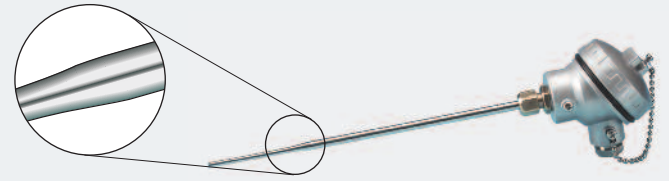
### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
406-273	6.0>4.0mm dia x 300mm long
406-276	6.0>4.0mm dia x 500mm long
406-279	6.0>4.0mm dia x 1000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No	Description
406-303	6.0>4.0mm dia x 300mm long
406-306	6.0>4.0mm dia x 500mm long
406-309	6.0>4.0mm dia x 1000mm long

## Swaged Mineral Insulated Thermocouple with IP67 Miniature Weatherproof Head



A unique fast response, high strength, low cost solution to many problematical temperature measurement applications. Rugged large diameter with a low thermal mass reduced tip provides for incredibly fast response. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A small weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product. Do remember to select compression fittings for the larger diameter on the sensor.

- Thermocouple types K, T, J or N available
- Variety of lengths and diameters available
- Sheath Material: Type K - Inconel 600, Type T or J - 321 Stainless Steel Sheath and Type N which has a Microbell D® sheath
- The swaged tip part of the sensor is approximately 50mm long. This dimension is nominal due to the nature of swaging.
- The operating range of these sensors is shown in the order code boxes
- Insulated Junction
- Terminated in an IP67 weatherproof die cast alloy head rated to 135°C

### Type K - Inconel 600® Sheath (1100°C)

Code No	Description
406-361	4.5>3.0mm dia x 300mm long
406-364	4.5>3.0mm dia x 500mm long
406-367	4.5>3.0mm dia x 1000mm long
406-373	6.0>4.0mm dia x 300mm long
406-376	6.0>4.0mm dia x 500mm long
406-379	6.0>4.0mm dia x 1000mm long

### Type T - 321 Stainless Steel Sheath (400°C)

Code No	Description
406-403	6.0>4.0mm dia x 300mm long
406-406	6.0>4.0mm dia x 500mm long
406-409	6.0>4.0mm dia x 1000mm long

### Type J - 321 Stainless Steel Sheath (800°C)

Code No	Description
406-433	6.0>4.0mm dia x 300mm long
406-436	6.0>4.0mm dia x 500mm long
406-439	6.0>4.0mm dia x 1000mm long

### Type N - Microbell D® Sheath (1250°C)

Code No	Description
406-457	6.0>4.0mm dia x 300mm long
406-460	6.0>4.0mm dia x 500mm long
406-463	6.0>4.0mm dia x 1000mm long

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# Ex Stock Miniature Thermocouples

## Miniature 0.25, 0.5 and 0.75mm dia Mineral Insulated Thermocouple with Pot Seal

These miniature semi rigid thermocouples are ideal for many demanding precision temperature measurement applications due to the response, size, displacement and robustness of the assembly. Applications are varied from laboratory work to situations where the temperature changes are rapid and require a sensor to cope with this sudden change. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A pot seal which allows the transition to 2 metre PFA insulated leads is supplied as standard. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.



- **Rapid response, minimum size and least displacement**
- **Thermocouple types K, T or J available (Only type K for 0.25mm and 0.75mm)**
- **Sheath diameter: 0.25mm, 0.5mm or 0.75mm**
- **Variety of lengths available**
- **Sheath Material: 321 Stainless Steel (0.75mm - Inconel 600®)**
- **Operating range: -100°C to 800°C**
- **Insulated Junction**
- **Leads: 2 metres PFA insulated**
- **Terminated in a pot seal rated to 85°C**

### Type K

Code No	Description
406-473	0.25mm dia x 150mm long
406-475	0.25mm dia x 250mm long
406-477	0.25mm dia x 500mm long
406-479	0.25mm dia x 1000mm long
406-480	0.5mm dia x 150mm long
406-482	0.5mm dia x 250mm long
406-484	0.5mm dia x 500mm long
406-486	0.5mm dia x 1000mm long
406-620	0.75mm dia x 150mm long
406-622	0.75mm dia x 250mm long
406-624	0.75mm dia x 500mm long
406-626	0.75mm dia x 1000mm long

### Type T

Code No	Description
406-491	0.5mm dia x 150mm long
406-494	0.5mm dia x 250mm long
406-497	0.5mm dia x 500mm long
406-500	0.5mm dia x 1000mm long

### Type J

Code No	Description
406-511	0.5mm dia x 150mm long
406-514	0.5mm dia x 250mm long
406-517	0.5mm dia x 500mm long
406-520	0.5mm dia x 1000mm long

## Miniature 0.25, 0.5 and 0.75mm dia Mineral Insulated Thermocouple with Miniature Flat Pin Plug

These miniature semi rigid thermocouples are ideal for many demanding precision temperature measurement applications due to the response, size, displacement and robustness of the assembly. Applications are varied from laboratory work to situations where the temperature changes are rapid and require a sensor to cope with this sudden change. They have insulated junctions to prevent earth loops and can be formed to shape to suit particular applications without impairing performance. A miniature flat pin plug is incorporated and is compatible with the miniature thermocouple sockets available in this catalogue. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.



- **Rapid response, minimum size and least displacement**
- **Thermocouple types K, T or J available**
- **Sheath diameter: 0.25mm, 0.5mm or 0.75mm (Type K only)**
- **Variety of lengths available**
- **Sheath Material: 321 Stainless Steel (0.75mm - Inconel 600®)**
- **Operating range: -100°C to 800°C**
- **Insulated Junction**
- **Terminated in a miniature plug rated to 135°C**

### Type K

Code No	Description
406-590	0.25mm dia x 150mm long
406-592	0.25mm dia x 300mm long
406-594	0.25mm dia x 500mm long
406-596	0.25mm dia x 1000mm long
406-532	0.5mm dia x 150mm long
406-534	0.5mm dia x 300mm long
406-536	0.5mm dia x 500mm long
406-540	0.5mm dia x 1000mm long
406-650	0.75mm dia x 150mm long
406-652	0.75mm dia x 300mm long
406-654	0.75mm dia x 500mm long
406-656	0.75mm dia x 1000mm long

Note: 0.25mm sensors should be handled with care as breakage may occur if not adequately supported

### Type T

Code No	Description
406-551	0.5mm dia x 150mm long
406-554	0.5mm dia x 300mm long
406-557	0.5mm dia x 500mm long
406-560	0.5mm dia x 1000mm long

### Type J

Code No	Description
406-571	0.5mm dia x 150mm long
406-574	0.5mm dia x 300mm long
406-577	0.5mm dia x 500mm long
406-580	0.5mm dia x 1000mm long

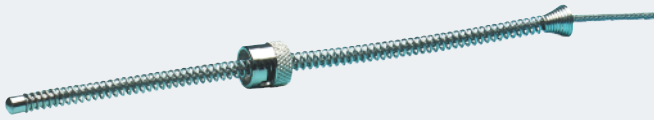
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# Ex Stock General Thermocouples

## Budget Bayonet Thermocouple



Suitable for plastics machinery and general purpose applications, these assemblies are supplied with a 200mm spring which an industry standard one slot adjustable bayonet cap fitting is screwed onto for fine positioning on site. The sensing tip is incorporated within a 18mm long x 4.7, 6.0 or 8.0mm diameter tube which the stainless steel braided leads are sealed into.

- Thermocouple types K or J available, grounded junction
- Sheath and lead rated -50°C to +400°C
- Sheath: 316 stainless steel 4.7, 6.0 or 8.0mm dia x 18mm long
- Leads: 2 metres fibreglass insulated with stainless steel overbraid

### Budget Bayonet Thermocouple

Code No Description

401-160	Bayonet Thermocouple Type K - 4.7mm
401-161	Bayonet Thermocouple Type K - 6.0mm
401-162	Bayonet Thermocouple Type K - 8.0mm
401-163	Bayonet Thermocouple Type J - 4.7mm
401-164	Bayonet Thermocouple Type J - 6.0mm
401-165	Bayonet Thermocouple Type J - 8.0mm
401-169	1/8" BSPP adaptor for 4.7 & 6.0mm sensors
401-172	1/4" BSPP adaptor for 4.7 & 6.0mm sensors
401-175	1/4" BSPP adaptor for 8.0mm sensors

Note: All bayonet adaptors are 22mm long

## Leaf Thermocouple

This sensor has a fast response thermocouple mounted on a stainless steel shim which allows it to be welded, soldered or placed under banding on a variety of applications including nozzle or band heaters. It is supplied with 2 metre leads with either plain tails or miniature plug termination.



- Thermocouple types K, T, J or N, grounded junction
- Stainless steel leaf dimensions: 13mm x 25mm
- Leads: 2 metres fibreglass or alternatively stainless steel braided fibreglass
- Operating range -30°C to +350°C

### Leaf Thermocouple with Leads

Code No Description

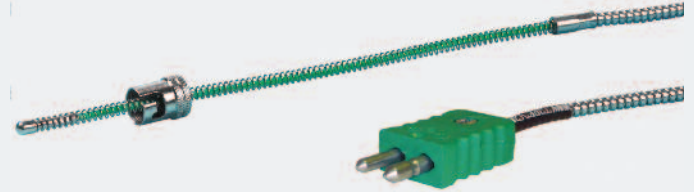
401-340	Type K - Fibreglass Leads
401-343	Type K - Stainless Steel/Fibreglass Leads
401-346	Type T - Fibreglass Leads
401-349	Type T - Stainless Steel/Fibreglass Leads
401-352	Type J - Fibreglass Leads
401-355	Type J - Stainless Steel/Fibreglass Leads
401-358	Type N - Fibreglass Leads
401-361	Type N - Stainless Steel/Fibreglass Leads

### Leaf Thermocouple with Leads and Miniature Plug

Code No Description

401-370	Type K - Fibreglass Leads
401-373	Type K - Stainless Steel/Fibreglass Leads
401-376	Type T - Fibreglass Leads
401-379	Type T - Stainless Steel/Fibreglass Leads
401-382	Type J - Fibreglass Leads
401-385	Type J - Stainless Steel/Fibreglass Leads
401-388	Type N - Fibreglass Leads
401-391	Type N - Stainless Steel/Fibreglass Leads

## Heavy Duty Bayonet Thermocouple



Suitable for plastics machinery and general purpose applications, these assemblies have a total length of 2 mtrs. The flexible stainless steel armoured cable provides increased mechanical protection in arduous environments. These assemblies are supplied with a 200mm spring which an industry standard one slot adjustable bayonet cap fitting is screwed onto. The fitting can be fine tuned for positioning on site. The sensing tip is incorporated within a 18mm long x 4.7mm diameter tube which the cable and armour are sealed to. The sensor is terminated in a standard round pin plug.

- Thermocouple types K or J available, grounded junction
- Sheath and lead rated -50°C to +250°C
- Sheath: 316 stainless steel 4.7mm dia x 18mm long
- Leads: 1.8mtrs Stainless Steel Armoured over PFA insulated cable terminated in a standard round pin plug. Spring length 200mm

### Bayonet Thermocouple with Stainless Steel Armour

Code No Description

401-157	Bayonet Type K with armour - 4.7mm
401-159	Bayonet Type J with armour - 4.7mm
401-169	1/8 inch BSPP adaptor x 22mm long

## Bayonet Thermocouple with an Adjustable Cap Fitting



Suitable for plastics machinery and general purpose applications these assemblies are supplied in several different lengths with an industry standard one slot adjustable bayonet cap fitting. The fitting can be fine tuned for positioning on site and is suitable where several of your applications require individual positioning of the thermocouple. The sensor is 4.5mm dia mineral insulated and can therefore be bent after installation for further exact positioning.

- Thermocouple types K or J available
- Mineral Insulated rated -50°C to +800°C
- Insulated Junction
- Sheath: 321 stainless steel 4.5mm dia x 100, 150 or 200mm long
- Leads: 2 metres fibreglass insulated with stainless steel overbraid

### Bayonet Thermocouple with an Adjustable Cap Fitting

Code No Description

401-180	Bayonet Type K 100mm long
401-183	Bayonet Type K 150mm long
401-186	Bayonet Type K 200mm long
401-189	Bayonet Type J 100mm long
401-192	Bayonet Type J 150mm long
401-195	Bayonet Type J 200mm long
401-198	Spare adjustable bayonet cap fitting
401-169	1/8 inch BSPP adaptor x 22mm long

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# Ex Stock General Thermocouples

## Plastic Melt Thermocouple

These robust sensors have been designed to withstand the high pressures that are found within the nozzles of plastics extruders and injection moulding machines where they are used in order to measure the temperature of the molten medium. Available as standard in either 76mm or 152mm bolt lengths with either a 5mm long or flush sensing tip length, they have an insulated junction and are terminated in a standard round pin thermocouple plug.



- Thermocouple types K and J available
- 76mm or 152mm bolt lengths available
- Bolt thread: 1/2 inch UNF 20, material: 316 stainless steel
- Sensing tip diameter: 3mm
- Sensing tip length: Either 5mm or 0mm (flush)
- Bolt termination: Standard round pin thermocouple connector
- Insulated sensing junction
- Operating temperature: 0°C to 600°C at tip

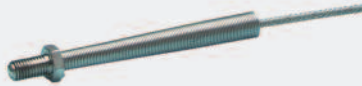
### Plastic Melt Thermocouple

Code No Description

401-400	Type K - 76mm bolt length - 5mm tip
401-403	Type K - 76mm bolt length - Flush tip
401-406	Type K - 152mm bolt length - 5mm tip
401-409	Type K - 152mm bolt length - Flush tip
401-412	Type J - 76mm bolt length - 5mm tip
401-415	Type J - 76mm bolt length - Flush tip
401-418	Type J - 152mm bolt length - 5mm tip
401-421	Type J - 152mm bolt length - Flush tip

## Nozzle Thermocouple

Ideal for a variety of uses including extruder nozzles, motor and pipe temperatures. They are designed to screw directly into the workpiece. A nipple allows the nozzle to rotate, so the wires do not twist when threading in and tightening the nozzle. They are available in several bolt sizes and are made from stainless steel. Suitable up to 480°C.



- Thermocouple types K, T, J or N
- S/S Bolts: Either M6 x 1mm, 1/4" BSF or 1/4" UNF (12mm long below hexagon)
- Grounded Junction
- Leads: 2 metres fibreglass insulated with stainless steel overbraid
- Operating range -30°C to +480°C

### Nozzle Thermocouple

Code No Description

401-434	Type K M6 x 12mm long
401-436	Type K 1/4" BSF x 12mm long
401-438	Type K 1/4" UNF x 12mm long
401-440	Type T M6 x 12mm long
401-442	Type T 1/4" BSF x 12mm long
401-444	Type T 1/4" UNF x 12mm long
401-446	Type J M6 x 12mm long
401-448	Type J 1/4" BSF x 12mm long
401-450	Type J 1/4" UNF x 12mm long
401-452	Type N M6 x 12mm long
401-454	Type N 1/4" BSF x 12mm long
401-456	Type N 1/4" UNF x 12mm long

## Standard Bearing Thermocouple

These bearing sensors are designed for use in bearing shoes and will give reliable indication as to the bearing condition. This may provide an early warning of oil film breakdown and allow the machine to shutdown and avoid unnecessary damage.



- Thermocouple types K, T or J available
- Insulated sensing junction
- Tip dimensions: 3.2mm dia x 8.0mm long or 6.0mm dia x 8mm long
- Operating range: -25°C to 250°C
- Extension leads: 2 metres of 7/0.15mm dia PFA insulated cores, stainless steel braided

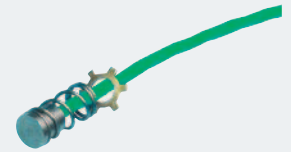
### Bearing Thermocouple

Code No Description

401-500	Type K - 3.2mm dia
401-506	Type K - 6.0mm dia
401-512	Type T - 3.2mm dia
401-518	Type T - 6.0mm dia
401-524	Type J - 3.2mm dia
401-530	Type J - 6.0mm dia

## Spring Bearing Thermocouple 'Top Hat Style'

These bearing sensors are also designed for use in bearing shoes. The top hat shape allows spring loading by use of a spring and retaining ring clip. The sensor tip is inserted into the milled hole, then the retaining ring clip is pushed down to compress the spring and retain the sensor. Using these sensors will give reliable indication as to the bearing condition. This may provide an early warning of oil film breakdown and allow the machine to shutdown and avoid unnecessary damage.



- Thermocouple types K, T or J available in Simplex or Duplex constructions
- Insulated sensing junction
- Supplied complete with spring and retaining ring clip
- Tip dimensions: 6.0mm dia (including spring) x 6.0mm long
- Maximum diameter of retaining ring clip: 8mm
- Suited for a blind hole approx 7.92mm dia (5/16" dia)
- Compressed length of spring: 6mm approx
- Operating range: -25°C to 250°C
- Extension leads: 2 metres of 7/0.2mm dia PFA insulated cores, PFA overall

### Spring Bearing Thermocouple

Code No Description

401-552	Type K - 6.0mm dia - Simplex
401-558	Type T - 6.0mm dia - Simplex
401-564	Type J - 6.0mm dia - Simplex
401-582	Type K - 6.0mm dia - Duplex
401-588	Type T - 6.0mm dia - Duplex
401-594	Type J - 6.0mm dia - Duplex
401-606	Spare Springs
401-612	Spare Retaining Clips

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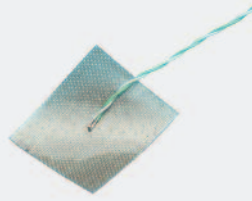
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# Ex Stock Self Adhesive Thermocouples

## Self Adhesive Patch Thermocouple

Suitable for attaching to flat or curved surfaces, these Self Adhesive Patch Thermocouples are rated for operation between -50°C and +250°C. They are made from PFA insulated thermocouple cable which is attached to a high temperature rated patch of PTFE impregnated adhesive fibreglass tape.



- Thermocouple types K, T, J or N available
- Patch size is 25mm x 20mm
- 0.2mm dia solid PFA insulated twisted pair leads
- Grounded junction
- Lead length: 2 metres
- Operating range: -50°C to +250°C

### Self Adhesive Patch Thermocouple without Miniature Plug

Code No Description

401-140	Type K
401-142	Type T
401-144	Type J
401-146	Type N

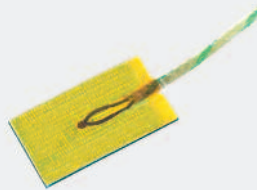
### Self Adhesive Patch Thermocouple with Miniature Plug

Code No Description

401-148	Type K
401-150	Type T
401-152	Type J
401-154	Type N

## Cement On Polyimide Thin Film Thermocouple - Standard Grade

These versatile, low cost thermocouples can be used for a wide variety of surface temperature measurements including environmental testing, temperature surveys of electrical components, oven wall temperatures, etc. The foil sensor incorporates a thermocouple sensor which is rolled flat before being embedded between two paper thin glass reinforced high temperature polyimide laminates.



These both support and electrically insulate the thermocouple as well as providing a flat surface for cementing or resining the sensor to. They feature rugged 0.2mm dia fibreglass leads 2 metres long and are available in thermocouple types K, T, J and N. They are designed for easy installation either by using the adhesive weld compound which we offer or alternatively by using an epoxy resin. Users must ensure the resin they use satisfies the operating temperature they intend working within.

- Thermocouple types K, T, J and N available
- Patch size is 20mm x 12mm x 0.13mm thick
- Leads: 2 metres, 0.2mm dia solid Fibreglass insulated laid flat pair leads
- Insulated Junction
- Operating range: -30°C to +220°C (but up to 300°C short term)

### Cement On Thin Film Thermocouple - Standard Grade

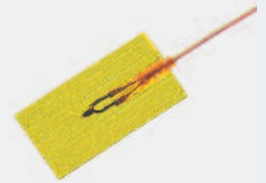
Code No Description

402-700	Type K
402-702	Type T
402-704	Type J
402-706	Type N
402-750	Adhesive Weld Compound*

\* Note: This resin contains Iron, therefore it may not be suitable for all applications

## Cement On Polyimide Thin Film Thermocouple - Aerostructure Grade

These versatile cement on foil thermocouples give exceptional performance for exceptional applications. Although used widely in the aerospace industry for dynamic testing of composite structures, they can be used on any application where a lightweight, miniature, durable, flexible and rugged sensor is required. This unique 0.13mm thick sensor in the form of a 12mm x 20mm film, provides millisecond responses and high dielectric strengths combined with very low thermal mass and physical profile. The foil sensor incorporates a class 1 tolerance thermocouple sensor which is rolled flat before being embedded between two paper thin glass reinforced high temperature polymer laminates which are then high kiln fired in order for them to meet your most arduous requirements. The polyimide laminate both supports and electrically insulates the thermocouple as well as providing a flat surface for cementing or resining the foil sensor to. They feature rugged 0.25mm dia Kapton leads 2 metres long and are available in thermocouple types K, T, J and N. They are designed for easy installation either by using the adhesive weld compound which we offer or alternatively by using an epoxy resin. Users must ensure the resin they use satisfies the operating temperature they intend working within. They have an operating temperature range of -250°C up to 300°C with short term use up to 370°C. These aerostructure grade sensors can also be built to your specific requirements.



- Thermocouple types K, T or J available to IEC 60584-1 Class 1 : 2013
- Manufactured to aerostructure grade specifications
- Patch size is 20mm x 12mm x 0.13mm thick
- Leads: 2 metres, 0.25mm dia solid Kapton insulated laid flat pair leads
- Insulated Junction
- Operating range: -250°C to 300°C (but up to 370°C short term)

### Cement On Thin Film Thermocouple - Aero Grade

Code No Description

402-716	Type K
402-718	Type T
402-720	Type J
402-722	Type N
402-750	Adhesive Weld Compound*

\* Note: This resin contains Iron, therefore it may not be suitable for all applications

## Silicone Rubber Patch Thermocouple

This sensor incorporates a silicon rubber patch with a thermocouple junction embedded within, attached to 2 metre long PFA leads. The patch is self adhesive and when placed in position enables good response times from the flush mounted thermocouple junction.



- Thermocouple types K, T, J and N available
- Rubber Patch dimensions: 30mm x 14 mm x 3.4 mm maximum depth
- Sensor housing: Silicon rubber with self adhesive backing
- Operating range: -50°C to +150°C
- Leads: 2 metres PFA insulated

### Silicone Rubber Patch Thermocouple

Code No Description

402-805	Type K
402-808	Type T
402-811	Type J
402-814	Type N

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# Ex Stock Self Adhesive and Magnet Thermocouples

## Rapid Response Polyimide Self Adhesive Thin Film Thermocouple



These thin film polyimide self-adhesive type K thermocouples are ideal for applications where either a very fast response is required or you need to place the sensor between two touching surfaces, where the sensor needs to be wafer thin. These sensors are just 0.13mm thick at the sensing part with a temperature range of  $-40$  to  $+250^{\circ}\text{C}$ . They can be applied to and detached from various different surfaces and are supplied in packs of 5. There are two versions available; a standard width of 6.7mm x 107mm long and a narrow version which is 2.3mm wide 67mm long, then 6.7mm wide by 40mm long, as shown in the image above. Both versions have a 7mm long adhesive section at the sensing tip. The separate silicone rubber cable with integral connector should be purchased along with the thermocouples, which allows the fine terminations of the sensor to be easily attached to the cable.

- **Response time (t95): 0.08 seconds**
- **Wafer thin design**
- **Best suited for applications for inserting between two touching surfaces or where an ultra-fast response is required**
- **Dimensions:**  
**Standard Version: 6.7mm wide x 0.13mm thick x 107mm long**  
**Narrow Version: 2.3mm wide 67mm long, then 6.7mm wide by 40mm long**
- **Supplied in packs of 5**
- **A connecting cable is supplied separately and is fitted with an integral socket for connecting to the fine terminations on the sensor body**

### Rapid Response Polyimide Self Adhesive Flat Film Thermocouple

Code No Description

402-760	Pack of 5 Type K Standard Version
402-765	Pack of 5 Type K Narrow Version
402-790	1mtr Cable with Integral Connector*
724-102	Type K Miniature Plug

\*At least one unit should be purchased for the above sensors

## High Temp Magnet Thermocouple

This versatile magnetic thermocouple is suitable for high temperature measurements on ferrous surfaces up to a maximum of  $300^{\circ}\text{C}$ .

The sensor is supplied with 2mtrs of stainless steel braided fibreglass insulated cable.

- **Thermocouple types K, T, J or N**
- **Grounded Junction**
- **Surface temperature measurement of ferrous materials**
- **Leads: 2 metres fibreglass insulated with stainless steel overbraid**
- **Operating range:  $-10^{\circ}\text{C}$  to  $+300^{\circ}\text{C}$**
- **Magnet Dimensions: 29mm dia. x 8.5mm thick**



### High Temp Magnet Thermocouple

Code No Description

410-050	Type K
410-055	Type J
410-060	Type T
410-065	Type N

## Spring Loaded High Temp Magnet Thermocouple

These spring loaded high temperature magnet thermocouples are versatile and robust. They provide excellent surface temperature measurement between the range of  $-10^{\circ}\text{C}$  to  $+480^{\circ}\text{C}$  for types K, J and N ( $400^{\circ}\text{C}$  max. for type T). Supplied with 2 or 5 metres of stainless steel braided fibreglass insulated cable, these sensors are perfect for applications where very close contact to the surface is critical whilst maintaining the durability to withstand high temperatures. There is also an anti-chafe spring which relieves strain on the cable when removing the magnet from surfaces, although it is not recommended to pull on the cable to remove the sensor after use.



- **Surface temperature measurement of ferrous materials**
- **Spring loaded grounded junction to ensure maximum contact with surface**
- **Thermocouple types K, T, J or N**
- **Operating range:  $-10$  to  $+480^{\circ}\text{C}$  for types K, J & N ( $400^{\circ}\text{C}$  max. for type T)**
- **2 or 5 metres fibreglass insulated lead with Stainless Steel overbraid**
- **Anti-chafe spring to add strain relief to the cable**
- **25.4mm diameter x 15.9mm thick magnet**

### Spring Loaded High Temp Magnet Thermocouple

Code No Description

410-105	Type K – 2 metres cable
410-110	Type K – 5 metres cable
410-115	Type J – 2 metres cable
410-120	Type J – 5 metres cable
410-125	Type T* – 2 metres cable
410-130	Type T* – 5 metres cable
410-135	Type N – 2 metres cable
410-140	Type N – 5 metres cable

\* Type T is rated to  $400^{\circ}\text{C}$  in accordance with IEC 60584.1

## Heavy Duty Magnet Thermocouple

An extremely powerful magnet makes this thermocouple sensor ideal for heavy duty applications where the surface temperature of ferrous materials needs to be measured. The sensor has a magnet strength of 6Kg and is supplied with 2mtrs of PVC insulated leads.



- **Thermocouple types K, T, J or N**
- **Insulated Junction**
- **Surface temperature measurement of ferrous materials**
- **Leads: 2 metres PVC insulated leads**
- **Operating range:  $-10^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$**
- **Magnet strength: 6Kg**
- **Magnet Dimensions: 25mm dia. x 13.5mm thick**

### Heavy Duty Magnet Thermocouple

Code No Description

410-005	Type K
410-010	Type J
410-015	Type T
410-025	Type N

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# Ex Stock Surface Thermocouples

## Adjustable Ring Thermocouple

For pipe temperature measurement up to 400°C. They are available in a number of sizes to suit your diameter of pipe. These sensors make direct contact with the pipe for maximum performance and have grounded junctions



- Thermocouple types K, T or J available
- Versions for pipes 13-20mm, 20-30mm, 32-40mm, 32-50mm, 40-50mm, 50-150mm or 150-300mm offered
- Grounded junction
- Leads: 2 metres fibreglass insulated with stainless steel overbraid
- Operating range: -100°C to 400°C

### Adjustable Ring Thermocouple

Code No Description

401-458	Ring Thermocouple Type K 13-20mm
401-459	Ring Thermocouple Type K 20-30mm
401-460	Ring Thermocouple Type K 32-40mm
401-461	Ring Thermocouple Type K 32-50mm
401-462	Ring Thermocouple Type K 40-50mm
401-464	Ring Thermocouple Type K 50-150mm
401-467	Ring Thermocouple Type K 150-300mm
401-468	Ring Thermocouple Type T 13-20mm
401-469	Ring Thermocouple Type T 20-30mm
401-470	Ring Thermocouple Type T 32-50mm
401-471	Ring Thermocouple Type T 32-40mm
401-472	Ring Thermocouple Type T 40-50mm
401-473	Ring Thermocouple Type T 50-150mm
401-476	Ring Thermocouple Type T 150-300mm
401-477	Ring Thermocouple Type J 13-20mm
401-478	Ring Thermocouple Type J 20-30mm
401-479	Ring Thermocouple Type J 32-50mm
401-480	Ring Thermocouple Type J 32-40mm
401-481	Ring Thermocouple Type J 40-50mm
401-482	Ring Thermocouple Type J 50-150mm
401-485	Ring Thermocouple Type J 150-300mm

## Velcro® Thermocouple

These velcro® thermocouples are simply wrapped around a pipe, providing a quick and easy method of measuring the surface temperature of pipes up to 150°C. They make direct contact with the pipe for maximum performance and are terminated in a miniature plug.



- Thermocouple types K, T or J available
- For pipes 10-150mm diameter
- Grounded junction
- Leads: 1 metre PFA insulated
- Operating range: -100°C to +150°C

### Velcro® Thermocouple

Code No Description

401-700	Velcro® Thermocouple Type K
401-703	Velcro® Thermocouple Type J
401-706	Velcro® Thermocouple Type T

## Crocodile Clip Thermocouple

This crocodile clip sensor allows quick and easy temperature measurements of a variety of surfaces. They make direct contact for fast response.



- Thermocouple types K, T or J available
- Clamps on objects up to 6mm thick (or diameter)
- Leads: 1 metre fibreglass insulated with stainless steel overbraid
- Operating range: -50°C to +300°C

### Crocodile Clip Thermocouple

Code No Description

401-710	Type K Crocodile Clip Thermocouple
401-713	Type J Crocodile Clip Thermocouple
401-716	Type T Crocodile Clip Thermocouple

## Spring Clamp Thermocouple

This spring clamp sensor allows quick and easy temperature measurements of a variety of pipes and surfaces. They make direct contact for fast response.



- Thermocouple type K
- Clamps on objects from 3mm to 45mm diameter (or thick)
- Grounded Junction
- Leads: 1 metre PVC insulated coiled lead with miniature plug
- Operating range: -50°C to +400°C (Note: the yellow clamp body is rated to 100°C whilst the jaws will withstand up to 400°C)

### Spring Clamp Thermocouple

Code No Description

401-720	Type K Spring Clamp Thermocouple
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## Washer Thermocouple

These thermocouples are suitable for surface monitoring of many applications including platens, pipes and vessels up to a maximum operating temperature of 400°C.



- Thermocouple types K, T, J or N available
- Grounded Junction
- Washer sizes M8, M6 (0BA) or M3.5 (4BA) available
- Leads: 2 metres fibreglass insulated with stainless steel overbraid
- Operating range: -10°C to +400°C

### Washer Thermocouple

Code No Description

401-250	Washer Thermocouple Type K - M8
401-253	Washer Thermocouple Type K - M6
401-256	Washer Thermocouple Type K - M3.5
401-259	Washer Thermocouple Type T - M8
401-262	Washer Thermocouple Type T - M6
401-265	Washer Thermocouple Type T - M3.5
401-268	Washer Thermocouple Type J - M8
401-271	Washer Thermocouple Type J - M6
401-274	Washer Thermocouple Type J - M3.5
401-277	Washer Thermocouple Type N - M8
401-280	Washer Thermocouple Type N - M6
401-283	Washer Thermocouple Type N - M3.5

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# Ex Stock Thermocouples

## Bolt Thermocouple

Ideal for surface and vessel temperature sensing. These bolt thermocouples are designed to screw directly into the workpiece. They are available in several bolt sizes and are made from stainless steel. Suitable up to 250°C.



- Thermocouple types K, T or J
- S/S Bolts: Either M8 x 1.25mm, M10 x 1.5mm or M12 x 1.75mm (25mm long below hexagon). Other bolt sizes are available, please contact us for details
- Grounded Junction
- Leads: 2 metres fibreglass insulated with stainless steel overbraid
- Operating range -30°C to +250°C

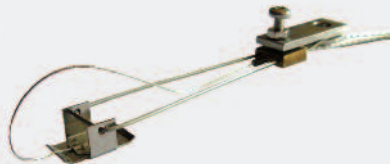
### Bolt Thermocouple

Code No Description

401-730	Type K - M8 x 25mm x 1.25mm Pitch
401-733	Type K - M10 x 25mm x 1.5mm Pitch
401-736	Type K - M12 x 25mm x 1.75mm Pitch
401-740	Type T - M8 x 25mm x 1.25mm Pitch
401-743	Type T - M10 x 25mm x 1.5mm Pitch
401-746	Type T - M12 x 25mm x 1.75mm Pitch
401-750	Type J - M8 x 25mm x 1.25mm Pitch
401-753	Type J - M10 x 25mm x 1.5mm Pitch
401-756	Type J - M12 x 25mm x 1.75mm Pitch
401-760	Type N - M8 x 25mm x 1.25mm Pitch
401-763	Type N - M10 x 25mm x 1.5mm Pitch
401-766	Type N - M12 x 25mm x 1.75mm Pitch

## Brake Disc Rubbing Thermocouple

This fast response thermocouple is designed to monitor brake disc temperatures up to 850°C. Spring pressure is easily adjusted via a screw and locknut and the sensor is easily mounted into position. A robust version is available for use in rugged environments (with the sensor wrapped around the frame). Terminated in a miniature thermocouple plug.



- Thermocouple type K (types T & J also available)
- High speed response up to 850°C
- For monitoring of brake disc temperatures
- Easily mounted and adjusted
- Standard or Robust versions available
- 300mm cable length

### Brake Disc Rubbing Thermocouple

Code No Description

401-130	Type K - Standard Version (illustrated)
401-134	Type K - Robust Version
724-104	Matching Miniature Socket

## Embedded Brake Pad Thermocouple

These sensors are designed for embedding in to a brake pad to monitor fluctuations in the brake pad temperature up to a maximum of 600°C. Available in a choice of diameters and supplied with 1 mtr stainless steel braided cable.



- Designed for monitoring brake pad temperatures up to 250°C or 600°C
- Thermocouple Type K (Types J and T also available)
- Insulated measuring junction (250°C version) or grounded (600°C version)
- 3.2, 4.0 and 6.0mm diameter tip x 4.0mm long
- 1mtr fibreglass insulated with stainless steel overbraid

### Embedded Brake Pad Thermocouple - 250°C rated (Insulated)

Code No Description

401-630	Type K - 3.2mm dia x 4mm long
401-634	Type K - 4.0mm dia x 4mm long
401-638	Type K - 6.0mm dia x 4mm long

### Embedded Brake Pad Thermocouple - 600°C rated (Grounded)

Code No Description

401-640	Type K - 3.2mm dia x 4mm long
401-644	Type K - 4.0mm dia x 4mm long
401-648	Type K - 6.0mm dia x 4mm long

## Moving Surface Thermocouple

For temperatures up to 250°C and rotating and linear speeds up to 275 metres per minute, these Moving Surface Thermocouples are suitable for use on calendar rolls, motor shafts and flat sheets of metal, plastic and textile surfaces with low abrasion resistance. These thermocouples incorporate a spring loaded detection head. They are supplied complete with a built in thermocouple socket, matching plug and mounting bar. Thermocouple leads should be ordered separately. Spare replacement cartridges are also available for all thermocouple types.



- Thermocouple types K, J, T or N available
- Operating temperature -30°C to +250°C
- Maximum Speed 275 metres per minute

### Moving Surface Thermocouple

Code No Description

401-101	Moving Surface Thermocouple Type K
401-104	Moving Surface Thermocouple Type T
401-107	Moving Surface Thermocouple Type J
401-110	Moving Surface Thermocouple Type N
401-118	Spare Replacement Cartridge Type K
401-121	Spare Replacement Cartridge Type T
401-124	Spare Replacement Cartridge Type J
401-127	Spare Replacement Cartridge Type N

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# Ex Stock Thermocouples

## Autoclave Load Thermocouple

The harsh conditions found in the autoclave chambers of sterilisers requires a reliable sensor as all too often sensors can fail through ingress of moisture. Our Autoclave Load probe offers a reliable solution to the problem. Supplied as a simplex or duplex sensor, it incorporates one or two thermocouples respectively. A Pt100 version is also available in this catalogue.



- Thermocouple type T, Simplex or Duplex
- Sensor tip: 6mm OD x 250mm long Stainless Steel
- Conduit: 1500mm long Stainless Steel
- Bulkhead feed through tube: 6mm OD x 150mm long stainless steel
- Flying leads: 3000mm long PFA insulated with silicone rubber sheath
- Operating range: -50°C to +200°C

### Autoclave Load Thermocouple

Code No Description

402-115	Type T Simplex Autoclave Load Probe
402-110	Type T Duplex Autoclave Load Probe

## Autoclave Drain Thermocouple

Whilst the conditions endured by autoclave drain sensors are not as harsh as in the main chamber, a reliable simplex or duplex sensor should still be used.



Our model incorporates similar manufacturing techniques to the autoclave load sensor in order to produce a dependable sensor. A Pt100 version is also available in this catalogue.

- Thermocouple type T, Simplex or Duplex
- Sensor tip: 6mm OD x 100mm long Stainless Steel
- Flying leads: 3000mm long PFA insulated with silicone rubber sheath
- Operating range: -50°C to +200°C

### Autoclave Drain Thermocouple

Code No Description

402-122	Type T Simplex Autoclave Drain Probe
402-120	Type T Duplex Autoclave Drain Probe

## Payment

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## Miniature Autoclave Thermocouple

A miniature thermocouple sensor specifically designed for general purpose use in autoclaves and other similarly demanding applications.



- Thermocouple type T
- Sensor tip: 3mm OD x 30mm long Stainless Steel
- Tolerance to IEC 60584-1 Class 1 : 2013
- Flying leads: 3000mm long PTFE insulated
- Operating range: -100°C to +200°C

### Miniature Autoclave Thermocouple

Code No Description

402-125	Type T Miniature Autoclave Probe
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## FEP Insulated Thermocouple

These flexible FEP insulated sensors are ideally suited to applications which require resistance to attack from virtually all known chemicals, oils and fluids. Available in Type K or T thermocouple combinations, 4mm in diameter, in a variety of lengths which can be cut down to an exact length by the user if necessary. The sensing junction is encapsulated in the tip and the whole sensor is rated to 250°C. Adjustable PTFE compression fittings for an exact insertion length in your process are also available in either 1/4 inch or 1/2 inch BSPT.



- Thermocouple types K and T available
- Sheath: FEP insulated 4mm OD in a variety of lengths
- Operating range: -75°C to +250°C
- Insulated junction

### Type K FEP Thermocouple

Code No Description

407-170	4mm O.D. x 1 metre long
407-176	4mm O.D. x 2 metres long
407-182	4mm O.D. x 5 metres long
876-200	1/4" BSPT PTFE fitting to suit 4mm sensor
876-210	1/2" BSPT PTFE fitting to suit 4mm sensor

### Type T FEP Thermocouple

Code No Description

407-250	4mm O.D. x 1 metre long
407-256	4mm O.D. x 2 metres long
407-262	4mm O.D. x 5 metres long
876-200	1/4" BSPT PTFE fitting to suit 4mm sensor
876-210	1/2" BSPT PTFE fitting to suit 4mm sensor

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# Ex Stock Thermocouples

## Welded Tip PFA Thermocouple

Simple PFA insulated thermocouple for very fast response using 0.2mm dia conductors. Available with or without a miniature thermocouple plug attached in 2 or 5 metre lengths. Good for low temperature applications.



- Thermocouple types K, T, J or N
- 0.2mm dia solid PFA insulated twisted pair leads
- Lead length: 2 metres or 5 metres
- Operating range: -75°C to +250°C

### PFA Thermocouple without Miniature Plug

Code No Description

401-301	Type K - 2 metres
401-302	Type K - 5 metres
401-304	Type T - 2 metres
401-305	Type T - 5 metres
401-307	Type J - 2 metres
401-308	Type J - 5 metres
401-310	Type N - 2 metres
401-311	Type N - 5 metres

### PFA Thermocouple with Miniature Plug

Code No Description

401-321	Type K - 2 metres
401-322	Type K - 5 metres
401-324	Type T - 2 metres
401-325	Type T - 5 metres
401-327	Type J - 2 metres
401-328	Type J - 5 metres
401-330	Type N - 2 metres
401-331	Type N - 5 metres

## Welded Tip 'Gas and Water Tight' PTFE Thermocouple

A very fast response PTFE insulated thermocouple, made from a unique single shot cable construction which provides a gas, steam and water tight insulation along the cable. This sensor is ideally suited to temperature monitoring of test pieces in autoclave and aerospace applications. Available with or without a miniature thermocouple plug attached in 2 or 5 metre lengths.



- Thermocouple types K, T, J
- 0.376mm dia solid PTFE insulated single shot construction
- Lead length: 2 metres or 5 metres
- Operating range: -75°C to +250°C

### Welded Tip 'Gas and Water Tight' PTFE Thermocouple without Miniature Plug

Code No Description

410-205	Type K - 2 metres
410-210	Type K - 5 metres
410-215	Type T - 2 metres
410-220	Type T - 5 metres
410-225	Type J - 2 metres
410-230	Type J - 5 metres

### Welded Tip 'Gas and Water Tight' PTFE Thermocouple with Miniature Plug

Code No Description

410-245	Type K - 2 metres
410-250	Type K - 5 metres
410-255	Type T - 2 metres
410-260	Type T - 5 metres
410-265	Type J - 2 metres
410-270	Type J - 5 metres

## Welded Tip Fibreglass Thermocouple

Simple fibreglass insulated thermocouple for fast response using 0.3mm dia conductors. Available with or without a miniature connector attached in 2 or 5 metre lengths. Good for temperatures up to +400°C



- Thermocouple types K, T, J or N
- 0.3mm dia solid fibreglass insulated and laid flat leads
- Lead length: 2 metres or 5 metres
- Operating range: -10°C to +400°C

### Fibreglass Thermocouple without Miniature Plug

Code No Description

401-900	Type K - 2 metres
401-903	Type K - 5 metres
401-906	Type T - 2 metres
401-909	Type T - 5 metres
401-912	Type J - 2 metres
401-915	Type J - 5 metres
401-918	Type N - 2 metres
401-921	Type N - 5 metres

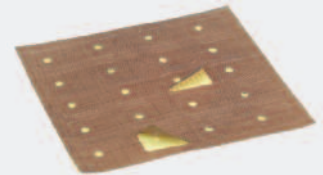
### Fibreglass Thermocouple with Miniature Plug

Code No Description

401-941	Type K - 2 metres
401-944	Type K - 5 metres
401-947	Type T - 2 metres
401-950	Type T - 5 metres
401-953	Type J - 2 metres
401-956	Type J - 5 metres
401-959	Type N - 2 metres
401-962	Type N - 5 metres

## Thermal Attachment Pads

These pads are most suitable for use with our simple PFA welded tip thermocouples. They can be used in a variety of surface mount applications such as pipes, oven doors or on processed products.



- Temperature range: -50°C to 250°C
- Supplied as a pack of 100 (5 sheets of 20)
- Pad size: 10 x 15mm nominal

### Thermal Attachment Pads

Code No Description

412-538	Pack of 100 Thermal attachment pads
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# Ex Stock Ceramic Thermocouples

## Industrial Vacuum Furnace Thermocouple



These thermocouple sensors are used in industrial vacuum furnaces up to at least  $1 \times 10^{-6}$  mbar where temperatures up to  $1600^{\circ}\text{C}$  are experienced, although some users have been satisfied with their performance at  $5 \times 10^{-6}$  mbar. Available in thermocouple types K and N with an impervious aluminous porcelain sheath or thermocouple types R and S with an impervious recrystallised alumina sheath, they have a stainless steel support tube attached to a weatherproof connection head. The sensor can then be inserted into the application with a vacuum tight sealing assembly (ref 940-161) which can be purchased separately. Please see the sealing assembly section in this catalogue for more detailed specifications of the sealing assemblies. Whilst we offer a standard range of vacuum furnace thermocouples, due to the specialist nature of these sensors a full custom built service is available for both end users and OEM's.

- **Thermocouple types K, N, R or S available**
- **Suitable to at least a vacuum of  $1 \times 10^{-6}$  mbar although use at up to  $5 \times 10^{-6}$  mbar is possible when used with sealing assembly ref 940-161 (see above)**
- **Ceramic sheath material:**  
Type K and N, Impervious aluminous porcelain rated to  $1350^{\circ}\text{C}$   
Type R and S, Impervious recrystallised alumina rated to  $1600^{\circ}\text{C}$
- **Ceramic sheath diameter 8mm**
- **Support tube**  
12.7mm OD x 200mm long for 600mm and 1000mm total lengths  
12.7mm OD x 300mm long for 1200mm total lengths  
NB. These lengths are included in the total length
- **Terminated in an IP67 weatherproof die cast alloy head rated to  $135^{\circ}\text{C}$**
- **Suitable for use with a 3/4" sealing assembly 940-161 which is fitted onto the support tube**

### Industrial Vacuum Furnace Thermocouple - Simplex

Code No Description

409-702	Type K - 600mm long
409-705	Type K - 1000mm long
409-708	Type K - 1200mm long
409-711	Type N - 600mm long
409-714	Type N - 1000mm long
409-717	Type N - 1200mm long
409-720	Type R - 600mm long
409-723	Type R - 1000mm long
409-726	Type R - 1200mm long
409-729	Type S - 600mm long
409-732	Type S - 1000mm long
409-735	Type S - 1200mm long
940-161	3/4in NPT sealing assembly

Please note: Due to the fluctuating market price of platinum, the above Type R & S prices may vary from time to time. Please contact us for an up to date position.

### Quality

Every product has been meticulously tested throughout, and you can be confident of all our in house procedures from manufacturing and stocking right through to order processing and despatch, as we are registered to Quality Standard ISO 9001.

### Industrial Vacuum Furnace Thermocouple - Duplex

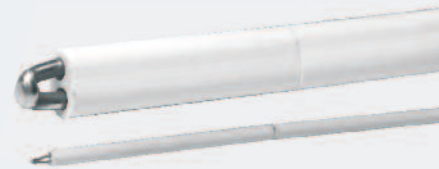
Code No Description

409-750	Type K - 600mm long
409-753	Type K - 1000mm long
409-756	Type K - 1200mm long
409-759	Type N - 600mm long
409-762	Type N - 1000mm long
409-765	Type N - 1200mm long
409-768	Type R - 600mm long
409-771	Type R - 1000mm long
409-774	Type R - 1200mm long
409-777	Type S - 600mm long
409-780	Type S - 1000mm long
409-783	Type S - 1200mm long
940-161	3/4in NPT sealing assembly

Please note: Due to the fluctuating market price of platinum, the above Type R & S prices may vary from time to time. Please contact us for an up to date position.

## Twin Bore Ceramic Thermocouple

These sensors are suitable for general use at high temperatures. Offered in Aluminous Porcelain for Type K and J thermocouples or Recrystallised Alumina for type R and S thermocouples.



They can be cut down with insulators taken off when an exact length is required.

- **Thermocouple types K J R or S**
- **Ceramic sheath material:**  
Types K and J, Aluminous Porcelain rated to  $1350^{\circ}\text{C}$  (K) and  $750^{\circ}\text{C}$  (J)  
Types R and S, Recrystallised Alumina rated to  $1700^{\circ}\text{C}$   
Twin bore round insulators are used except in the case of 3.25mm dia conductor models where oval insulators are used
- **Variety of lengths and conductor diameters available**

### Type K

Code No Description

409-007	0.5mm dia x 300mm long
409-010	0.5mm dia x 500mm long
409-013	1.29mm dia x 300mm long
409-016	1.29mm dia x 500mm long
409-019	1.29mm dia x 1000mm long
409-022	1.63mm dia x 300mm long
409-025	1.63mm dia x 500mm long
409-028	1.63mm dia x 1000mm long
409-031	3.25mm dia x 300mm long
409-034	3.25mm dia x 500mm long
409-037	3.25mm dia x 1000mm long

### Type J

Code No Description

409-057	0.5mm dia x 300mm long
409-060	0.5mm dia x 500mm long
409-063	1.29mm dia x 300mm long
409-066	1.29mm dia x 500mm long
409-069	1.29mm dia x 1000mm long
409-072	1.63mm dia x 300mm long
409-075	1.63mm dia x 500mm long
409-078	1.63mm dia x 1000mm long
409-081	3.25mm dia x 300mm long
409-084	3.25mm dia x 500mm long
409-087	3.25mm dia x 1000mm long

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# Ex Stock Industrial Thermocouples

## Type R

Code No Description

409-101	0.2mm dia x 300mm long
409-104	0.2mm dia x 500mm long
409-107	0.45mm dia x 300mm long
409-110	0.45mm dia x 500mm long
409-113	0.45mm dia x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

## Type S

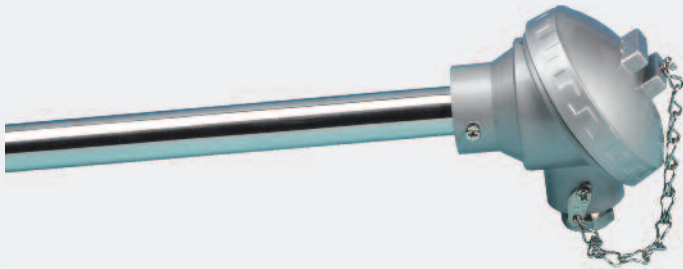
Code No Description

409-131	0.2mm dia x 300mm long
409-134	0.2mm dia x 500mm long
409-137	0.45mm dia x 300mm long
409-140	0.45mm dia x 500mm long
409-143	0.45mm dia x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

If your application needs a different length or diameter, call us, as we can make to your specific requirements !

## Heavy Duty Industrial Thermocouple



These sensors are available with thick wall protective sheaths in 316 or 310 Stainless Steel, Inconel 600® or Incoloy 800®. Typical temperature measurement applications include: furnaces (blast, carburising etc.), kilns, ovens, boilers, flues, cyanide/galvanising baths and general heat treatment applications. They are available in a variety of diameters and lengths.

- Thermocouple types K J R or S
- Sheath material: 316 Stainless Steel, 310 Stainless Steel, Inconel 600® or Incoloy 800® depending on thermocouple type selected
- The maximum operating temperature of these sensors is shown in the order code boxes below
- Sheath diameters: 12.7mm (1/2 in), 15.9mm (5/8 in) or 21.3mm (13/16in)
- Terminated in an IP67 weatherproof die cast alloy head rated to 135°C (not included in length)
- 100mm dia Cast Iron flanges as well as compression fittings are also available

## Type K - 316 Stainless Steel Sheath (800°C)

Code No Description

409-201	12.7mm dia x 300mm long
409-204	12.7mm dia x 500mm long
409-207	12.7mm dia x 1000mm long
409-210	15.9mm dia x 300mm long
409-213	15.9mm dia x 500mm long
409-216	15.9mm dia x 1000mm long
409-219	21.3mm dia x 300mm long
409-222	21.3mm dia x 500mm long
409-225	21.3mm dia x 1000mm long

If your application needs a different length or diameter, call us, as we can make to your specific requirements !

## Type K - Inconel 600® (1100°C)

Code No Description

409-241	12.7mm dia x 300mm long
409-244	12.7mm dia x 500mm long
409-247	12.7mm dia x 1000mm long
409-250	15.9mm dia x 300mm long
409-253	15.9mm dia x 500mm long
409-256	15.9mm dia x 1000mm long
409-259	21.3mm dia x 300mm long
409-262	21.3mm dia x 500mm long
409-265	21.3mm dia x 1000mm long

## Type K - Incoloy 800® (1100°C)

Code No Description

409-298	21.3mm dia x 300mm long
409-301	21.3mm dia x 500mm long
409-304	21.3mm dia x 1000mm long

## Type J - 316 Stainless Steel (750°C)

Code No Description

409-330	12.7mm dia x 300mm long
409-333	12.7mm dia x 500mm long
409-336	12.7mm dia x 1000mm long
409-339	15.9mm dia x 300mm long
409-342	15.9mm dia x 500mm long
409-345	15.9mm dia x 1000mm long
409-348	21.3mm dia x 300mm long
409-351	21.3mm dia x 500mm long
409-354	21.3mm dia x 1000mm long

## Type R - 310 Stainless Steel (1000°C)

Code No Description

409-382	12.7mm dia x 300mm long
409-385	12.7mm dia x 500mm long
409-388	12.7mm dia x 1000mm long
409-400	21.3mm dia x 300mm long
409-403	21.3mm dia x 500mm long
409-406	21.3mm dia x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

## Type S - 310 Stainless Steel (1000°C)

Code No Description

409-432	12.7mm dia x 300mm long
409-435	12.7mm dia x 500mm long
409-438	12.7mm dia x 1000mm long
409-450	21.3mm dia x 300mm long
409-453	21.3mm dia x 500mm long
409-456	21.3mm dia x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

## Fittings

Code No Description

409-481	1/2" BSPT St/St comp fitting for 12.7mm
409-487	1/2" BSPT St/St comp fitting for 15.9mm
409-493	3/4" BSPT St/St comp fitting for 21.3mm
409-501	100mm dia Cast Iron Flange for 12.7mm
409-502	100mm dia Cast Iron Flange for 15.9mm
409-503	100mm dia Cast Iron Flange for 21.3mm

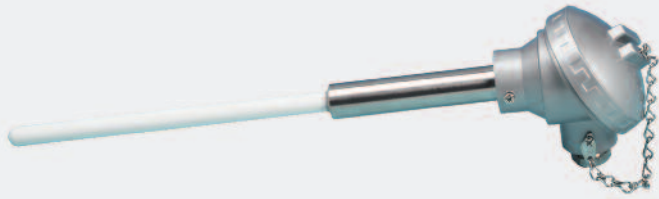
**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Ceramic Thermocouples & Calibration

## Industrial Ceramic Thermocouple



These thermocouples are used for temperature measurement to 1600°C plus in kilns, furnaces and flues etc. Available in thermocouple types K and J with an impervious aluminous porcelain sheath or type R and S with an impervious recrystallised alumina sheath, they have a 100mm long stainless steel support tube attached to a weatherproof connection head. The thermocouples shown below are normally ex stock although other dimensions are available on request and can be made up within a few days.

- **Thermocouple types K J R or S**
- **Ceramic sheath material:**  
Types K and J, Aluminous Porcelain rated to 1350°C (K) and 750°C (J)  
Types R and S, Recrystallised Alumina rated to 1600°C (R & S)
- **Ceramic sheath diameters: 12mm or 20mm**
- **Support tube 21mm OD x 100mm (for 12mm dia ceramic tubes) or 26.7mm OD x 100mm (for 20mm dia ceramic tubes) These lengths are included in total sheath length**
- **Terminated in an IP67 weatherproof die cast alloy head rated to 135°C**
- **100mm dia Cast Iron flanges are also available**

### Type K

Code No Description

409-550	12mm Øceramic sheath x 300mm long
409-553	12mm Øceramic sheath x 500mm long
409-556	12mm Øceramic sheath x 1000mm long
409-559	20mm Øceramic sheath x 300mm long
409-562	20mm Øceramic sheath x 500mm long
409-565	20mm Øceramic sheath x 1000mm long

### Type J

Code No Description

409-578	12mm Øceramic sheath x 300mm long
409-581	12mm Øceramic sheath x 500mm long
409-584	12mm Øceramic sheath x 1000mm long
409-587	20mm Øceramic sheath x 300mm long
409-590	20mm Øceramic sheath x 500mm long
409-593	20mm Øceramic sheath x 1000mm long

### Type R

Code No Description

409-610	12mm Øceramic sheath x 300mm long
409-613	12mm Øceramic sheath x 500mm long
409-616	12mm Øceramic sheath x 1000mm long
409-619	20mm Øceramic sheath x 300mm long
409-622	20mm Øceramic sheath x 500mm long
409-625	20mm Øceramic sheath x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

### Type S

Code No Description

409-662	12mm Øceramic sheath x 300mm long
409-665	12mm Øceramic sheath x 500mm long
409-668	12mm Øceramic sheath x 1000mm long
409-671	20mm Øceramic sheath x 300mm long
409-674	20mm Øceramic sheath x 500mm long
409-677	20mm Øceramic sheath x 1000mm long

Please note: Due to the fluctuating market price of platinum, the above prices may vary from time to time. Please contact us for an up to date position.

### Fittings

Code No Description

409-503	100mm ØAdjustable Cast Iron Flange for 21.3mm Øsupport tube (12mm Øceramic sheath)
409-504	100mm ØAdjustable Cast Iron Flange for 26.7mm support tube (20mm Øceramic sheath)

## UKAS Calibration Service for Sensors

We offer a full UKAS calibration service from our in house accredited laboratory. With the drive towards higher product quality standards and energy efficiency, end users are demanding more certainty and traceability from the products they purchase.



A speedy, economical and reliable calibration service is provided in all respects. Our application engineers who have all been trained in our laboratory are available if required to give assistance in recommending a calibration strategy suitable for your application. Whilst there are some limitations as to which sensors can be calibrated, we can if necessary custom build sensors in order to meet both the requirements of the application as well as the relevant calibration equipment.

- **In house UKAS service offered**
- **Calibration available from -100°C to 1590°C (-196°C Fixed point calibration is also available - please contact us for details and pricing)**
- **Sensors to be calibrated need in most cases to be at least 490mm in length, however, for some low temperature applications this length can be shorter. Contact us if you require further details**
- **4/5 day delivery is standard or quicker if required**
- **Full calibration certificate available promptly**
- **Calibration available for products purchased from us or any other manufacturer**

### Calibration

Code No Description

998-002	1 sensor at 1 point
998-008	1 sensor at 2 points
998-014	1 sensor at 3 points
998-020	1 sensor at 4 points
998-026	2 sensors at 1 point
998-032	2 sensors at 2 points
998-038	2 sensors at 3 points
998-044	3 sensors at 1 point
998-050	3 sensors at 2 points
998-056	3 sensors at 3 points
998-998	Any other combination

For advice, call one of our experienced engineers on:

01895 855555

TC  
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# Ex Stock Thermowells

## Stainless Steel Thermowell with Integral Compression Fitting



This range of 316 stainless steel welded construction thermowells are for use with our 6mm diameter thermocouple or Pt100 sensors. They are ideal for applications where the removal of the sensor could prove complicated such as on a vessel, pipe or tank. These thermowells are 11mm O.D. and have an integral 1/2 inch BSP tapered (process thread) compression fitting with an olive that compresses on to the sensor sheath. A wide choice of immersion depths (under the thread) is available to suit various lengths of temperature sensor.

- Available in a wide choice of lengths to suit various temperature sensors
- Male Process Thread: 1/2 inch BSPT
- Integral compression fitting to suit 6mm diameter sensor
- Sheath fabricated from 316 Stainless Steel
- Operating range: -75°C to 800°C

### Stainless Steel Thermowell with Integral Compression Fitting

Code No	Description
784-720	50mm below thread (for 100mm sensors)
784-724	100mm below thread (for 150mm sensors)
784-728	150mm below thread (for 200mm sensors)
784-732	200mm below thread (for 250mm sensors)
784-736	250mm below thread (for 300mm sensors)
784-740	300mm below thread (for 350mm sensors)
784-744	450mm below thread (for 500mm sensors)
875-616	Spare St./Steel Olive for 6.0mm
875-360	Spare PTFE Olive for 6.0mm

## Stainless Steel Thermowell



We offer a range of stainless steel thermowells machined from solid bar for use with 6mm diam. temperature sensors. They are ideal for applications where the removal of the sensor could prove complicated such as on a vessel, pipe or tank. They are 12.7mm O.D. and are available with a 1/2 inch BSP taper process entry thread and 1/4 inch BSP parallel sensor entry thread. Use a 1/4 in BSP stainless steel fitting to attach the sensor to the thermowell.

- Male Thread: 1/2 inch BSPT
- Female Thread: 1/4 inch BSPP
- Sheath machined from solid 316 Stainless Steel
- 1/2 in BSP female welding bushes are available separately
- Operating range: -75°C to 800°C

### Stainless Steel Thermowell for use with our Ex Stock 6mm Sensors

Code No	Description
784-398	30mm insertion for 100mm sensors
784-610	80mm insertion for 150mm sensors
784-404	130mm insertion for 200mm sensors
784-409	180mm insertion for 250mm sensors
784-618	230mm insertion for 300mm sensors
784-417	330mm insertion for 400mm sensors
784-626	430mm insertion for 500mm sensors
784-632	930mm insertion for 1000mm sensors*
784-640	1/2" BSP female Welding Bush
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

\*930mm thermowell is a welded construction and not machined from solid

### Stainless Steel Thermowell for use with other 6mm Sensors

Code No	Description
784-400	100mm 'U' Length (sensor length 170mm)
784-408	150mm 'U' Length (sensor length 220mm)
784-410	200mm 'U' Length (sensor length 270mm)
784-412	250mm 'U' Length (sensor length 320mm)
784-416	300mm 'U' Length (sensor length 370mm)
784-418	350mm 'U' Length (sensor length 420mm)
784-420	400mm 'U' Length (sensor length 470mm)
784-422	450mm 'U' Length (sensor length 520mm)
784-424	500mm 'U' Length (sensor length 570mm)
784-640	1/2" BSP female Welding Bush
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

Please note: Sensor lengths shown are minimum lengths

## Heat Transfer Compound

These compounds provide a good solution for applications where increased response time is required from applications where a thermowell is used. When applied to the sensing tip of a sensor prior to inserting into a thermowell, response times dependent upon application are substantially improved. Our Standard compound (0.9W/mK thermal conductivity, 130°C) is available in a 35ml syringe, whilst our Plus compound, which has superior thermal conductivity (2.9W/mK, 200°C) to other compounds is provided in a 50ml tube.

- Ideal for improving response times for thermowells
- Operating range: -50°C to 200°C
- Thermal conductivity: Standard - 0.9W/mK, Plus - 2.9W/mK
- Size: Standard 35ml, Plus 50ml

### Heat Transfer Compound

Code No	Description
784-100	Standard Heat Transfer Compound - 35ml
784-150	Plus Heat Transfer Compound - 50 ml

## PTFE Thermowell



Our range of PTFE thermowells are ideally suited to applications which require resistance to attack from virtually all known chemicals, oils and fluids, for use with 6mm diameter stainless steel sheathed thermocouple or Pt100 sensors. Used in applications where the removal of the sensor could prove complicated such as in a vessel, pipe or tank. They are 12mm O.D. and are available with a 1/2 inch BSP taper process entry thread and 1/4 inch BSP parallel sensor entry thread. Use a 1/4 in BSP PTFE fitting (or stainless steel if clear of the difficult environment) to attach the sensor to the thermowell.

- Available in 80mm, 230mm, 430mm and 930mm insertion lengths
- Sheath material: PTFE
- Male Thread: 1/2 inch BSPT, Female Thread: 1/4 inch BSPP
- Operating range: -75°C to 250°C

### PTFE Thermowell for use with 6mm Sensors

Code No	Description
784-668	80mm insertion for 150mm sensor
784-676	230mm insertion for 300mm sensor
784-684	430mm insertion for 500mm sensor
784-692	930mm insertion for 1000mm sensor
876-300	1/4" BSPT PTFE fitting to suit 6mm sensor
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**





## **Calibration Services**



**We have an in house UKAS Calibration Laboratory which means we can offer a quick turnaround on manufactured sensors that require calibration.**

PRIMARY TRIPLE ZONE FURNACE

EQUIPMENT NUMBER C01

**CALIBRATED**  
BY JCLTD DATE 21/11/14  
DUE 21ST NOV 2016

500°C TO 1600°C

**CALIBRATED**  
BY NPL

**CALIBRATED**  
BY NPL DATE MAY 14  
DUE 9TH MAY 2016

SERIAL NUMBER

C66

# Ex Stock RTD Pt100 and Pt1000 Sensors

## RTD Sensor - Pt100 with Pot Seal



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with a pot seal which allows the attachment of the 2 metre long PFA extension lead. A range of adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 3mm or 6mm OD**
- **Variety of lengths available (not including pot seal or leads)**
- **Operating range: -75°C to +350°C**
- **Terminated in a pot seal 12.7mm OD x 29mm long rated to 135°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with a PFA oversheath. 3 wire - 2 coloured red and 1 coloured white**

### RTD Sensor with Pot Seal

Code No Description

514-183	3mm dia x 100mm long
514-186	3mm dia x 150mm long
514-189	3mm dia x 200mm long
514-190	3mm dia x 250mm long
514-192	3mm dia x 300mm long
514-193	3mm dia x 400mm long
514-195	3mm dia x 500mm long
514-201	6mm dia x 100mm long
514-204	6mm dia x 150mm long
514-207	6mm dia x 200mm long
514-208	6mm dia x 250mm long
514-210	6mm dia x 300mm long
514-211	6mm dia x 400mm long
514-213	6mm dia x 500mm long

## Small Budget RTD Sensor - Pt100

These small rigid sensors have a 6mm diameter stainless steel welded closed end sheath crimp sealed to 2metres of flexible silicone rubber insulated cable. The sensor is designed for general purpose use and will give reliable performance in a wide variety of applications and are suitable for use up to 200°C.



- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 6mm OD x 30mm long**
- **Operating range: -50°C to +200°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with silicone rubber oversheath. 3 wire - 2 coloured red and 1 coloured white**

### Small Budget RTD Sensor

Code No Description

514-140	Small Budget RTD Sensor
---------	-------------------------

## Standard Budget RTD Sensor - Pt100 and Pt1000



These rigid sensors have a stainless steel welded closed end sheath. The sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. They are terminated with heat shrink which allows the attachment of the 2 metre long PFA extension lead. They are an ideal budget buy for general use up to 200°C. A range of adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **IEC 60751 Class B : 2008 RTD Pt100 element or Pt1000 element**
- **Sheath: 316 Stainless Steel 3mm or 6mm OD**
- **Variety of lengths available (not including heat shrink or extension leads)**
- **Operating range: -50°C to +200°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with PFA oversheath. 3 wire - 2 coloured red and 1 coloured white**

### Standard Budget RTD Sensor - Pt100

Code No Description

514-100	3mm dia x 50mm long
514-103	3mm dia x 100mm long
514-106	3mm dia x 150mm long
514-109	3mm dia x 200mm long
514-110	3mm dia x 250mm long
514-112	3mm dia x 300mm long
514-113	3mm dia x 400mm long
514-115	3mm dia x 500mm long
514-119	6mm dia x 50mm long
514-121	6mm dia x 100mm long
514-124	6mm dia x 150mm long
514-127	6mm dia x 200mm long
514-128	6mm dia x 250mm long
514-130	6mm dia x 300mm long
514-131	6mm dia x 400mm long
514-133	6mm dia x 500mm long

### Standard Budget RTD Sensor - Pt1000

Code No Description

514-002	3mm dia x 50mm long
514-004	3mm dia x 100mm long
514-006	3mm dia x 150mm long
514-008	3mm dia x 200mm long
514-010	3mm dia x 250mm long
514-012	3mm dia x 300mm long
514-014	3mm dia x 400mm long
514-016	3mm dia x 500mm long
514-018	6mm dia x 50mm long
514-020	6mm dia x 100mm long
514-022	6mm dia x 150mm long
514-024	6mm dia x 200mm long
514-026	6mm dia x 250mm long
514-028	6mm dia x 300mm long
514-030	6mm dia x 400mm long
514-032	6mm dia x 500mm long

For advice, call one of our experienced engineers on:

☎ 01895 855555

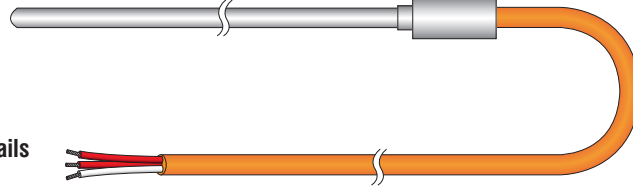
TC  
Direct

# Custom Built RTD Pt100 Sensors

## RTD Sensor - Pt100 with Pot Seal

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Sheath diameters from 3mm to 8.0mm
- Operating range: -75°C to +350°C
- Choice of wiring configurations
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



SECTION 1	N° of Elements
1	Simplex
2	Duplex
3	Triplex

SECTION 2	Sheath Diameter
3.0	3.0mm
4.5	4.5mm
6.0	6.0mm
8.0	8.0mm

SECTION 3	N° of Wires
2	2 wire
3	3 wire
4	4 wire

SECTION 4	Sheath Length
<b>As Required</b>	

SECTION 5	Termination
CE4CL	<p>Other lengths of cable available</p>

SECTION 6	Tolerance of Element (IEC 60751 : 2008)		
Grade	Accuracy @ 0°C	Accuracy @100°C	Order Code
B	±0.30°C	±0.80°C	R100 - B
A	±0.15°C	±0.35°C	R100 - A
1/3	±0.10°C	±0.27°C	R100 - 1/3
1/5	±0.06°C	±0.16°C	R100 - 1/5
1/10	±0.03°C	±0.08°C	R100 - 1/10

SECTION 7	Extension Cables (please specify length in metres)	
RP	PVC Insulation (105°C)	RP37 (3-wire)
		RP47 (4-wire)
		RP67 (Duplex 3-wire)
RT	PFA Insulation (250°C)	RT37 (3-wire)
		RT47 (4-wire)
		RT67 (Duplex 3-wire)

SECTION 8	Optional Stainless Steel Adjustable Compression Fittings		
Dia.	1/8" BSPT	1/4" BSPT	1/2" BSPT
3.0mm	ACF05S	ACF59S	ACF58S
4.5mm	ACF55S	ACF10S	ACF11S
6.0mm	ACF15S	ACF16S	ACF17S
8.0mm	—	ACF27S	ACF56S

*For our full range of fittings, please See page 88*

### Order Code - Example

Type N°	N° of Elements (See section 1)	Sheath dia. (See section 2)	N° of Wires (See section 3)	Sheath Length (mm)	Termination (See section 5)	Resistance value of element	Grade of Element (see section 6)	Extension Cable (See section 7)	Compression Fitting (Optional, see section 8)
16	1	6.0	3	250	CE4CL	R100	B	1m RP37	ACF16S

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



Call us on 01895 855555 to discuss your requirements

# Ex Stock RTD Pt100 Sensors

## RTD Sensor - Pt100 with Miniature Plug



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with a three pin miniature flat pin plug. Ideal where quick disconnection is required near to the sensor. Matching sockets and a range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 3mm OD**
- **Variety of lengths available (not including the plug or its adaptor)**
- **Operating range: -75°C to +350°C**
- **Terminated in a white 3 pin miniature flat pin plug rated to 135°C**

### RTD Sensor with Miniature Plug

Code No Description

514-260	3mm dia x 100mm long
514-263	3mm dia x 150mm long
514-266	3mm dia x 200mm long
514-267	3mm dia x 250mm long
514-269	3mm dia x 300mm long
514-270	3mm dia x 400mm long
514-272	3mm dia x 500mm long
733-132	Matching Miniature 3 pin socket

## Miniature RTD Connectors

These flat pin miniature connectors are ideal for connecting RTD sensors and RTD extension cable to each other. The three pins are polarised to avoid an incorrect connection and the connector body is additionally marked



for polarity. They are rated for use between -50°C and +210°C. In addition to the plug and socket, a panel socket is available on request along with matching anodised aluminium connector panels. Weatherproof silicone rubber boots are also available for added protection in moist environments.

- **For connection to 3 wire sensors or cable**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for 0.002mm up to 0.6mm wire diameters**
- **Colour coded - White**
- **Dimensions: Plug 19x23.9x8mm (LxWxD) with 12mm long pins**  
**Socket 25.4x23.9x8mm (LxWxD)**
- **Manufactured by the TC Group**

### Miniature RTD Connectors

Code No Description

733-130	Miniature RTD Plug
733-132	Miniature RTD Socket

## RTD Sensor - Pt100 with Standard Plug



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with a three pin standard round pin plug. Ideal where quick disconnection is required near to the sensor. Matching sockets and a range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 3mm or 6mm OD**
- **Variety of lengths available (not including the plug or its adaptor)**
- **Operating range: -75°C to +350°C**
- **Terminated in a white 3 pin standard round pin plug rated to 135°C. Matching sockets are available separately**

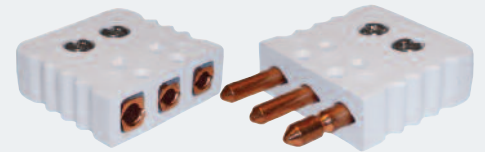
### RTD Sensor with Standard Plug

Code No Description

514-340	3mm dia x 100mm long
514-343	3mm dia x 150mm long
514-346	3mm dia x 200mm long
514-347	3mm dia x 250mm long
514-349	3mm dia x 300mm long
514-350	3mm dia x 400mm long
514-352	3mm dia x 500mm long
514-355	6mm dia x 100mm long
514-358	6mm dia x 150mm long
514-361	6mm dia x 200mm long
514-362	6mm dia x 250mm long
514-364	6mm dia x 300mm long
514-365	6mm dia x 400mm long
514-367	6mm dia x 500mm long
733-462	Matching Standard 3 pin socket

## Standard RTD Connectors

These round pin standard connectors are ideal for connecting RTD sensors and RTD extension cable to each other. The pins are polarised



to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.

- **For connection to 3 wire sensors or cable**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Dimensions: Plug 35x36.5x12.8mm (LxWxD) with 15mm long round pins.**  
**Socket 35x36.5x12.8mm (LxWxD)**
- **Manufactured by the TC Group**

### Standard RTD Connectors

Code No Description

733-460	Standard RTD Plug
733-462	Standard RTD Socket

For advice, call one of our experienced engineers on:

01895 855555

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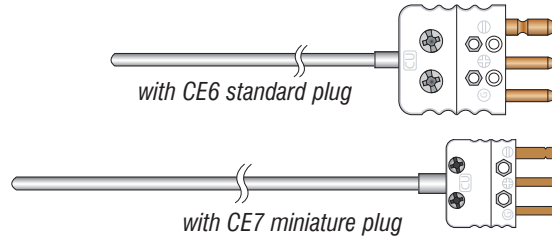


# Custom Built RTD Pt100 Sensors

## RTD Sensor - Pt100 with Connector

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Sheath diameters from 3mm to 8.0mm
- Plastic quick disconnect connectors
- Operating range: -75°C to +350°C
- Standard or Miniature connectors available
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



SECTION 1	N° of Elements
1	Simplex
2	Duplex

SECTION 2	Sheath Diameter
3.0	3.0mm
4.5	4.5mm
6.0	6.0mm
8.0	8.0mm

SECTION 3	N° of Wires
2	2 wire
3	3 wire
4	4 wire

SECTION 4	Sheath Length
<b>As Required</b>	

SECTION 5	Connector Style
CE6	<p>Standard 3 pin round plastic bodied quick disconnect plug for three wire assemblies. Max. end seal temp. 135°C.</p>
CE7	<p>Miniature 3 pin round plastic bodied quick disconnect plug for three wire assemblies. Max. end seal temp. 135°C.</p>

SECTION 6	Tolerance of Element (IEC 60751 : 2008)		
Grade	Accuracy @ 0°C	Accuracy @100°C	Order Code
B	±0.30°C	±0.80°C	R100 - B
A	±0.15°C	±0.35°C	R100 - A
1/3	±0.10°C	±0.27°C	R100 - 1/3
1/5	±0.06°C	±0.16°C	R100 - 1/5
1/10	±0.03°C	±0.08°C	R100 - 1/10

2 pin connectors for 2 wire assemblies and 2 x 2pin connectors for 4 wire assemblies are available on request.

Order Code - Example							
Type N°	N° of Elements (See section 1)	Sheath dia. (See section 2)	N° of Wires (See section 3)	Sheath Length (mm)	Connector Style (See section 5)	Resistance value of element	Grade of Element (see section 6)
16	- 1	- 6.0	- 3	- 250	- CE6	- R100	- B

Call us on 01895 855555 to discuss your requirements

RTD Pt100 Sensors

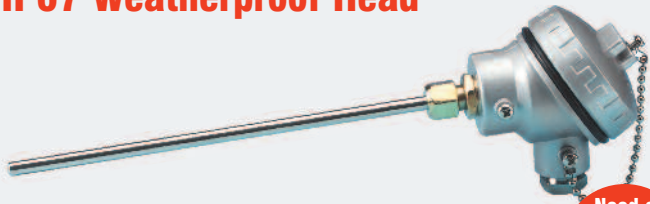
**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



## Ex Stock RTD Pt100 Sensors

### RTD Sensor - Pt100 with Miniature IP67 Weatherproof Head



**Need a  
compression  
fitting? See  
page 88**

These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with an IP67 miniature weatherproof head. Ideal where a heavy duty connection needs to be made near to the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- 3 wire configuration
- Pt100 element meets IEC 60751 Class B : 2008
- Sheath: 316 Stainless Steel 3mm or 6mm OD
- Variety of lengths available. Length shown does not include the head or its gland
- Operating range: -75°C to +350°C
- Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C

#### RTD Sensor with Miniature Weatherproof Head

Code No Description

514-420	3mm dia x 150mm long
514-421	3mm dia x 250mm long
514-423	3mm dia x 300mm long
514-424	3mm dia x 400mm long
514-426	3mm dia x 500mm long
514-428	3mm dia x 1000mm long
514-432	6mm dia x 150mm long
514-434	6mm dia x 250mm long
514-435	6mm dia x 300mm long
514-437	6mm dia x 400mm long
514-438	6mm dia x 500mm long
514-440	6mm dia x 1000mm long

### RTD Sensor - Pt100 with Micro Head



**Need a  
compression  
fitting? See  
page 88**

These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with a micro head (63mm high x 49mm diameter). Ideal where space is at a premium and a micro head is required. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- 3 wire configuration
- Pt100 element meets IEC 60751 Class B : 2008
- Sheath: 316 Stainless Steel 3mm or 6mm OD
- Variety of lengths available. Length shown does not include the head or its gland
- Operating range: -75°C to +350°C
- Terminated in a micro weatherproof die cast alloy head rated to 135°C
- Ideal where space is at a premium

#### RTD Sensor with Micro Head

Code No Description

513-211	3mm dia x 150mm long
513-213	3mm dia x 250mm long
513-215	3mm dia x 300mm long
513-217	3mm dia x 400mm long
513-219	3mm dia x 500mm long
513-221	3mm dia x 1000mm long
513-223	6mm dia x 150mm long
513-225	6mm dia x 250mm long
513-227	6mm dia x 300mm long
513-229	6mm dia x 400mm long
513-232	6mm dia x 500mm long
513-234	6mm dia x 1000mm long

## Custom Built or Ex Stock Temperature Sensors



**We are the largest manufacturer of temperature sensors in Europe. Having an enormous range of components in stock means we can make virtually any sensor you specify.**

**As well as having vast stocks of standard sensors, we can ship custom built items typically within 5 days of ordering or sooner if required.**

**For advice, call one of our experienced engineers on:**

**01895 855555**

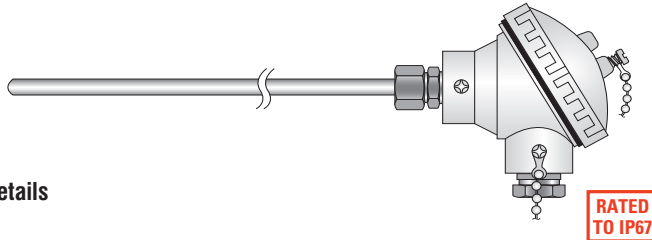
**TC  
Direct**

# Custom Built RTD Pt100 Sensors

## RTD Sensor - Pt100 with Miniature IP67 Weatherproof Head

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Sheath diameters from 3.0mm to 8mm
- Die Cast Alloy Head with ceramic terminal block
- Operating range: -75°C to +350°C
- Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



SECTION 1	N° of Elements
1	Simplex
2	Duplex

SECTION 2	Sheath Diameter
3.0	3.0mm
4.5	4.5mm
6.0	6.0mm
8.0	8.0mm

SECTION 3	N° of Wires
2	2 wire
3	3 wire
4	4 wire

SECTION 4	Sheath Length
<b>As Required</b>	

SECTION 5	Termination
CE10	

SECTION 6	Tolerance of Element (IEC 60751 : 2008)		
Grade	Accuracy @ 0°C	Accuracy @100°C	Order Code
B	±0.30°C	±0.80°C	R100 - B
A	±0.15°C	±0.35°C	R100 - A
1/3	±0.10°C	±0.27°C	R100 - 1/3
1/5	±0.06°C	±0.16°C	R100 - 1/5
1/10	±0.03°C	±0.08°C	R100 - 1/10

SECTION 7	Optional Stainless Steel Adjustable Compression Fittings		
Dia.	1/8" BSPT	1/4" BSPT	1/2" BSPT
3.0mm	ACF05S	ACF59S	ACF58S
4.5mm	ACF55S	ACF10S	ACF11S
6.0mm	ACF15S	ACF16S	ACF17S
8.0mm	—	ACF27S	ACF56S

*For our full range of fittings, please See page 88*

### Order Code - Example

Type N°	N° of Elements (See section 1)	Sheath dia. (See section 2)	N° of Wires (See section 3)	Sheath Length (mm)	Termination (See section 5)	Resistance value of element	Grade of Element (see section 6)	Compression Fitting (Optional, see section 7)
16	- 1	- 6.0	- 3	- 200	- CE10	- R100	- B	- ACF16S

Call us on 01895 855555 to discuss your requirements

RTD Pt100 Sensors

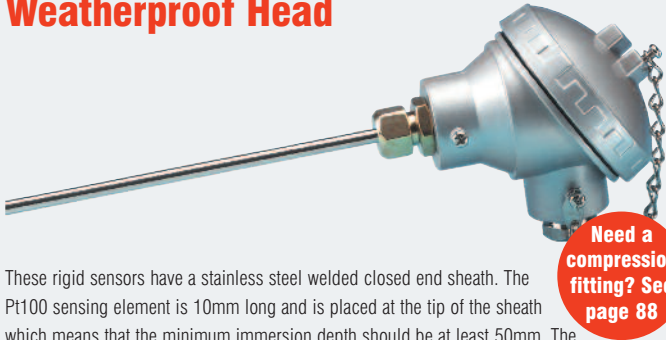
**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock RTD Pt100 Sensors

## RTD Sensor - Pt100 with Standard IP67 Weatherproof Head



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with an IP67 standard weatherproof head. Ideal where a heavy duty connection needs to be made near to the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 6mm or 8mm OD**
- **Variety of lengths available. Length shown does not include the head or its gland**
- **Operating range: -75°C to +350°C**
- **Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C**

### RTD Sensor with Standard Weatherproof Head

Code No Description

514-500	6mm dia x 150mm long
514-501	6mm dia x 250mm long
514-503	6mm dia x 300mm long
514-504	6mm dia x 400mm long
514-506	6mm dia x 500mm long
514-509	8mm dia x 150mm long
514-510	8mm dia x 250mm long
514-512	8mm dia x 300mm long
514-513	8mm dia x 400mm long
514-515	8mm dia x 500mm long

## RTD Sensor with Standard Head & Process Connection



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. A standard weatherproof die cast alloy head is incorporated and is ideal where a heavy duty connection with cable is to be made near the sensor. A 1/2" BSP parallel process connection thread is fitted directly below the terminal head for easy mounting of the sensor in to the process.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 6mm OD**
- **Variety of lengths available. Length shown does not include the head or its gland**
- **Operating range: -75°C to +350°C**
- **Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C**
- **1/2" BSP Parallel process connection thread (length taken from under hex of process thread)**

### RTD Sensor with Standard Head and Process Connection

Code No Description

516-200	6.0mm dia x 150mm long
516-203	6.0mm dia x 300mm long
516-206	6.0mm dia x 500mm long
516-209	6.0mm dia x 1000mm long

## RTD Sensor - Pt100 with Standard Weatherproof Head and 4-20mA Transmitter



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. A 4-20mA transmitter ranged either -25°C to 100°C, 0°C to 200°C or 0°C to 350°C is incorporated into the head, so that you may extend the sensor with standard 2 wire copper instrument cable within your loop system. The standard head is weatherproof to IP67. The sensor is rated up to 350°C. Ideal where quick disconnection is required near to the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product. Other ranges are available on request.

- **3 wire configuration**
- **PT100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel 6mm OD**
- **Variety of lengths available. Length shown does not include the head or its gland**
- **Operating range: -75°C to +350°C dependent on model chosen**
- **Terminated in an IP67 standard weatherproof head rated to 135°C with head mounted 4-20mA transmitter**

### RTD Sensor with Standard Head and Transmitter

Code No Description

514-580	6mm dia x 150mm long -25°C/+100°C
514-583	6mm dia x 300mm long -25°C/+100°C
514-586	6mm dia x 500mm long -25°C/+100°C
514-589	6mm dia x 150mm long 0°C/+200°C
514-592	6mm dia x 300mm long 0°C/+200°C
514-595	6mm dia x 500mm long 0°C/+200°C
514-598	6mm dia x 150mm long 0°C/+350°C
514-601	6mm dia x 300mm long 0°C/+350°C
514-604	6mm dia x 500mm long 0°C/+350°C

### Can't see what you want ?

Don't hesitate to call us. TC Direct is the distribution division of the TC group of companies. We are able to custom build the widest range of temperature sensors in Europe. We can quote to your specifications or drawings. Most custom built products can be made for you in days!

For advice, call one of our experienced engineers on:

☎ 01895 855555

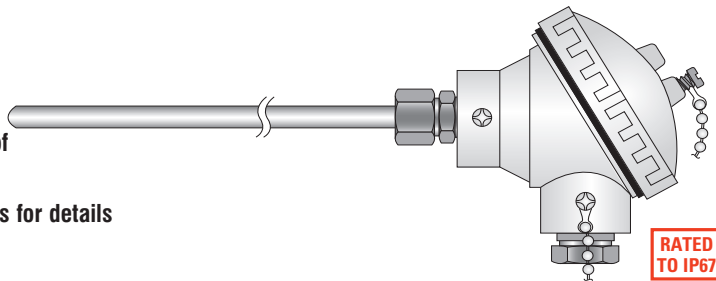
**TC Direct**

# Custom Built RTD Pt100 Sensors

## RTD Sensor - Pt100 with Standard IP67 Weatherproof Head

Our easy-to-follow selection guide enables you to build the part code for the sensor you require, then simply call us, email or fax us with the part number and one of our experienced engineers will confirm prices to you. Just call us and we will go through your requirement with you. Delivery is usually within 5 days but we can improve on that if your requirement is urgent. Alternatively, there may be an Ex Stock option we can guide you towards. Either way, talk to us and we will find you the best option and the best prices!

- Sensors made to meet your requirements
- Sheath diameters from 3.0mm to 8.0mm
- Operating range: -75°C to +350°C
- Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C
- UKAS calibration available, please contact us for details
- Generally shipped in 5 days or sooner



SECTION 1	N° of Elements
1	Simplex
2	Duplex
3	Triplex

SECTION 2	Sheath Diameter
3.0	3.0mm
4.5	4.5mm
6.0	6.0mm
8.0	8.0mm

SECTION 3	N° of Wires
2	2 wire
3	3 wire
4	4 wire

SECTION 4	Sheath Length
<b>As Required</b>	

SECTION 5	Termination
CE11	

SECTION 6	Tolerance of Element (IEC 60751 : 2008)		
Grade	Accuracy @ 0°C	Accuracy @100°C	Order Code
B	±0.30°C	±0.80°C	R100 - B
A	±0.15°C	±0.35°C	R100 - A
1/3	±0.10°C	±0.27°C	R100 - 1/3
1/5	±0.06°C	±0.16°C	R100 - 1/5
1/10	±0.03°C	±0.08°C	R100 - 1/10

SECTION 7	Optional Stainless Steel Adjustable Compression Fittings		
Dia.	1/8" BSPT	1/4" BSPT	1/2" BSPT
3.0mm	ACF05S	ACF59S	ACF58S
4.5mm	ACF55S	ACF10S	ACF11S
6.0mm	ACF15S	ACF16S	ACF17S
8.0mm	—	ACF27S	ACF56S

*For our full range of fittings, please See page 88*

SECTION 8	Optional 4 to 20mA Head Mounted Transmitter (please specify range in °C)
TXLPRT	<p style="text-align: center;"><i>Fully Linearised</i></p>

### Order Code - Example

Type N°	N° of Elements (See sec.1)	Sheath dia. (See sec. 2)	N° of Wires (See sec. 3)	Sheath Length (mm)	Termination (See section 5)	Resistance value of element	Grade of Element (see sec. 6)	Compression Fitting (Optional, see sec. 7)	4 to 20mA Transmitter (Optional, see sec. 8)
16	1	6.0	3	250	CE11	R100	A	ACF17S	TXLPRT (0/100°C)

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**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**

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Call us on 01895 855555 to discuss your requirements

# Ex Stock RTD Pt100 Sensors

## RTD Sensor - Pt100 Mineral Insulated with Pot Seal - 600°C rated



Ideal for either high temperature applications or situations requiring a long probe length, these semi flexible sensors have a stainless steel mineral insulated welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 600°C at the tip. They are terminated with a pot seal rated to 135°C which allows the attachment of the 2 metre long PFA extension lead. A range of adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel Mineral Insulated 3mm or 6mm OD**
- **Variety of lengths available. Length shown does not include pot seal or leads**
- **Operating range: -75°C to +600°C at tip**
- **Terminated in a pot seal 12mm OD x 29mm long rated to 135°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with a PFA oversheath. 3 wire - 2 coloured red and 1 coloured white**

### RTD Sensor - 600°C rated with Pot Seal

Code No Description

514-657	3mm dia x 300mm long
514-660	3mm dia x 500mm long
514-663	3mm dia x 1000mm long
514-666	3mm dia x 2000mm long
514-669	3mm dia x 4000mm long
514-671	6mm dia x 300mm long
514-672	6mm dia x 500mm long
514-675	6mm dia x 1000mm long
514-678	6mm dia x 2000mm long
514-681	6mm dia x 4000mm long

## RTD Sensor - Pt100 Mineral Insulated with IP67 Miniature Weatherproof Head - 600°C rated



Ideal for either high temperature applications or situations requiring a long probe length, these semi flexible sensors have a stainless steel mineral insulated welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 600°C at the sensing tip. They are terminated with an IP67 miniature weatherproof head rated to 135°C. Ideal where a heavy duty connection needs to be made near to the sensor.

A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel Mineral Insulated 3mm or 6mm OD**
- **Variety of lengths available. Length shown does not include the head or its gland**
- **Operating range: -75°C to +600°C at tip**
- **Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C**

### RTD Sensor 600°C rated with Miniature Head

Code No Description

514-737	3mm dia x 300mm long
514-740	3mm dia x 500mm long
514-743	3mm dia x 1000mm long
514-746	3mm dia x 1500mm long
514-748	6mm dia x 300mm long
514-749	6mm dia x 500mm long
514-752	6mm dia x 1000mm long
514-755	6mm dia x 1500mm long

## RTD Sensor - Pt100 Mineral Insulated with IP67 Standard Weatherproof Head - 600°C rated



Need a compression fitting? See page 88

Ideal for either high temperature applications or situations requiring a long probe length, these semi flexible sensors have a stainless steel mineral insulated welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 600°C at the tip. They are terminated with an IP67 standard weatherproof head rated to 135°C. Ideal where a heavy duty connection needs to be made near to the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath: 316 Stainless Steel Mineral Insulated 3mm, 6mm or 8mm OD**
- **Variety of lengths available. Length shown does not include the head or its gland**
- **Operating range: -75°C to +600°C at tip**
- **Terminated in an IP67 standard weatherproof die cast alloy head rated to 135°C**

### RTD Sensor 600°C rated with Standard Head

Code No Description

514-817	3mm dia x 300mm long
514-820	3mm dia x 500mm long
514-823	3mm dia x 1000mm long
514-826	3mm dia x 1500mm long
514-828	6mm dia x 300mm long
514-829	6mm dia x 500mm long
514-832	6mm dia x 1000mm long
514-835	6mm dia x 1500mm long
514-838	8mm dia x 500mm long
514-841	8mm dia x 1000mm long
514-844	8mm dia x 1500mm long

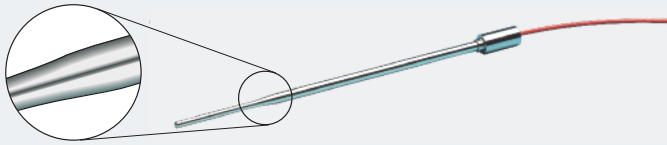
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TC Direct

# Ex Stock Swaged and Miniature RTD Pt100 Sensors

## Swaged RTD Sensor - Pt100 with Pot Seal



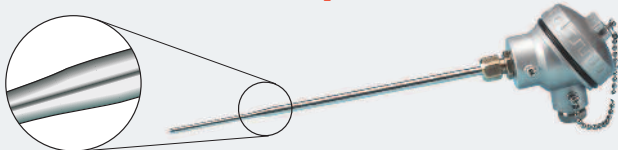
A unique fast response, high strength, low cost solution to many problematical temperature measurement applications. Rugged large diameter with a low thermal mass reduced tip provides for incredibly fast response. They are terminated with a pot seal which allows the attachment of the 2 metre long PFA extension lead. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product. Do remember to select compression fittings for the larger diameter of the sensor.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath Material: 316 Stainless Steel**
- **Variety of lengths and diameters available. Length shown does not include the pot seal or extension leads**
- **The swaged tip part of the sensor is approximately 50mm long. This part of the sensor has nominal dimensions due to the nature of swaging**
- **Operating range: -75°C to +250°C**
- **Terminated in a pot seal 12.7mm OD x 29mm long rated to 135°C**
- **Extension Leads: 2 metres long, 7/0.2mm dia PFA insulated cores with PFA oversheath. 3 wire - 2 coloured red and 1 coloured white**

### Swaged RTD Sensor with Pot Seal

Code No	Description
514-903	3.0>2.0mm dia x 150mm long
514-906	3.0>2.0mm dia x 200mm long
514-909	3.0>2.0mm dia x 300mm long
514-912	3.0>2.0mm dia x 500mm long
514-921	6.0>4.5mm dia x 150mm long
514-924	6.0>4.5mm dia x 200mm long
514-927	6.0>4.5mm dia x 300mm long
514-930	6.0>4.5mm dia x 500mm long

## Swaged RTD Sensor - Pt100 with Miniature Weatherproof Head



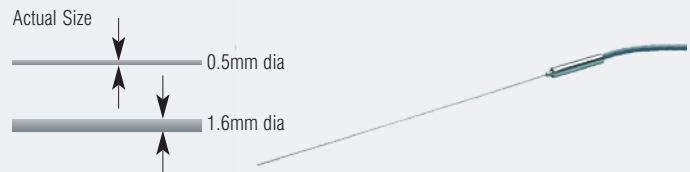
A unique fast response, high strength, low cost solution to many problematical temperature measurement applications. Rugged large diameter with a low thermal mass reduced tip provides for incredibly fast response. They are terminated with an IP67 miniature weatherproof head. Ideal where a heavy duty connection needs to be made near to the sensor. A range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product. Do remember to select compression fittings for the larger diameter of the sensor.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath Material: 316 Stainless Steel**
- **Variety of lengths and diameters available. Length shown does not include the head or its gland**
- **The swaged tip part of the sensor is approximately 50mm long. This part of the sensor has nominal dimensions due to the nature of swaging**
- **Operating range: -75°C to +250°C**
- **Terminated in an IP67 miniature weatherproof die cast alloy head rated to 135°C**

### Swaged RTD Sensor with Miniature Head

Code No	Description
515-023	3.0>2.0mm dia x 150mm long
515-026	3.0>2.0mm dia x 200mm long
515-029	3.0>2.0mm dia x 300mm long
515-032	3.0>2.0mm dia x 500mm long
515-038	6.0>4.5mm dia x 150mm long
515-041	6.0>4.5mm dia x 200mm long
515-044	6.0>4.5mm dia x 300mm long
515-047	6.0>4.5mm dia x 500mm long

## Miniature RTD Sensor - Pt100 - 0.5 to 1.6mm diameter



These miniature RTD sensors are available in either 0.5mm, 0.8mm, 1.0mm or 1.6mm diameters. They have an incredibly fast response time compared to larger diameter sensors and are ideal for applications such as laboratories or applications where response time is critical. They are supplied as four wire devices but by simply selecting only two red and one white leads they can also be used as three wire devices. The sensor is rated up to 350°C. They are terminated with a pot seal which allows the attachment of the 1 metre long PVC extension leads. These sensors are supplied in a custom built case to ensure they are received by you in perfect condition and for you to store them safely when not in use.

- **4 wire configuration (but also suitable for 3 wire configuration)**
- **Pt100 element meets IEC 60751 Class A : 2008**
- **Sheath: 316 Stainless Steel 0.5mm, 0.8mm, 1.0mm or 1.6mm**
- **100mm or 200mm long versions available. Length shown does not include pot seal or leads**
- **Operating range: -75°C to +350°C**
- **Terminated in a pot seal rated to 105°C**
- **Extension Leads: 1 metre long, 7/0.2mm dia PVC insulated cores with a PVC oversheath. 4 wire - 2 coloured red and 2 coloured white (can be used as a three wire device by not connecting up one of the white leads)**

### Miniature RTD Sensor

Code No	Description
515-110	0.5mm dia x 100mm long
515-113	0.5mm dia x 200mm long
515-116	0.8mm dia x 100mm long
515-119	0.8mm dia x 200mm long
515-122	1.0mm dia x 100mm long
515-125	1.0mm dia x 200mm long
515-128	1.6mm dia x 100mm long
515-131	1.6mm dia x 200mm long

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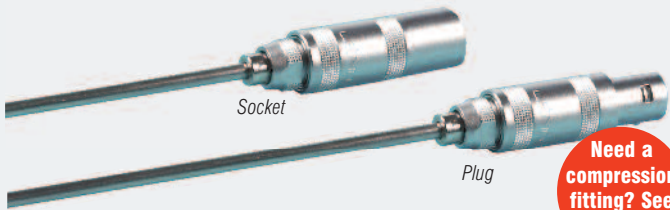
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# Ex Stock RTD Pt100 Sensors

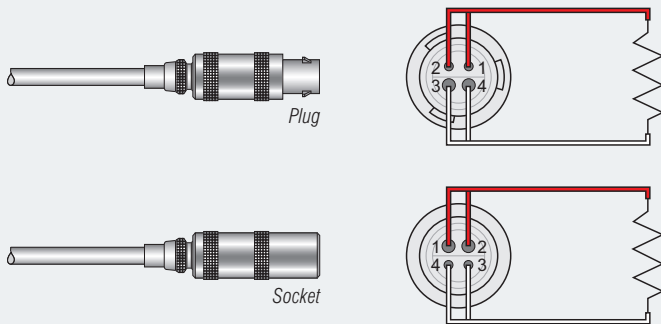
## RTD Sensor - Pt100 with Size 1 Lemo Connector



These rigid sensors have a stainless steel welded closed end sheath. The Pt100 sensing element is 10mm long and is placed at the tip of the sheath which means that the minimum immersion depth should be at least 50mm. The sensor is rated up to 350°C. They are terminated with a size 1 Lemo plug or socket. Ideal where quick disconnection is required near to the sensor. Mating connectors and a range of extension cables and adjustable compression fittings can be found in this catalogue to complement this product.

- 4 wire configuration
- Pt100 element meets IEC 60751 Class B : 2008
- Sheath: 316 Stainless Steel 3mm OD
- Variety of lengths available (not including the plug or its adaptor)
- Operating range: -75°C to +350°C
- Terminated in a size 1 Lemo plug or socket. Mating connectors are available

### Wiring Diagram:



Other wiring configurations are available on request - please contact us with your requirements

### RTD Sensor with Lemo Connector

Code No Plug	Code No Socket	Description
514-950	514-951	3mm dia x 150mm long
514-955	514-956	3mm dia x 300mm long
514-960	514-961	3mm dia x 500mm long
514-965	514-966	6mm dia x 150mm long
514-970	514-971	6mm dia x 300mm long
514-975	514-976	6mm dia x 500mm long

### Mating Lemo Connectors

Code No	Description
514-995	Mating Lemo Socket
514-996	Mating Lemo Plug

## Precision RTD - Pt100 Sensor



This precision Pt100 sensor can be used as a temperature reference for comparison of other temperature sensors or alternatively as a high accuracy Pt100 sensor for exacting temperature measurement. Sensors supplied with UKAS calibration certificates are also available.

- Pt100 element meets IEC 60751 Class 1/10 : 2008
- Accuracy of element:  $\pm 0.03^\circ\text{C}$  equating to a typical sensor accuracy of better than  $\pm 0.06^\circ\text{C}$  at  $0^\circ\text{C}$
- This is a 4 wire device; however, it can easily be used for three wire applications by omitting to connect up one of the white leads
- Recommended minimum insertion length: Typically at least 150mm
- Sensing area: The first 20mm from tip
- Operation range:  $-50^\circ\text{C}$  to  $+250^\circ\text{C}$
- Sheath: 316 stainless steel 3mm or 6mm dia x 250mm long
- Leads: 2 metres PFA insulated
- A UKAS calibration certificate at 0, 100 & 200°C is available or alternatively choose your own points (approx. 4/5 days for delivery)

### Precision RTD Sensor

Code No	Description
515-720	Precision RTD sensor 3mm x 250mm
515-725	Precision RTD sensor 6mm x 250mm
515-730	As 515-720 with Cert at 0, 100 & 200°C
515-735	As 515-720 with Cert at 3 custom points
515-740	As 515-725 with Cert at 0, 100 & 200°C
515-745	As 515-725 with Cert at 3 custom points

## RTD Sensor - Pt100 with Hirschmann Connector



These rigid sensors have a 10mm long sensing element at the tip within a stainless steel welded closed end sheath. To achieve the most reliable reading, the minimum immersion depth should be at least 20mm. They are terminated in a Hirschmann connector, which is comprised of a plug and socket and a gasket in between which makes the sensor IP65 rated.

- 3 wire configuration
- Pt100 element meets IEC 60751 Class B : 2008
- Sheath: 316 Stainless Steel 3mm or 6mm OD
- Operating range:  $-50^\circ\text{C}$  to  $+200^\circ\text{C}$
- IP65 Rated

### RTD Sensor with Hirschmann Connector

Code No	Description
514-933	3mm dia x 150mm long
514-936	3mm dia x 300mm long
514-939	3mm dia x 500mm long
514-942	6mm dia x 150mm long
514-945	6mm dia x 300mm long
514-948	6mm dia x 500mm long

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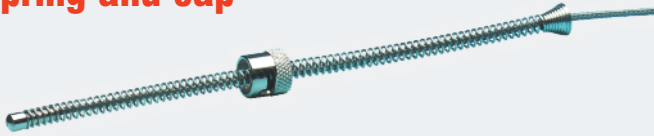
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## Ex Stock RTD Pt100 Sensors

### Bayonet RTD Sensor - Pt100 with spring and cap



Suitable for plastics machinery and general purpose applications, these assemblies are supplied with a 200mm spring which an industry standard one slot adjustable bayonet cap fitting is screwed onto. The fitting can be fine tuned for positioning on site and is suitable where several applications in your plant require individual positioning of the sensor. The sensing tip is incorporated within a 18mm long x 4.7, 6.0 or 8.0mm diameter tube which the stainless steel braided leads are sealed into.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Sheath and lead rated -50°C to +300°C**
- **Sheath: 316 stainless steel 4.7, 6.0 or 8.0mm dia x 18mm long**
- **Leads: 2 metres fibreglass insulated with stainless steel overbraid (including spring length)**

#### Bayonet RTD Sensor with spring and cap

Code No Description

515-150	Bayonet RTD Sensor - 4.7mm
515-153	Bayonet RTD Sensor - 6.0mm
515-156	Bayonet RTD Sensor - 8.0mm
401-169	1/8" BSPP adaptor for 4.7 & 6.0mm sensors
401-172	1/4" BSPP adaptor for 4.7 & 6.0mm sensors
401-175	1/4" BSPP adaptor for 8.0mm sensors

Note: All bayonet adaptors are 22mm long

### Bayonet RTD Sensor - Pt100 with an adjustable cap fitting



Suitable for plastics machinery and general purpose applications these assemblies are supplied in several different lengths with an industry standard one slot adjustable bayonet cap fitting. The fitting can be fine tuned for positioning on site and is suitable where several applications in your plant require individual positioning of the sensor.

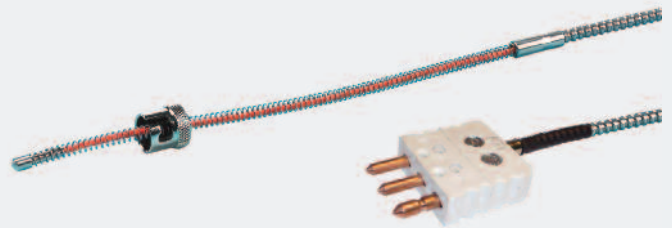
- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Rated -50°C to +350°C**
- **Sheath: 316 stainless steel 4.5mm dia x 100, 150 or 200mm long**
- **Leads: 2 metres fibreglass insulated with a stainless steel overbraid**

#### Bayonet RTD Sensor with adjustable cap fitting

Code No Description

515-190	Bayonet RTD Sensor - 100mm long
515-193	Bayonet RTD Sensor - 150mm long
515-196	Bayonet RTD Sensor - 200mm long
401-198	Spare adjustable bayonet cap fitting
401-169	1/8 inch BSPP adaptor x 22mm long

### Bayonet RTD Sensor - Pt100 with spring and cap - Heavy Duty Version



Suitable for plastics machinery and general purpose applications, these assemblies have a total length of 2 mtrs. The flexible stainless steel armoured cable provides increased mechanical protection in arduous environments. These assemblies are supplied with a 200mm spring which an industry standard one slot adjustable bayonet cap fitting is screwed onto. The fitting can be fine tuned for positioning on site and is suitable where several applications in your plant require individual positioning of the sensor. The sensing tip is incorporated within a 18mm long x 4.7mm diameter tube which the cable and armour are sealed to. The sensor is terminated in a 3 pin standard round pin plug.

- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Temperature rating: 200°C continuous**
- **Sheath: 316 stainless steel 4.7mm dia x 18mm long**
- **Leads: 1.8mtrs Stainless Steel Armoured over PFA insulated cable terminated in a standard round pin plug. Spring length 200mm**
- **Terminated in a 3 pin standard round pin plug**

#### Bayonet RTD Sensor with Stainless Steel Armour

Code No Description

515-175	Bayonet RTD Sensor with armour - 4.7mm
401-169	1/8 inch BSPP adaptor x 22mm long

### Adjustable Ring RTD Sensor - Pt100

For pipe temperature measurement up to 350°C.

This sensor incorporates a Pt100 sensor attached to an adjustable ring. They are available in a number of sizes to suit your diameter of pipe. For enhanced performance we recommend that you lag the sensor after attaching to the pipe.



- **3 wire configuration**
- **Pt100 element meets IEC 60751 Class B : 2008**
- **Versions for pipes 32mm-50mm, 50-150mm or 150-300mm offered**
- **Operating range: -50°C to 350°C**
- **Leads: 2 metres fibreglass insulated with a stainless steel overbraid**

#### Adjustable Ring RTD Sensor

Code No Description

515-270	Ring RTD sensor 32-50mm
515-273	Ring RTD sensor 50-150mm
515-276	Ring RTD sensor 150-300mm

These sensors are recommended for general indication only. For fast response or high accuracy versions, please contact TC Direct.

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# Ex Stock RTD Pt100 Sensors

## FEP Insulated RTD Sensor - Pt100 and Pt1000

These flexible FEP insulated sensors are ideally suited to applications which require resistance to attack from virtually all known chemicals, oils and fluids. Available in a variety of lengths, 4mm in diameter which can be cut down to an exact length by the user if necessary. The sensor element is encapsulated in the tip and the whole sensor is rated to 250°C. Adjustable PTFE compression fittings for an exact insertion length into your process are also available in either 1/4 inch or 1/2 inch BSPT thread sizes.



- IEC 60751 Class B : 2008 RTD Pt100 element or Pt1000 element
- Sheath: FEP insulated 4mm O.D. in a variety of lengths
- Operating range: -75°C to +250°C
- 3 wire connection - 2 cores coloured red and 1 coloured white

### FEP RTD Sensor

Code No Description

517-232	4mm O.D. x 1 metre long - Pt100
517-238	4mm O.D. x 2 metres long - Pt100
517-246	4mm O.D. x 5 metres long - Pt100
517-250	4mm O.D. x 1 metre long - Pt1000
517-253	4mm O.D. x 2 metres long - Pt1000
517-256	4mm O.D. x 5 metres long - Pt1000
876-200	1/4" BSPT PTFE fitting to suit 4mm sensor
876-210	1/2" BSPT PTFE fitting to suit 4mm sensor

## Stator Slot RTD Sensor - Pt100



These laminated fibreglass stator slot winding RTD's fit in slots between stator windings to monitor temperature rise and prevent overheating. The sensing element extends throughout most of the body length which provides an average temperature reading. By making a reading over a larger area, hot spots can be easily detected, which more standard sensors may miss. They can also be used in a number of other applications where an average temperature is required to be measured. We can also make these sensors to suit your requirements.

- 4 wire configuration (can also be used as a three wire device)
- Pt100 sensing element meets IEC 60751 Class B : 2008
- Sheath material: Fibreglass
- Sheath dimensions: 300mm long x 10mm wide x 2.5mm thick or 250mm long x 8mm wide x 2.5mm thick
- Operating range: up to 150°C continuous, 185°C short term
- Extension leads: 5 metres of PFA leads. 4 wire - 2 coloured red and 2 coloured white (for use as a 3 wire device, connect up 2 red and 1 white cores)
- We can make to your requirements (may be subject to minimum quantity)

### Stator Slot RTD Sensor

Code No Description

515-300	300mm long x 10mm wide x 2.5mm thick
515-302	250mm long x 8mm wide x 2.5mm thick

## Standard Bearing RTD Sensor - Pt100

These bearing sensors are designed for use in bearing shoes and will give reliable indication as to the bearing condition. This may provide an early warning of oil film breakdown and allow the machine to shutdown and avoid unnecessary damage.



- 3 wire configuration
- Pt100 element meets IEC 60751 Class B : 2008
- Tip dimensions: 3.2mm dia x 8.0mm long or 6.0mm dia x 8.0mm long
- Operating range: -25°C to 250°C
- Extension leads: 2 metres of 7/0.1mm dia PFA insulated cores, stainless steel braided. 3 wire - 2 coloured red and 1 coloured white

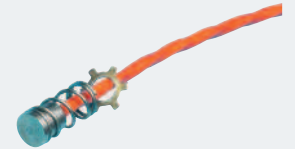
### Standard Bearing RTD Sensor

Code No Description

515-350	3.2mm dia x 8.0mm long
515-360	6.0mm dia x 8.0mm long

## Spring Bearing RTD Sensor - Pt100 'Top Hat Style'

These bearing sensors are also designed for use in bearing shoes. The top hat shape allows spring loading by use of a spring and retaining ring clip. The sensor tip is inserted into the milled hole, then the retaining ring clip is pushed down to compress the spring and retain the sensor. Using these sensors will give reliable indication as to the bearing condition.



This may provide an early warning of oil film breakdown and allow the machine to shutdown and avoid unnecessary damage.

- 3 wire configuration - Simplex or Duplex
- Pt100 element meets IEC 60751 Class B : 2008
- Supplied complete with spring and retaining ring clip
- Tip dimensions: 6.0mm dia (including spring) x 6.0mm long
- Maximum diameter of retaining ring clip: 8mm
- Suited for a blind hole approx 7.92mm dia (5/16" dia)
- Compressed length of spring: 6mm approx
- Operating range: -25°C to 250°C
- Extension leads: 2 metres of 7/0.1mm dia PFA insulated cores, 3 wire - 2 coloured red and 1 coloured white

### Spring Bearing RTD Sensor - 'Top Hat Style'

Code No Description

515-365	6.0mm dia x 6.0mm long - Simplex
515-374	6.0mm dia x 6.0mm long - Duplex
401-606	Spare Springs
401-612	Spare Retaining Clips

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# Ex Stock RTD Pt100 Sensors

## IP68 Rated External/Rugged Air Temperature Wall Mounting Sensor

This rugged air temperature sensor is ideal for any internal or external application requiring a rapid response to changes in air temperature. Its robust construction features an IP68 rated terminal head with 2 mounting holes at either end of the head which can be affixed to a wall or other surface. The sensor itself is housed within a perforated stainless steel tube which allows free flow of air across the sensor element, which in turn will give a good response time. A version is also available with a 4–20mA output for those requiring a standard transducer signal.



- **Metal enclosure dimensions:** 58 x 68 x 125mm
- **Sheath dimensions:** 12.7mm dia x 75mm long pierced shrouded tip
- **3 wire configuration**
- **Sensor:** IEC 60751 Class B : 2008 - RTD Pt100 element or alternatively with an optional 4-20mA transmitter incorporated
- **Wire termination:** Screw terminal block
- **Mounting:** Suited to wall mounting via screw holes at either end of screw top case
- **Cable entry:** via weatherproof cable gland supplied
- **Operating range:** -30°C to +150°C

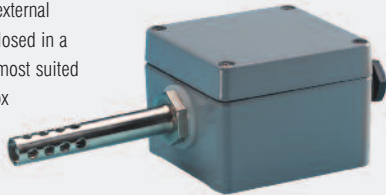
### IP68 External/Rugged Air Temperature Wall Mounting Sensor

Code No Description

515-650	IP68 Air Temperature Sensor - Pt100
515-655	IP68 Air Temperature Sensor - Pt100 and 4-20mA transmitter (-30°C to +150°C)

## External/Rugged Air Temperature Sensor

This air temperature sensor is ideal for external applications as the connections are enclosed in a weatherproof connection box. It is also most suited to internal applications which require box to be rugged. The sensor itself is housed within a perforated stainless steel tube which allows a free flow of air across the sensor element which in turn will give a good response time. A version is also available with a 4-20mA transmitter for those requiring a standard transducer signal.



- **Metal enclosure dimensions:** 80 x 74 x 54mm
- **Sheath dimensions:** 12.7mm dia x 75mm long
- **3 wire configuration**
- **Sensor:** IEC 60751 Class B : 2008 - RTD Pt100 element or alternatively with an optional 4-20mA transmitter incorporated
- **Wire termination:** Screw terminal block
- **Mounting:** Suited to wall mounting via screw holes in back of case
- **Cable entry:** Via weatherproof cable gland supplied
- **Operating range:** -30°C to +150°C

### External Air Temperature Sensor

Code No Description

515-640	External Air Temperature Sensor - Pt100
515-645	External Air Temperature Sensor - Pt100 & 4-20mA transmitter (-30°C to +150°C)

## Indoor Air Temperature RTD Sensor - Pt100 & Pt1000

This air temperature sensor incorporates a Class B 3 wire RTD Pt100 or Pt1000 element which can be wall mounted and is most suited to indoor applications especially in energy management systems.



- **Plastic enclosure** 70 x 70 x 27mm
- **Sensor:** IEC 60751 Class B : 2008 RTD Pt100 element or Pt1000 element
- **Wire termination:** Screw terminal block
- **Mounting:** Suited to wall mounting via screw holes in back of case
- **Cable entry:** Via base of enclosure knock out hole
- **Operating range:** -20°C to +100°C

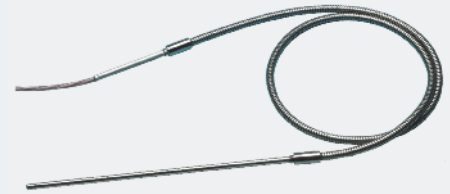
### Indoor Air Temperature Sensor

Code No Description

515-620	Indoor Air Temperature Sensor - Pt100
515-625	Indoor Air Temperature Sensor - Pt1000

## Autoclave Load RTD Sensor - Pt100

The harsh conditions found in the autoclave chambers of sterilisers require a reliable sensor as all too often sensors can fail through ingress of moisture. Our Autoclave Load probe offers a reliable solution



to the problem. Supplied as a simplex or duplex 3 wire sensor, it incorporates one or two RTD Pt100 sensors respectively. A thermocouple version is also available in this catalogue.

- **Simplex or Duplex 3 wire Pt100 element** meets IEC 60751 Class B : 2008
- **Sensor tip:** 6mm OD x 250mm long Stainless Steel
- **Conduit:** 1500mm long Stainless Steel
- **Flying leads:** 3000mm long PFA insulated with silicone rubber sheath
- **Bulkhead feed through tube:** 6mm OD x 150mm long stainless steel
- **Operating range:** -50°C to +200°C

### Autoclave Load RTD Sensor

Code No Description

515-415	RTD - Pt100 Simplex Autoclave Load Probe
515-420	RTD - Pt100 Duplex Autoclave Load Probe

## Autoclave Drain RTD Sensor - Pt100

Whilst the conditions endured by autoclave drain sensors are not as harsh as in the main autoclave chamber, a reliable simplex or duplex sensor should still be used. Our model incorporates similar manufacturing techniques to the autoclave load sensor in order to produce a dependable sensor. A thermocouple version is also available in this catalogue.



- **Simplex or Duplex 3 wire Pt100 element** meets IEC 60751 Class B : 2008
- **Sensor tip:** 6mm OD x 100mm long
- **Flying leads:** 3000mm long PFA insulated with silicone rubber sheath
- **Operating range:** -50°C to +200°C

### Autoclave Drain RTD Sensor

Code No Description

515-405	Pt100 Simplex Autoclave Drain Probe
515-410	Pt100 Duplex Autoclave Drain Probe

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# Ex Stock Surface RTD Pt100 Sensors

## Self Adhesive Patch RTD - Pt100 Sensor

This sensor incorporates a silicon rubber patch with a Pt100 thin film element within, attached to 2 metre long PFA leads. They are available in two different patch sizes for customer convenience. The patch is self adhesive and when placed in position enables good response times from the flush mounted Pt100 element.



- Pt100 thin film element meets IEC 60751 Class B : 2008
- Rubber Patch dimensions:  
Standard: 30mm x 14 mm x 3.4 mm maximum depth  
Large: 40mm x 14 mm x 7 mm maximum depth
- This is a 4 wire device; however, it can easily be used for three wire applications by omitting to connect up one of the white leads
- Sensor housing: Silicon rubber with self adhesive backing
- Operating range: -50°C to +150°C
- Leads: 2 metres PFA insulated

### Self Adhesive Patch RTD Sensor

Code No	Description
515-670	Self Adhesive RTD sensor 30x14x3.4 mm
515-675	Self Adhesive RTD sensor 40x14x7 mm

## Rugged Self Adhesive Patch RTD - Pt100 Sensor

This rugged sensor incorporates a silicon rubber patch with a Pt100 thin film element within, attached to 2 metre long PFA leads with stainless steel braided leads. The patch is self adhesive and when placed in position enables good response times from the flush mounted Pt100 element.



- Pt100 thin film element meets IEC 60751 Class B : 2008
- Rubber Patch dimensions: 40mm x 14 mm x 7 mm maximum depth
- This is a 4 wire device; however, it can easily be used for three wire applications by omitting to connect up one of the white leads
- Sensor housing: Silicon rubber with self adhesive backing
- Operating range: -50°C to +150°C
- Leads: 2 metres PFA insulated, stainless steel braided

### Rugged Self Adhesive Patch RTD Sensor

Code No	Description
515-680	Rugged Self Adhesive RTD sensor

## Heavy Duty Magnet RTD - Pt100

An extremely powerful magnet makes this RTD sensor ideal for heavy duty applications where the surface temperature of ferrous materials needs to be measured. The sensor has a magnet strength of 6Kg and is supplied with 2mtrs of PVC insulated leads.



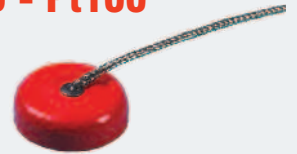
- Surface temperature measurement of ferrous materials
- Pt100 IEC 60751 Class B : 2008
- 3 Wire configuration
- Leads: 2 metres PVC insulated leads
- Operating range: -10°C to +100°C
- Magnet strength: 6Kg
- Magnet Dimensions: 25mm dia. x 13.5mm thick

### Heavy Duty Magnet RTD Sensor

Code No	Description
515-750	Heavy duty magnetic RTD sensor

## High Temp Magnet RTD - Pt100

This versatile magnetic RTD sensor is suitable for high temperature measurements on ferrous surfaces up to a maximum of 300°C. The sensor is supplied with 2mtrs of stainless steel braided fibreglass insulated cable.



- Surface temperature measurement of ferrous materials
- Pt100 IEC 60751 Class B : 2008
- Leads: 2 metres fibreglass insulated with stainless steel overbraid
- Operating range: -10°C to +300°C
- Magnet Dimensions: 29mm dia. x 8.5mm thick

### High Temp Magnet RTD Sensor

Code No	Description
515-755	High Temp magnetic RTD sensor

## Quality

Every product has been meticulously tested throughout, and you can be confident of all our in house procedures from manufacturing and stocking right through to order processing and despatch, as we are registered to Quality Standard ISO 9001.

## Can't see what you want ?

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# Ex Stock Thermowells

## Stainless Steel Thermowell with Integral Compression Fitting



This range of 316 stainless steel welded construction thermowells are for use with our 6mm diameter thermocouple or Pt100 sensors. They are ideal for applications where the removal of the sensor could prove complicated such as on a vessel, pipe or tank. These thermowells are 11mm O.D. and have an integral 1/2 inch BSP tapered (process thread) compression fitting with an olive that compresses on to the sensor sheath. A wide choice of immersion depths (under the thread) is available to suit various lengths of temperature sensor.

- Available in a wide choice of lengths to suit various temperature sensors
- Male Process Thread: 1/2 inch BSPT
- Integral compression fitting to suit 6mm diameter sensor
- Sheath fabricated from 316 Stainless Steel
- Operating range: -75°C to 800°C

### Stainless Steel Thermowell with Integral Compression Fitting

Code No	Description
784-720	50mm below thread (for 100mm sensors)
784-724	100mm below thread (for 150mm sensors)
784-728	150mm below thread (for 200mm sensors)
784-732	200mm below thread (for 250mm sensors)
784-736	250mm below thread (for 300mm sensors)
784-740	300mm below thread (for 350mm sensors)
784-744	450mm below thread (for 500mm sensors)
875-616	Spare St./Steel Olive for 6.0mm
875-360	Spare PTFE Olive for 6.0mm

## Stainless Steel Thermowell



We offer a range of stainless steel thermowells machined from solid bar for use with 6mm diam. temperature sensors. They are ideal for applications where the removal of the sensor could prove complicated such as on a vessel, pipe or tank. They are 12.7mm O.D. and are available with a 1/2 inch BSP taper process entry thread and 1/4 inch BSP parallel sensor entry thread. Use a 1/4 in BSP stainless steel fitting to attach the sensor to the thermowell.

- Male Thread: 1/2 inch BSPT
- Female Thread: 1/4 inch BSPP
- Sheath machined from solid 316 Stainless Steel
- 1/2 in BSP female welding bushes are available separately
- Operating range: -75°C to 800°C

### Stainless Steel Thermowell for use with our Ex Stock 6mm Sensors

Code No	Description
784-398	30mm insertion for 100mm sensors
784-610	80mm insertion for 150mm sensors
784-404	130mm insertion for 200mm sensors
784-409	180mm insertion for 250mm sensors
784-618	230mm insertion for 300mm sensors
784-417	330mm insertion for 400mm sensors
784-626	430mm insertion for 500mm sensors
784-632	930mm insertion for 1000mm sensors*
784-640	1/2" BSP female Welding Bush
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

\*930mm thermowell is a welded construction and not machined from solid

### Stainless Steel Thermowell for use with other 6mm Sensors

Code No	Description
784-400	100mm 'U' Length (sensor length 170mm)
784-408	150mm 'U' Length (sensor length 220mm)
784-410	200mm 'U' Length (sensor length 270mm)
784-412	250mm 'U' Length (sensor length 320mm)
784-416	300mm 'U' Length (sensor length 370mm)
784-418	350mm 'U' Length (sensor length 420mm)
784-420	400mm 'U' Length (sensor length 470mm)
784-422	450mm 'U' Length (sensor length 520mm)
784-424	500mm 'U' Length (sensor length 570mm)
784-640	1/2" BSP female Welding Bush
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

Please note: Sensor lengths shown are minimum lengths

## Heat Transfer Compound

These compounds provide a good solution for applications where increased response time is required from applications where a thermowell is used. When applied to the sensing tip of a sensor prior to inserting into a thermowell, response times dependent upon application are substantially improved. Our Standard compound (0.9W/mK thermal conductivity, 130°C) is available in a 35ml syringe, whilst our Plus compound, which has superior thermal conductivity (2.9W/mK, 200°C) to other compounds is provided in a 50ml tube.

- Ideal for improving response times for thermowells
- Operating range: -50°C to 200°C
- Thermal conductivity: Standard - 0.9W/mK, Plus - 2.9W/mK
- Size: Standard 35ml, Plus 50ml

### Heat Transfer Compound

Code No	Description
784-100	Standard Heat Transfer Compound - 35ml
784-150	Plus Heat Transfer Compound - 50 ml

## PTFE Thermowell



Our range of PTFE thermowells are ideally suited to applications which require resistance to attack from virtually all known chemicals, oils and fluids, for use with 6mm diameter stainless steel sheathed thermocouple or Pt100 sensors. Used in applications where the removal of the sensor could prove complicated such as in a vessel, pipe or tank. They are 12mm O.D. and are available with a 1/2 inch BSP taper process entry thread and 1/4 inch BSP parallel sensor entry thread. Use a 1/4 in BSP PTFE fitting (or stainless steel if clear of the difficult environment) to attach the sensor to the thermowell.

- Available in 80mm, 230mm, 430mm and 930mm insertion lengths
- Sheath material: PTFE
- Male Thread: 1/2 inch BSPT, Female Thread: 1/4 inch BSPP
- Operating range: -75°C to 250°C

### PTFE Thermowell for use with 6mm Sensors

Code No	Description
784-668	80mm insertion for 150mm sensor
784-676	230mm insertion for 300mm sensor
784-684	430mm insertion for 500mm sensor
784-692	930mm insertion for 1000mm sensor
876-300	1/4" BSPT PTFE fitting to suit 6mm sensor
875-491	1/4" BSPT St/St fitting to suit 6mm sensor

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# Ex Stock RTD Pt100 Sensors

## Hand Held RTD Pt100 Indicator

This hand held digital RTD Pt100 indicator accepts our range of RTD Pt100 sensors and has a clear LCD display. The case is manufactured from hi-grade ABS plastic. It also has a flip out desk stand built into the rear of the instrument for bench work. Other features include peak hold and data hold function keys, timer, a °C/°F/°K transfer key and an ergonomically designed keypad with non slip function keys.



- **Resolution:** 0.1°C/0.1°F/0.1°K
- **Accuracy:** ±0.05% of reading + 0.2°C  
±0.05% of reading + 0.4°F
- **Read rate:** once per second
- **Suitable for use with all RTD Pt100 sensors**
- **Weight** 300g
- **Power supply:** 6 AAA batteries (supplied)

Code No Description

753-560	Hand Held RTD Pt100 Type Indicator
898-566	Spare pack of 6 AAA Batteries

## Hand Held RTD Pt100 Sensors

### General Purpose Sensor

Our general purpose 3-Wire RTD Pt100 sensor is offered with a rigid sheath in either 3mm or 6mm diameter, with a Class B element at the tip and 300mm in length. The stem is rated to 350°C and the handle to 135°C. Supplied complete with a lead and three pin connector.



Code No Description

406-950	3mm dia x 300mm
406-960	6mm dia x 300mm

## RTD - Pt100 Extension Leads

These RTD - Pt100 leads are ideal for connecting a wide variety of applications. They are available in either 1, 2, 5 or 10 metre lengths of PVC insulated cable with the option of having either a miniature plug at each end or, alternatively, a miniature plug at one end and a miniature socket at the other.



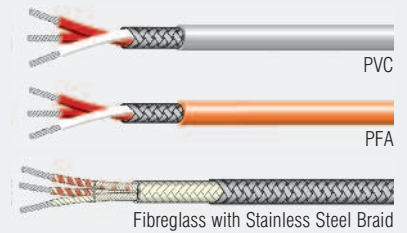
### RTD - Pt100 Extension Lead

Code No Description

832-180	1 metre - Plug to Plug
832-186	2 metres - Plug to Plug
832-188	5 metres - Plug to Plug
832-190	10 metres - Plug to Plug
832-192	1 metre - Plug to Socket
832-198	2 metres - Plug to Socket
832-200	5 metres - Plug to Socket
832-202	10 metres - Plug to Socket

## RTD Extension Cable 7/0.2mm dia Twisted Screened Construction

We supply 7/0.2mm dia RTD extension cable in either 25, 50, 100 or 200 metre lengths. Three or six cores are supplied and insulated in either Heat Resistant PVC or PFA or Stainless Steel Braided Fibreglass. The cores are then twisted, screened, and overall sheathed in the same material.



- **3 or 6 cores of 7/0.2mm dia twisted conductors,**  
PVC version has a tinned copper braid and is then overall PVC sheathed.  
PFA version has a nickel plated copper braid and is then overall sheathed.  
Fibreglass version is fibreglass braided then stainless steel braided overall.
- **Temperature rated as follows**  
Heat Resistant PVC 105°C, PFA 250°C and Fibreglass 480°C
- **Cores colour coded :- 2 cores red and 1 core white**
- **Outer sheath PVC - Grey, PFA - Orange and Fibreglass is stainless steel**
- **Available in a variety of lengths**
- **Easy connection to our range of sensors via our connector systems or the rear terminals on our indicators, controllers and programmers all of which can be found elsewhere in this catalogue.**

### 3 Core RTD Twisted Screened Extension Cable

Code No Description

835-103	25 metre reel - PVC
835-105	50 metre reel - PVC
835-107	100 metre reel - PVC
835-109	200 metre reel - PVC
835-113	25 metre reel - PFA
835-115	50 metre reel - PFA
835-117	100 metre reel - PFA
835-119	200 metre reel - PFA
835-123	25 metre reel - Fibreglass/St St Braided
835-125	50 metre reel - Fibreglass/St St Braided
835-127	100 metre reel - Fibreglass/St St Braided
835-129	200 metre reel - Fibreglass/St St Braided

### 6 Core RTD Twisted Screened Extension Cable

Code No Description

835-203	25 metre reel - PVC
835-205	50 metre reel - PVC
835-207	100 metre reel - PVC
835-209	200 metre reel - PVC
835-211	25 metre reel - PFA
835-213	50 metre reel - PFA
835-215	100 metre reel - PFA
835-217	200 metre reel - PFA
835-219	25 metre reel - Fibreglass/St St Braided
835-221	50 metre reel - Fibreglass/St St Braided
835-223	100 metre reel - Fibreglass/St St Braided
835-225	200 metre reel - Fibreglass/St St Braided

For advice, call one of our experienced engineers on:

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TC Direct

# Calibration & Pt100 Elements

## UKAS Calibration Service for Sensors

We offer a full UKAS calibration service from our in house accredited laboratory. With the drive towards higher product quality standards and energy efficiency, end users are demanding more certainty and traceability from the products they purchase.



A speedy, economical and reliable calibration service is provided in all respects. Our application engineers who have all been trained in our laboratory are available if required to give assistance in recommending a calibration strategy suitable for your application. Whilst there are some limitations as to which sensors can be calibrated, we can if necessary custom build sensors in order to meet both the requirements of the application as well as the relevant calibration equipment.

- In house UKAS service offered
- Calibration available from -100°C to 1590°C (-196°C Fixed point calibration is also available - please contact us for details and pricing)
- Sensors to be calibrated need in most cases to be at least 490mm in length, however, for some low temperature applications this length can be shorter. Contact us if you require further details
- 4/5 day delivery is standard or quicker if required
- Full calibration certificate available promptly
- Calibration available for products purchased from us or any other manufacturer

### Calibration

Code No	Description
998-002	1 sensor at 1 point
998-008	1 sensor at 2 points
998-014	1 sensor at 3 points
998-020	1 sensor at 4 points
998-026	2 sensors at 1 point
998-032	2 sensors at 2 points
998-038	2 sensors at 3 points
998-044	3 sensors at 1 point
998-050	3 sensors at 2 points
998-056	3 sensors at 3 points
998-998	Any other combination

### Prices

We have no minimum order value. Carriage within the UK is just £12.00 per shipment but free for orders above £100.00. We believe that all the products in this catalogue represent excellent value for money. If you are currently purchasing these products elsewhere, please check our prices. We are sure that you will not be disappointed.

### Payment

An account can instantly be opened for you! Alternatively, if you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



## Wire wound Pt100 elements

These Pt100 elements are perfect for applications requiring high temperature shock resistance and temperature stability. A variety of tolerances is available. The measuring point for the nominal resistance of 100 ohms @ 0°C is taken 5mm from the end of the sensor body. We recommend that any user who is not sure how to use these products should choose a made up 3 wire Pt100 sensor shown elsewhere in this catalogue.



- Nominal resistance: 100 ohms at 0°C, 138.5 ohms at 100°C
- Tolerance Classes available: B, A, 1/3, 1/5 or 1/10 to IEC 60751 : 2008
- Temperature range: -200°C to 600°C
- Dimensions: 25mm long x 3mm dia or 15mm long x 1.6mm dia
- Leads: 10mm long (resistance value taken at 5mm from sensor body)

### Wire Wound Pt100 Elements 25mm long x 3mm dia

Code No	Description
578-050	Class B
578-053	Class A
578-056	Class 1/3
578-059	Class 1/5
578-062	Class 1/10

### Wire Wound Pt100 Elements 15mm long x 1.6mm dia

Code No	Description
578-072	Class B
578-075	Class A
578-078	Class 1/3
578-081	Class 1/5
578-084	Class 1/10

## Flat Film Pt100 elements

Placed on a ceramic substrate, these laser trimmed Pt100 elements have a variety of uses including measuring surface or air flow temperatures. The measuring point for the nominal resistance of 100 ohms @ 0°C is taken 5mm from the end of the sensor body. We recommend that any user who is not sure how to use these products should choose a made up 3 wire Pt100 sensor shown elsewhere in this catalogue.



- Nominal resistance: 100 ohms at 0°C, 138.5 ohms at 100°C
- Tolerance Classes available: B or A to IEC 60751 : 2008
- Temperature range: -100°C to 500°C
- Dimensions: 2mm long x 2mm wide x 0.4mm nominal thickness (excluding the blue lead attachment part)
- Leads: 10mm long (resistance value taken at 5mm from sensor body)

### Flat Film Pt100 Elements

Code No	Description
578-090	Class B
578-093	Class A

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## Thermocouple & RTD Cables

**We have a massive stock of  
Thermocouple & RTD Cable, with  
over one million metres of stock  
available for immediate delivery**

**Call us now on 01895 855555  
to discuss your requirements**

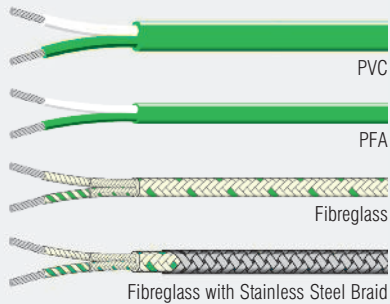




# Ex Stock Single Pair Thermocouple Cable

## Single Pair Thermocouple Extension and Compensating Cable - Laid Flat Construction

We supply 7/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA. Each conductor is insulated in either Heat Resistant PVC, PFA, Fibreglass or Fibreglass with Stainless Steel braiding overall. The cores are laid flat and then overall sheathed in the same material with an



optional stainless steel braiding for the fibreglass version. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- **7/0.2mm dia laid flat and overall sheathed construction**
- **Heat Resistant PVC rated to 105°C, PFA rated to 250°C and Fibreglass rated to 480°C**
- **Colour coded :-**
  - Type KX extension cable: green outer sheath, green positive core and white negative core**
  - Type KCB compensating cable: green outer sheath, green positive core and white negative core**
  - Type TX extension cable: brown outer sheath, brown positive core and white negative core**
  - Type JX extension cable: black outer sheath, black positive core and white negative core**
  - Type NX extension cable: pink outer sheath, pink positive core and white negative core**
  - Type RCA/SCA compensating cable: orange outer sheath, orange positive core and white negative core**
- **Available in a variety of lengths**
- **Easy connection to our range of sensors via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers**

### Type KX - Laid Flat Extension Cable

Code No	Description
818-152	25 metre reel - PVC
818-154	50 metre reel - PVC
818-156	100 metre reel - PVC
818-158	200 metre reel - PVC
818-162	25 metre reel - PFA
818-164	50 metre reel - PFA
818-166	100 metre reel - PFA
818-168	200 metre reel - PFA
818-172	25 metre reel - Fibreglass
818-174	50 metre reel - Fibreglass
818-176	100 metre reel - Fibreglass
818-178	200 metre reel - Fibreglass
819-002	25 metre reel - Fibreglass/St St Braided
819-004	50 metre reel - Fibreglass/St St Braided
819-006	100 metre reel - Fibreglass/St St Braided
819-008	200 metre reel - Fibreglass/St St Braided

### Type KCB - Laid Flat Compensation Cable

Code No	Description
818-184	25 metre reel - PVC
818-186	50 metre reel - PVC
818-188	100 metre reel - PVC
818-190	200 metre reel - PVC

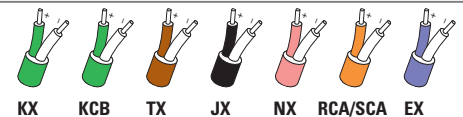
### Type TX - Laid Flat Extension Cable

Code No	Description
818-212	25 metre reel - PVC
818-214	50 metre reel - PVC
818-216	100 metre reel - PVC
818-218	200 metre reel - PVC
818-222	25 metre reel - PFA
818-224	50 metre reel - PFA
818-226	100 metre reel - PFA
818-228	200 metre reel - PFA
818-232	25 metre reel - Fibreglass
818-234	50 metre reel - Fibreglass
818-236	100 metre reel - Fibreglass
818-238	200 metre reel - Fibreglass
819-018	25 metre reel - Fibreglass/St St Braided
819-020	50 metre reel - Fibreglass/St St Braided
819-022	100 metre reel - Fibreglass/St St Braided
819-024	200 metre reel - Fibreglass/St St Braided

### Type JX - Laid Flat Extension Cable

Code No	Description
818-272	25 metre reel - PVC
818-274	50 metre reel - PVC
818-276	100 metre reel - PVC
818-278	200 metre reel - PVC
818-282	25 metre reel - PFA
818-284	50 metre reel - PFA
818-286	100 metre reel - PFA
818-288	200 metre reel - PFA
818-292	25 metre reel - Fibreglass
818-294	50 metre reel - Fibreglass
818-296	100 metre reel - Fibreglass
818-298	200 metre reel - Fibreglass
819-036	25 metre reel - Fibreglass/St St Braided
819-038	50 metre reel - Fibreglass/St St Braided
819-040	100 metre reel - Fibreglass/St St Braided
819-042	200 metre reel - Fibreglass/St St Braided

**Colour Codes available**  
to IEC 60584-3 : 2007  
(ANSI colours available on request)



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# Ex Stock Single Pair Thermocouple Cable

## Type NX - Laid Flat Extension Cable

Code No	Description
818-362	25 metre reel - PVC
818-364	50 metre reel - PVC
818-366	100 metre reel - PVC
818-368	200 metre reel - PVC
818-372	25 metre reel - PFA
818-374	50 metre reel - PFA
818-376	100 metre reel - PFA
818-378	200 metre reel - PFA
818-382	25 metre reel - Fibreglass
818-384	50 metre reel - Fibreglass
818-386	100 metre reel - Fibreglass
818-388	200 metre reel - Fibreglass
819-056	25 metre reel - Fibreglass/St St Braided
819-058	50 metre reel - Fibreglass/St St Braided
819-060	100 metre reel - Fibreglass/St St Braided
819-062	200 metre reel - Fibreglass/St St Braided

## Type RCA/SCA - Laid Flat Compensating Cable

Code No	Description
819-082	25 metre reel - PVC
819-084	50 metre reel - PVC
819-086	100 metre reel - PVC
819-088	200 metre reel - PVC
819-092	25 metre reel - PFA
819-094	50 metre reel - PFA
819-096	100 metre reel - PFA
819-098	200 metre reel - PFA
819-102	25 metre reel - Fibreglass
819-104	50 metre reel - Fibreglass
819-106	100 metre reel - Fibreglass
819-108	200 metre reel - Fibreglass
819-112	25 metre reel - Fibreglass/St St Braided
819-114	50 metre reel - Fibreglass/St St Braided
819-116	100 metre reel - Fibreglass/St St Braided
819-118	200 metre reel - Fibreglass/St St Braided

## TC Direct for Instant Temperature Measurement and Control

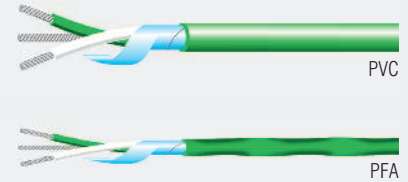
- Ex stock for immediate overnight delivery
- No minimum order value!
- Instant account facilities or payment by most major debit or credit cards
- Full technical support available
- No quibble guarantee on most products
- We are Quality registered to ISO 9001

## Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

## Single Pair Thermocouple Extension and Compensating Cable - Twisted Screened Construction

We supply 7/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA. Each conductor is insulated in either Heat Resistant PVC or PFA, the cores are then



twisted, screened with aluminium Mylar® tape and then overall sheathed in the same material. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- 7/0.2mm dia twisted pair, screened with aluminium Mylar® tape and overall sheathed construction
- Heat Resistant PVC rated to 105°C or PFA rated to 250°C
- Colour coded :-
  - Type KX: green outer sheath, green positive core and white negative core
  - Type KCB: green outer sheath, green positive core and white negative core
  - Type TX: brown outer sheath, brown positive core and white negative core
  - Type JX: black outer sheath, black positive core and white negative core
  - Type NX: pink outer sheath, pink positive core and white negative core
  - Type RCA/SCA: orange outer sheath, orange positive core and white neg. core
- Available in a variety of lengths
- Easy connection to our range of sensors via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers

## Type KX - Twisted Screened Extension Cable

Code No	Description
818-432	25 metre reel - PVC
818-434	50 metre reel - PVC
818-436	100 metre reel - PVC
818-438	200 metre reel - PVC
818-442	25 metre reel - PFA
818-444	50 metre reel - PFA
818-446	100 metre reel - PFA
818-448	200 metre reel - PFA

## Type KCB - Twisted Screened Compensating Cable

Code No	Description
818-462	25 metre reel - PVC
818-464	50 metre reel - PVC
818-466	100 metre reel - PVC
818-468	200 metre reel - PVC

continued overleaf

## Colour Codes available

to IEC 60584-3 : 2007  
(ANSI colours available on request)



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# Ex Stock Single Pair Thermocouple Cable

## Type TX - Twisted Screened Extension Cable

Code No Description

818-522	25 metre reel - PVC
818-524	50 metre reel - PVC
818-526	100 metre reel - PVC
818-528	200 metre reel - PVC
818-532	25 metre reel - PFA
818-534	50 metre reel - PFA
818-536	100 metre reel - PFA
818-538	200 metre reel - PFA

## Type JX - Twisted Screened Extension Cable

Code No Description

818-652	25 metre reel - PVC
818-654	50 metre reel - PVC
818-656	100 metre reel - PVC
818-658	200 metre reel - PVC
818-662	25 metre reel - PFA
818-664	50 metre reel - PFA
818-666	100 metre reel - PFA
818-668	200 metre reel - PFA

## Type NX - Twisted Screened Extension Cable

Code No Description

818-702	25 metre reel - PVC
818-704	50 metre reel - PVC
818-706	100 metre reel - PVC
818-708	200 metre reel - PVC
818-712	25 metre reel - PFA
818-714	50 metre reel - PFA
818-716	100 metre reel - PFA
818-718	200 metre reel - PFA

## Type RCA/SCA - Twisted Screened Compensating Cable

Code No Description

818-752	25 metre reel - PVC
818-754	50 metre reel - PVC
818-756	100 metre reel - PVC
818-758	200 metre reel - PVC
818-762	25 metre reel - PFA
818-764	50 metre reel - PFA
818-766	100 metre reel - PFA
818-768	200 metre reel - PFA

### Ex Stock Delivery !

If you need to measure temperature, you'll find our vast range of products Ex Stock for immediate overnight delivery!

### Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

## Single Pair Flame Retardant Silicone Rubber Thermocouple Extension and Compensating Cable Twisted Screened Construction

We supply Silicone Rubber cable with 7/0.3mm dia conductors in thermocouple cable types KX, KCB, TX, JX,



NX or RCA/SCA. Each conductor is insulated in Silicone Rubber. The cores are then twisted, screened with Mylar® tape, nickel plated copper wire braided and then overall sheathed in Silicone Rubber. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulating material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- **Single pair, 7/0.3mm dia twisted, screened with Mylar® tape, nickel plated copper wire braided and overall sheathed construction**
- **Silicone Rubber rated to -40°C to 200°C (or 250°C short term)**
- **Colour coded:-**
  - Type KX green outer sheath, green positive core and white negative core**
  - Type KCB green outer sheath, green positive core and white negative core**
  - Type TX brown outer sheath, brown positive core and white negative core**
  - Type JX black outer sheath, black positive core and white negative core**
  - Type NX pink outer sheath, pink positive core and white negative core**
  - Type RCA/SCA orange outer sheath, orange positive core and white neg. core**
- **Available in a variety of lengths**
- **Easy connection to our range of sensors via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers**

## Type KX Silicone Rubber Single Pair Extension Cable

Code No Description

819-202	25 metre reel
819-204	50 metre reel
819-206	100 metre reel
819-208	200 metre reel

## Type KCB Silicone Rubber Single Pair Compensating Cable

Code No Description

819-222	25 metre reel
819-224	50 metre reel
819-226	100 metre reel
819-228	200 metre reel

## Type TX Silicone Rubber Single Pair Extension Cable

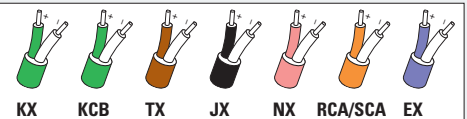
Code No Description

819-242	25 metre reel
819-244	50 metre reel
819-246	100 metre reel
819-248	200 metre reel

### Colour Codes available

to IEC 60584-3 : 2007

(ANSI colours available on request)



For advice, call one of our experienced engineers on:

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# Ex Stock Single Pair Thermocouple Cable

## Type JX Silicone Rubber Single Pair Extension Cable

Code No Description

819-262	25 metre reel
819-264	50 metre reel
819-266	100 metre reel
819-268	200 metre reel

## Type KX Armoured Single Pair Extension Cable

Code No Description

819-412	25 metre reel
819-414	50 metre reel
819-416	100 metre reel
819-418	200 metre reel

## Type NX Silicone Rubber Single Pair Extension Cable

Code No Description

819-282	25 metre reel
819-284	50 metre reel
819-286	100 metre reel
819-288	200 metre reel

## Type KCB Armoured Single Pair Compensating Cable

Code No Description

819-432	25 metre reel
819-434	50 metre reel
819-436	100 metre reel
819-438	200 metre reel

## Type RCA/SCA Silicone Rubber Single Pair Compensating Cable

Code No Description

819-302	25 metre reel
819-304	50 metre reel
819-306	100 metre reel
819-308	200 metre reel

## Type TX Armoured Single Pair Extension Cable

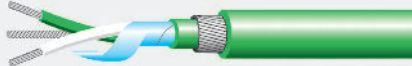
Code No Description

819-452	25 metre reel
819-454	50 metre reel
819-456	100 metre reel
819-458	200 metre reel

## Single Pair Steel Wire Armoured PVC Thermocouple Extension and Compensating Cable

We supply single pair

16/0.2mm dia armoured cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA. Each conductor is



insulated in flame retardant PVC, the pair is then twisted, screened with aluminium Mylar® tape, flame retardant PVC sheathed, steel wire armoured then flame retardant PVC sheathed overall. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- **Single pair 16/0.2mm dia FR PVC insulated, twisted, screened with aluminium Mylar® tape, FR PVC sheathed, steel wire armoured and overall FR PVC sheathed construction**
- **Flame retardant PVC rated to 80°C**
- **Colour coded:-**
  - Type KX green outer sheath, green positive core and white negative core**
  - Type KCB green outer sheath, green positive core and white negative core**
  - Type TX brown outer sheath, brown positive core and white negative core**
  - Type JX black outer sheath, black positive core and white negative core**
  - Type NX pink outer sheath, pink positive core and white negative core**
  - Type RCA/SCA orange outer sheath, orange positive core and white neg. core**
- **Available in a variety of lengths**
- **Easy connection to other equipment via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers**

## Type JX Armoured Single Pair Extension Cable

Code No Description

819-472	25 metre reel
819-474	50 metre reel
819-476	100 metre reel
819-478	200 metre reel

## Type NX Armoured Single Pair Extension Cable

Code No Description

819-492	25 metre reel
819-494	50 metre reel
819-496	100 metre reel
819-498	200 metre reel

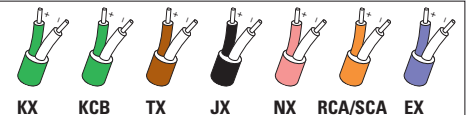
## Type RCA/SCA Armoured Single Pair Compensation Cable

Code No Description

819-512	25 metre reel
819-514	50 metre reel
819-516	100 metre reel
819-518	200 metre reel

Colour Codes available to IEC 60584-3 : 2007

(ANSI colours available on request)



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# Ex Stock Single Pair Thermocouple Cable

## PFA Insulated and Twisted Single Pair Thermocouple Cable

Supplied as either a single solid conductor of 0.2mm or 0.3mm diameter, this PFA insulated thermocouple cable is ideal for higher temperature applications up to

250°C or for use at cryogenic temperatures

down to -75°C. Consisting of a single pair of conductors insulated and twisted together, this type of cable is suitable for extending thermocouples or for making simple thermocouple sensors. PFA will withstand attack from virtually all known chemicals, oils and fluids and this cable is made in an extruded form making it impervious to gas, steam and water ingress and is suitable for applications such as autoclaves or sterilizers.

- 1/0.2mm or 1/0.3mm dia conductor twisted pair construction
- PFA insulated
- Temperature range: -75°C to +250°C
- Resistant to chemicals, oils and fluids
- Colour coded :-

**Type KX extension cable: green positive and white negative**

**Type JX extension cable: black positive and white negative**

**Type TX extension cable: brown positive and white negative**

**Type NX extension cable: pink positive and white negative**



### Type KX - 1/0.3mm PFA Insulated and Twisted

Code No Description

818-068	25 metre reel - PFA Twisted
818-071	50 metre reel - PFA Twisted
818-074	100 metre reel - PFA Twisted
818-077	200 metre reel - PFA Twisted

### Type JX - 1/0.3mm PFA Insulated and Twisted

Code No Description

818-083	25 metre reel - PFA Twisted
818-086	50 metre reel - PFA Twisted
818-089	100 metre reel - PFA Twisted
818-092	200 metre reel - PFA Twisted

### Type TX - 1/0.3mm PFA Insulated and Twisted

Code No Description

818-098	25 metre reel - PFA Twisted
818-101	50 metre reel - PFA Twisted
818-104	100 metre reel - PFA Twisted
818-107	200 metre reel - PFA Twisted

### Type NX - 1/0.3mm PFA Insulated and Twisted

Code No Description

818-113	25 metre reel - PFA Twisted
818-116	50 metre reel - PFA Twisted
818-119	100 metre reel - PFA Twisted
818-122	200 metre reel - PFA Twisted

### Type KX - 1/0.2mm PFA Insulated and Twisted

Code No Description

818-006	25 metre reel - PFA Twisted
818-009	50 metre reel - PFA Twisted
818-012	100 metre reel - PFA Twisted
818-015	200 metre reel - PFA Twisted

### Type JX - 1/0.2mm PFA Insulated and Twisted

Code No Description

818-021	25 metre reel - PFA Twisted
818-024	50 metre reel - PFA Twisted
818-027	100 metre reel - PFA Twisted
818-030	200 metre reel - PFA Twisted

### Type TX - 1/0.2mm PFA Insulated and Twisted

Code No Description

818-038	25 metre reel - PFA Twisted
818-041	50 metre reel - PFA Twisted
818-044	100 metre reel - PFA Twisted
818-047	200 metre reel - PFA Twisted

### Type NX - 1/0.2mm PFA Insulated and Twisted

Code No Description

818-053	25 metre reel - PFA Twisted
818-056	50 metre reel - PFA Twisted
818-059	100 metre reel - PFA Twisted
818-062	200 metre reel - PFA Twisted

## Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.



## Did you know ?

**We have the largest stock of Thermocouple & RTD Cable in Europe, with over one million metres of stock available for immediate delivery**

**Please call us on 01895 855555 to discuss your requirements**

**For advice, call one of our experienced engineers on:**



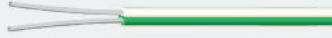
**01895 855555**

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# Ex Stock Single Pair Thermocouple Cable

## PTFE Insulated 'Single Shot' Thermocouple Cable

One pair of solid 0.376mm diameter conductors are laid flat and PTFE sheathed in a 'single shot' construction in either circular or oval versions. This cable provides a gas, steam and water tight insulation even under pressure or vacuum. This cable is ideally suited to autoclave and aerospace applications and is resistant to virtually all known chemicals, oils and fluids. It has a wide operating temperature range and is also particularly suited to cryogenic applications. This cable is available in both a circular and an oval section.



- Thermocouple types K, T, J
- 0.376mm dia solid conductor
- Operating range: -75°C to +250°C
- PTFE insulated single shot construction, circular or oval construction
- Resistant to chemicals, oils and fluids
- Widely used in autoclave applications
- Colour coded :-  
Type KX extension cable: green / white  
Type JX extension cable: black / white  
Type TX extension cable: brown / white
- Suitable for aerospace applications

### Type KX - 1/0.376mm PTFE Single Shot Cable Circular

Code No	Description
817-006	25 metre reel - Circular Section
817-009	50 metre reel - Circular Section
817-012	100 metre reel - Circular Section
817-015	200 metre reel - Circular Section

### Type JX - 1/0.376mm PTFE Single Shot Cable Circular

Code No	Description
817-021	25 metre reel - Circular Section
817-024	50 metre reel - Circular Section
817-027	100 metre reel - Circular Section
817-030	200 metre reel - Circular Section

### Type TX - 1/0.376mm PTFE Single Shot Cable Circular

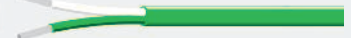
Code No	Description
817-036	25 metre reel - Circular Section
817-039	50 metre reel - Circular Section
817-042	100 metre reel - Circular Section
817-045	200 metre reel - Circular Section

### Type KX - 1/0.376mm PTFE Single Shot Cable Oval

Code No	Description
817-106	25 metre reel - Oval Section
817-109	50 metre reel - Oval Section
817-112	100 metre reel - Oval Section
817-115	200 metre reel - Oval Section

## PFA Insulated Laid Flat Construction Thermocouple Cable

One pair of solid 0.5mm diameter conductors are PFA insulated, laid flat and PFA sheathed. This cable is ideally suited for a variety of applications including the refrigeration industry where it's construction allows it to be passed reliably through door seals. PFA will withstand attack from virtually all known chemicals, oils and fluids and this cable is made in an extruded form making it impervious to gas, steam and water ingress and is suitable for applications such as autoclaves or sterilizers.



- 1/0.5mm dia conductor flat pair construction
- PFA insulated
- Temperature range: -75°C to +250°C
- Resistant to chemicals, oils and fluids
- Colour coded :-  
Type KX extension cable: green outer sheath, green positive and white negative  
Type JX extension cable: black outer sheath, black positive and white negative  
Type TX extension cable: brown outer sheath, brown positive and white negative  
Type NX pink outer sheath, pink positive core and white negative core
- Widely used in refrigeration applications

### Type KX - 1/0.5mm PFA Insulated Laid Flat Cable

Code No	Description
817-206	25 metre reel
817-209	50 metre reel
817-212	100 metre reel
817-215	200 metre reel

### Type JX - 1/0.5mm PFA Insulated Laid Flat Cable

Code No	Description
817-221	25 metre reel
817-224	50 metre reel
817-227	100 metre reel
817-230	200 metre reel

### Type TX - 1/0.5mm PFA Insulated Laid Flat Cable

Code No	Description
817-236	25 metre reel
817-239	50 metre reel
817-242	100 metre reel
817-245	200 metre reel

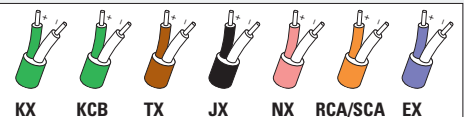
### Type NX - 1/0.5mm PFA Insulated Laid Flat Cable

Code No	Description
817-253	25 metre reel
817-256	50 metre reel
817-259	100 metre reel
817-262	200 metre reel

#### Colour Codes available

to IEC 60584-3 : 2007

(ANSI colours available on request)



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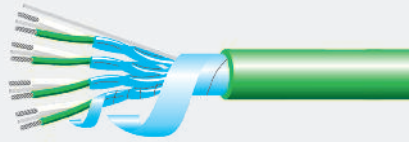
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# Ex Stock Non Armoured Multipair Thermocouple Cable

## Non Armoured 16/0.2mm Multipair Thermocouple Extension and Compensating Cable

We supply multipair 16/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA.



Each conductor is insulated in flame retardant PVC, pairs are then twisted, screened with aluminium Mylar® tape, bunched together, overall screened with aluminium Mylar® tape and flame retardant PVC sheathed overall. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- Available in either 2, 4, 6, 8, 12, 16, 20 or 24 pairs
- Multipair 16/0.2mm dia FR PVC insulated, twisted pairs, screened with aluminium Mylar® tape, pairs bunched, screened with aluminium Mylar® tape, FR PVC overall sheathed construction
- Flame retardant PVC rated to 80°C
- Colour coded:-
  - Type KX: Green outer sheath, green positive core and white negative core
  - Type KCB: Green outer sheath, green positive core and white negative core
  - Type TX: Brown outer sheath, brown positive core and white negative core
  - Type JX: Black outer sheath, black positive core and white negative core
  - Type NX: Pink outer sheath, pink positive core and white negative core
  - Type RCA/SCA: Orange outer sheath, orange positive core and white neg. core

### Type KX - Non Armoured Multipair Extension Cable

Code No	Description
824-012	25 metre reel - 2 pair
824-014	50 metre reel - 2 pair
824-016	100 metre reel - 2 pair
824-018	200 metre reel - 2 pair
824-022	25 metre reel - 4 pair
824-024	50 metre reel - 4 pair
824-026	100 metre reel - 4 pair
824-028	200 metre reel - 4 pair
824-032	25 metre reel - 6 pair
824-034	50 metre reel - 6 pair
824-036	100 metre reel - 6 pair
824-038	200 metre reel - 6 pair
825-063	25 metre reel - 8 pair
825-065	50 metre reel - 8 pair
825-067	100 metre reel - 8 pair
825-069	200 metre reel - 8 pair
824-042	25 metre reel - 12 pair
824-044	50 metre reel - 12 pair
824-046	100 metre reel - 12 pair
824-048	200 metre reel - 12 pair
825-083	25 metre reel - 16 pair
825-085	50 metre reel - 16 pair
825-087	100 metre reel - 16 pair
825-089	200 metre reel - 16 pair
825-103	25 metre reel - 20 pair
825-105	50 metre reel - 20 pair
825-107	100 metre reel - 20 pair
825-109	200 metre reel - 20 pair
824-052	25 metre reel - 24 pair
824-054	50 metre reel - 24 pair
824-056	100 metre reel - 24 pair
824-058	200 metre reel - 24 pair

### Type KCB - Non Armoured Multipair Compensating Cable

Code No	Description
824-084	25 metre reel - 2 pair
824-086	50 metre reel - 2 pair
824-088	100 metre reel - 2 pair
824-090	200 metre reel - 2 pair
824-094	25 metre reel - 4 pair
824-096	50 metre reel - 4 pair
824-098	100 metre reel - 4 pair
824-100	200 metre reel - 4 pair
824-104	25 metre reel - 6 pair
824-106	50 metre reel - 6 pair
824-108	100 metre reel - 6 pair
824-110	200 metre reel - 6 pair
825-123	25 metre reel - 8 pair
825-125	50 metre reel - 8 pair
825-127	100 metre reel - 8 pair
825-129	200 metre reel - 8 pair
824-114	25 metre reel - 12 pair
824-116	50 metre reel - 12 pair
824-118	100 metre reel - 12 pair
824-120	200 metre reel - 12 pair
825-143	25 metre reel - 16 pair
825-145	50 metre reel - 16 pair
825-147	100 metre reel - 16 pair
825-149	200 metre reel - 16 pair
825-163	25 metre reel - 20 pair
825-165	50 metre reel - 20 pair
825-167	100 metre reel - 20 pair
825-169	200 metre reel - 20 pair
824-124	25 metre reel - 24 pair
824-126	50 metre reel - 24 pair
824-128	100 metre reel - 24 pair
824-130	200 metre reel - 24 pair

### Type TX - Non Armoured Multipair Extension Cable

Code No	Description
824-150	25 metre reel - 2 pair
824-152	50 metre reel - 2 pair
824-154	100 metre reel - 2 pair
824-156	200 metre reel - 2 pair
824-160	25 metre reel - 4 pair
824-162	50 metre reel - 4 pair
824-164	100 metre reel - 4 pair
824-166	200 metre reel - 4 pair
824-170	25 metre reel - 6 pair
824-172	50 metre reel - 6 pair
824-174	100 metre reel - 6 pair
824-176	200 metre reel - 6 pair
825-183	25 metre reel - 8 pair
825-185	50 metre reel - 8 pair
825-187	100 metre reel - 8 pair
825-189	200 metre reel - 8 pair
824-180	25 metre reel - 12 pair
824-182	50 metre reel - 12 pair
824-184	100 metre reel - 12 pair
824-186	200 metre reel - 12 pair
825-203	25 metre reel - 16 pair
825-205	50 metre reel - 16 pair
825-207	100 metre reel - 16 pair
825-209	200 metre reel - 16 pair

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# Ex Stock Non Armoured Multipair Thermocouple Cable

## Type TX - Non Armoured Multipair Extension Cable (Continued)

Code No	Description
825-223	25 metre reel - 20 pair
825-225	50 metre reel - 20 pair
825-227	100 metre reel - 20 pair
825-229	200 metre reel - 20 pair
824-190	25 metre reel - 24 pair
824-192	50 metre reel - 24 pair
824-194	100 metre reel - 24 pair
824-196	200 metre reel - 24 pair

## Type JX - Non Armoured Multipair Extension Cable

Code No	Description
824-208	25 metre reel - 2 pair
824-210	50 metre reel - 2 pair
824-212	100 metre reel - 2 pair
824-214	200 metre reel - 2 pair
824-218	25 metre reel - 4 pair
824-220	50 metre reel - 4 pair
824-222	100 metre reel - 4 pair
824-224	200 metre reel - 4 pair
824-228	25 metre reel - 6 pair
824-230	50 metre reel - 6 pair
824-232	100 metre reel - 6 pair
824-234	200 metre reel - 6 pair
825-243	25 metre reel - 8 pair
825-245	50 metre reel - 8 pair
825-247	100 metre reel - 8 pair
825-249	200 metre reel - 8 pair
824-238	25 metre reel - 12 pair
824-240	50 metre reel - 12 pair
824-242	100 metre reel - 12 pair
824-244	200 metre reel - 12 pair
825-263	25 metre reel - 16 pair
825-265	50 metre reel - 16 pair
825-267	100 metre reel - 16 pair
825-269	200 metre reel - 16 pair
825-283	25 metre reel - 20 pair
825-285	50 metre reel - 20 pair
825-287	100 metre reel - 20 pair
825-289	200 metre reel - 20 pair
824-248	25 metre reel - 24 pair
824-250	50 metre reel - 24 pair
824-252	100 metre reel - 24 pair
824-254	200 metre reel - 24 pair

## Type NX - Non Armoured Multipair Extension Cable

Code No	Description
824-274	25 metre reel - 2 pair
824-276	50 metre reel - 2 pair
824-278	100 metre reel - 2 pair
824-280	200 metre reel - 2 pair
824-284	25 metre reel - 4 pair
824-286	50 metre reel - 4 pair
824-288	100 metre reel - 4 pair
824-290	200 metre reel - 4 pair
824-294	25 metre reel - 6 pair
824-296	50 metre reel - 6 pair
824-298	100 metre reel - 6 pair
824-300	200 metre reel - 6 pair

## Type NX - Non Armoured Multipair Extension Cable

Code No	Description
825-303	25 metre reel - 8 pair
825-305	50 metre reel - 8 pair
825-307	100 metre reel - 8 pair
825-309	200 metre reel - 8 pair
824-304	25 metre reel - 12 pair
824-306	50 metre reel - 12 pair
824-308	100 metre reel - 12 pair
824-310	200 metre reel - 12 pair
825-323	25 metre reel - 16 pair
825-325	50 metre reel - 16 pair
825-327	100 metre reel - 16 pair
825-329	200 metre reel - 16 pair
825-343	25 metre reel - 20 pair
825-345	50 metre reel - 20 pair
825-347	100 metre reel - 20 pair
825-349	200 metre reel - 20 pair
824-314	25 metre reel - 24 pair
824-316	50 metre reel - 24 pair
824-318	100 metre reel - 24 pair
824-320	200 metre reel - 24 pair

## Type RCA/SCA - Non Armoured Multipair Compensating Cable

Code No	Description
824-338	25 metre reel - 2 pair
824-340	50 metre reel - 2 pair
824-342	100 metre reel - 2 pair
824-344	200 metre reel - 2 pair
824-348	25 metre reel - 4 pair
824-350	50 metre reel - 4 pair
824-352	100 metre reel - 4 pair
824-354	200 metre reel - 4 pair
824-358	25 metre reel - 6 pair
824-360	50 metre reel - 6 pair
824-362	100 metre reel - 6 pair
824-364	200 metre reel - 6 pair
825-363	25 metre reel - 8 pair
825-365	50 metre reel - 8 pair
825-367	100 metre reel - 8 pair
825-369	200 metre reel - 8 pair
824-368	25 metre reel - 12 pair
824-370	50 metre reel - 12 pair
824-372	100 metre reel - 12 pair
824-374	200 metre reel - 12 pair
825-383	25 metre reel - 16 pair
825-385	50 metre reel - 16 pair
825-387	100 metre reel - 16 pair
825-389	200 metre reel - 16 pair
825-403	25 metre reel - 20 pair
825-405	50 metre reel - 20 pair
825-407	100 metre reel - 20 pair
825-409	200 metre reel - 20 pair
824-378	25 metre reel - 24 pair
824-380	50 metre reel - 24 pair
824-382	100 metre reel - 24 pair
824-384	200 metre reel - 24 pair

**Any length you like !**

We can cut cable to meet your requirements.  
Call us on **01895 855555** for an immediate quotation.

**Fax: 01895 857777**

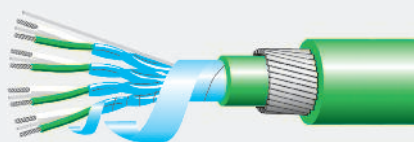
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Armoured Multipair Thermocouple Cable

## Steel Wire Armoured 16/0.2mm Multipair Thermocouple Extension and Compensating Cable

We supply multipair 16/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, KCB, TX, JX, NX or RCA/SCA.



Each conductor is insulated in flame retardant PVC, pairs are then twisted, screened with aluminium Mylar® tape, bunched together, overall screened with aluminium Mylar® tape, flame retardant PVC sheathed, steel wire armoured then flame retardant PVC sheathed overall. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.

- Available in either 2, 4, 6, 8, 12, 16, 20 or 24 pairs
- Multipair 16/0.2mm dia FR PVC insulated, twisted pairs, screened with aluminium Mylar® tape, pairs bunched, screened with aluminium Mylar® tape, FR PVC sheathed, steel wire armoured and overall FR PVC sheathed
- Flame retardant PVC rated to 80°C
- Colour coded:-
  - Type KX: Green outer sheath, green positive core and white negative core
  - Type KCB: Green outer sheath, green positive core and white negative core
  - Type TX: Brown outer sheath, brown positive core and white negative core
  - Type JX: Black outer sheath, black positive core and white negative core
  - Type NX: Pink outer sheath, pink positive core and white negative core
  - Type RCA/SCA: Orange outer sheath, orange positive core and white neg. core

### Type KX - Armoured Multipair Extension Cable

Code No	Description
824-410	25 metre reel - 2 pair
824-412	50 metre reel - 2 pair
824-414	100 metre reel - 2 pair
824-416	200 metre reel - 2 pair
824-420	25 metre reel - 4 pair
824-422	50 metre reel - 4 pair
824-424	100 metre reel - 4 pair
824-426	200 metre reel - 4 pair
824-430	25 metre reel - 6 pair
824-432	50 metre reel - 6 pair
824-434	100 metre reel - 6 pair
824-436	200 metre reel - 6 pair
825-423	25 metre reel - 8 pair
825-425	50 metre reel - 8 pair
825-427	100 metre reel - 8 pair
825-429	200 metre reel - 8 pair
824-440	25 metre reel - 12 pair
824-442	50 metre reel - 12 pair
824-444	100 metre reel - 12 pair
824-446	200 metre reel - 12 pair
825-443	25 metre reel - 16 pair
825-445	50 metre reel - 16 pair
825-447	100 metre reel - 16 pair
825-449	200 metre reel - 16 pair
825-463	25 metre reel - 20 pair
825-465	50 metre reel - 20 pair
825-467	100 metre reel - 20 pair
825-469	200 metre reel - 20 pair
824-450	25 metre reel - 24 pair
824-452	50 metre reel - 24 pair
824-454	100 metre reel - 24 pair
824-456	200 metre reel - 24 pair

### Type KCB - Armoured Multipair Compensating Cable

Code No	Description
824-470	25 metre reel - 2 pair
824-472	50 metre reel - 2 pair
824-474	100 metre reel - 2 pair
824-476	200 metre reel - 2 pair
824-480	25 metre reel - 4 pair
824-482	50 metre reel - 4 pair
824-484	100 metre reel - 4 pair
824-486	200 metre reel - 4 pair
824-490	25 metre reel - 6 pair
824-492	50 metre reel - 6 pair
824-494	100 metre reel - 6 pair
824-496	200 metre reel - 6 pair
825-483	25 metre reel - 8 pair
825-485	50 metre reel - 8 pair
825-487	100 metre reel - 8 pair
825-489	200 metre reel - 8 pair
824-500	25 metre reel - 12 pair
824-502	50 metre reel - 12 pair
824-504	100 metre reel - 12 pair
824-506	200 metre reel - 12 pair
825-503	25 metre reel - 16 pair
825-505	50 metre reel - 16 pair
825-507	100 metre reel - 16 pair
825-509	200 metre reel - 16 pair
825-523	25 metre reel - 20 pair
825-525	50 metre reel - 20 pair
825-527	100 metre reel - 20 pair
825-529	200 metre reel - 20 pair
824-510	25 metre reel - 24 pair
824-512	50 metre reel - 24 pair
824-514	100 metre reel - 24 pair
824-516	200 metre reel - 24 pair

### Type TX - Armoured Multipair Extension Cable

Code No	Description
824-526	25 metre reel - 2 pair
824-528	50 metre reel - 2 pair
824-530	100 metre reel - 2 pair
824-532	200 metre reel - 2 pair
824-536	25 metre reel - 4 pair
824-538	50 metre reel - 4 pair
824-540	100 metre reel - 4 pair
824-542	200 metre reel - 4 pair
824-546	25 metre reel - 6 pair
824-548	50 metre reel - 6 pair
824-550	100 metre reel - 6 pair
824-552	200 metre reel - 6 pair
825-543	25 metre reel - 8 pair
825-545	50 metre reel - 8 pair
825-547	100 metre reel - 8 pair
825-549	200 metre reel - 8 pair
824-556	25 metre reel - 12 pair
824-558	50 metre reel - 12 pair
824-560	100 metre reel - 12 pair
824-562	200 metre reel - 12 pair
825-563	25 metre reel - 16 pair
825-565	50 metre reel - 16 pair
825-567	100 metre reel - 16 pair
825-569	200 metre reel - 16 pair

For advice, call one of our experienced engineers on:

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# Ex Stock Armoured Multipair Thermocouple Cable

## Type TX - Armoured Multipair Extension Cable (Continued)

Code No	Description
825-583	25 metre reel - 20 pair
825-585	50 metre reel - 20 pair
825-587	100 metre reel - 20 pair
825-589	200 metre reel - 20 pair
824-566	25 metre reel - 24 pair
824-568	50 metre reel - 24 pair
824-570	100 metre reel - 24 pair
824-572	200 metre reel - 24 pair

## Type JX - Armoured Multipair Extension Cable

Code No	Description
824-592	25 metre reel - 2 pair
824-594	50 metre reel - 2 pair
824-596	100 metre reel - 2 pair
824-598	200 metre reel - 2 pair
824-602	25 metre reel - 4 pair
824-604	50 metre reel - 4 pair
824-606	100 metre reel - 4 pair
824-608	200 metre reel - 4 pair
824-612	25 metre reel - 6 pair
824-614	50 metre reel - 6 pair
824-616	100 metre reel - 6 pair
824-618	200 metre reel - 6 pair
825-603	25 metre reel - 8 pair
825-605	50 metre reel - 8 pair
825-607	100 metre reel - 8 pair
825-609	200 metre reel - 8 pair
824-622	25 metre reel - 12 pair
824-624	50 metre reel - 12 pair
824-626	100 metre reel - 12 pair
824-628	200 metre reel - 12 pair
825-623	25 metre reel - 16 pair
825-625	50 metre reel - 16 pair
825-627	100 metre reel - 16 pair
825-629	200 metre reel - 16 pair
825-643	25 metre reel - 20 pair
825-645	50 metre reel - 20 pair
825-647	100 metre reel - 20 pair
825-649	200 metre reel - 20 pair
824-632	25 metre reel - 24 pair
824-634	50 metre reel - 24 pair
824-636	100 metre reel - 24 pair
824-638	200 metre reel - 24 pair

## Type NX - Armoured Multipair Extension Cable

Code No	Description
824-650	25 metre reel - 2 pair
824-652	50 metre reel - 2 pair
824-654	100 metre reel - 2 pair
824-656	200 metre reel - 2 pair
824-660	25 metre reel - 4 pair
824-662	50 metre reel - 4 pair
824-664	100 metre reel - 4 pair
824-666	200 metre reel - 4 pair
824-670	25 metre reel - 6 pair
824-672	50 metre reel - 6 pair
824-674	100 metre reel - 6 pair
824-676	200 metre reel - 6 pair

## Type NX - Armoured Multipair Extension Cable

Code No	Description
825-663	25 metre reel - 8 pair
825-665	50 metre reel - 8 pair
825-667	100 metre reel - 8 pair
825-669	200 metre reel - 8 pair
824-680	25 metre reel - 12 pair
824-682	50 metre reel - 12 pair
824-684	100 metre reel - 12 pair
824-686	200 metre reel - 12 pair
825-683	25 metre reel - 16 pair
825-685	50 metre reel - 16 pair
825-687	100 metre reel - 16 pair
825-689	200 metre reel - 16 pair
825-703	25 metre reel - 20 pair
825-705	50 metre reel - 20 pair
825-707	100 metre reel - 20 pair
825-709	200 metre reel - 20 pair
824-690	25 metre reel - 24 pair
824-692	50 metre reel - 24 pair
824-694	100 metre reel - 24 pair
824-696	200 metre reel - 24 pair

## Type RCA/SCA - Armoured Multipair Compensating Cable

Code No	Description
824-706	25 metre reel - 2 pair
824-708	50 metre reel - 2 pair
824-710	100 metre reel - 2 pair
824-712	200 metre reel - 2 pair
824-716	25 metre reel - 4 pair
824-718	50 metre reel - 4 pair
824-720	100 metre reel - 4 pair
824-722	200 metre reel - 4 pair
824-726	25 metre reel - 6 pair
824-728	50 metre reel - 6 pair
824-730	100 metre reel - 6 pair
824-732	200 metre reel - 6 pair
825-723	25 metre reel - 8 pair
825-725	50 metre reel - 8 pair
825-727	100 metre reel - 8 pair
825-729	200 metre reel - 8 pair
824-736	25 metre reel - 12 pair
824-738	50 metre reel - 12 pair
824-740	100 metre reel - 12 pair
824-742	200 metre reel - 12 pair
825-743	25 metre reel - 16 pair
825-745	50 metre reel - 16 pair
825-747	100 metre reel - 16 pair
825-749	200 metre reel - 16 pair
825-763	25 metre reel - 20 pair
825-765	50 metre reel - 20 pair
825-767	100 metre reel - 20 pair
825-769	200 metre reel - 20 pair
824-746	25 metre reel - 24 pair
824-748	50 metre reel - 24 pair
824-750	100 metre reel - 24 pair
824-752	200 metre reel - 24 pair

**Any length you like !**

We can cut cable to meet your requirements.  
Call us on **01895 855555** for an immediate quotation.

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# Ex Stock Multipair Thermocouple Cable

## Non Armoured 7/0.2mm Multipair Type K Thermocouple Extension and Compensating Cable

We supply multipair 7/0.2mm dia cable in 10, 25, 50, 100 or 200 metre lengths in thermocouple cable types KX and KCB. Each conductor is insulated in flame retardant PVC, pairs are then twisted, screened with aluminium Mylar® tape, bunched together, overall screened with aluminium Mylar® tape and flame retardant PVC sheathed overall. Conductors (except for type KCB) are made from the relevant thermocouple material and meet IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.



- Available in either 2, 6, or 12 pairs
- Multipair 7/0.2mm dia FR PVC insulated, twisted pairs, screened with aluminium Mylar® tape, pairs bunched, screened with aluminium Mylar® tape, FR PVC overall sheathed construction
- Flame retardant PVC rated to 80°C
- Colour coded:-  
**Type KX: Green outer sheath, green positive core and white negative core**  
**Type KCB: Green outer sheath, green positive core and white negative core**
- Available in a variety of lengths
- Easy connection to other equipment via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers

### Type KX - Non Armoured Multipair Extension Cable

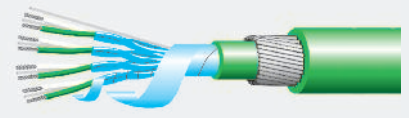
Code No	Description
822-010	10 metre reel - 2 pair
822-012	25 metre reel - 2 pair
822-014	50 metre reel - 2 pair
822-016	100 metre reel - 2 pair
822-018	200 metre reel - 2 pair
822-020	10 metre reel - 6 pair
822-022	25 metre reel - 6 pair
822-024	50 metre reel - 6 pair
822-026	100 metre reel - 6 pair
822-028	200 metre reel - 6 pair
822-030	10 metre reel - 12 pair
822-032	25 metre reel - 12 pair
822-034	50 metre reel - 12 pair
822-036	100 metre reel - 12 pair
822-038	200 metre reel - 12 pair

### Type KCB - Non Armoured Multipair Compensating Cable

Code No	Description
822-080	10 metre reel - 2 pair
822-082	25 metre reel - 2 pair
822-084	50 metre reel - 2 pair
822-086	100 metre reel - 2 pair
822-088	200 metre reel - 2 pair
822-090	10 metre reel - 6 pair
822-092	25 metre reel - 6 pair
822-094	50 metre reel - 6 pair
822-096	100 metre reel - 6 pair
822-098	200 metre reel - 6 pair
822-100	10 metre reel - 12 pair
822-102	25 metre reel - 12 pair
822-104	50 metre reel - 12 pair
822-106	100 metre reel - 12 pair
822-108	200 metre reel - 12 pair

## Steel Wire Armoured 7/0.2mm Multipair Type K Thermocouple Extension and Compensating Cable

We supply multipair 7/0.2mm dia cable in 10, 25, 50, 100 or 200 metre lengths in thermocouple cable types KX and KCB. Each conductor is insulated in flame retardant PVC, pairs are then twisted, screened with aluminium Mylar® tape, bunched together, overall screened with aluminium Mylar® tape, flame retardant PVC sheathed, steel wire armoured then flame retardant PVC sheathed overall. Conductors (except for type KCB) are made from the relevant thermocouple material and meet IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. The insulation material is colour coded to IEC 60584-3 : 2007 as shown below.



- Available in either 2, 6, or 12 pairs
- Multipair 7/0.2mm dia FR PVC insulated, twisted pairs, screened with aluminium Mylar® tape, pairs bunched, screened with aluminium Mylar® tape, FR PVC sheathed, steel wire armoured and overall FR PVC sheathed
- Flame retardant PVC rated to 80°C
- Colour coded:-  
**Type KX: Green outer sheath, green positive core and white negative core**  
**Type KCB: Green outer sheath, green positive core and white negative core**
- Available in a variety of lengths
- Easy connection to other equipment via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers

### Type KX - Armoured Multipair Extension Cable

Code No	Description
826-010	10 metre reel - 2 pair
826-012	25 metre reel - 2 pair
826-014	50 metre reel - 2 pair
826-016	100 metre reel - 2 pair
826-018	200 metre reel - 2 pair
826-020	10 metre reel - 6 pair
826-022	25 metre reel - 6 pair
826-024	50 metre reel - 6 pair
826-026	100 metre reel - 6 pair
826-028	200 metre reel - 6 pair
826-030	10 metre reel - 12 pair
826-032	25 metre reel - 12 pair
826-034	50 metre reel - 12 pair
826-036	100 metre reel - 12 pair
826-038	200 metre reel - 12 pair

### Type KCB - Armoured Multipair Compensating Cable

Code No	Description
826-080	10 metre reel - 2 pair
826-082	25 metre reel - 2 pair
826-084	50 metre reel - 2 pair
826-086	100 metre reel - 2 pair
826-088	200 metre reel - 2 pair
826-090	10 metre reel - 6 pair
826-092	25 metre reel - 6 pair
826-094	50 metre reel - 6 pair
826-096	100 metre reel - 6 pair
826-098	200 metre reel - 6 pair
826-100	10 metre reel - 12 pair
826-102	25 metre reel - 12 pair
826-104	50 metre reel - 12 pair
826-106	100 metre reel - 12 pair
826-108	200 metre reel - 12 pair

For advice, call one of our experienced engineers on:

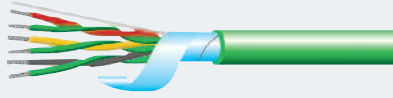
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# Ex Stock Multipair Thermocouple Cable

## PFA Insulated Multipair Thermocouple Extension Cable

This range of PFA insulated multipair thermocouple cables is available as a 7/0.2mm dia cable in 25, 50, or 100 metre lengths in either thermocouple cable types KX, TX, JX and NX. Each conductor is insulated in PFA, pairs are then twisted, bunched together, overall screened with aluminium Mylar® tape and PFA sheathed overall. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. Negative cores are colour coded for easy identification. PFA insulated cable is ideal for higher temperature applications up to 250°C or for use at cryogenic temperatures down to -75°C and will withstand attack from virtually all known chemicals, oils and fluids.



- Available in either 2, 3, 4 or 6 pairs
- PFA insulated
- Temperature range: -75°C to +250°C
- Resistant to chemicals, oils and fluids
- Colour coded:-  
Negative legs colour coded for pair differentiation, please contact TC Direct for details if required
- Available in a variety of lengths
- Easy connection to other equipment via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers

### Type KX - PFA Insulated Multipair Extension Cable

Code No	Description
823-003	25 metre reel - 2 pair
823-006	50 metre reel - 2 pair
823-009	100 metre reel - 2 pair
823-012	200 metre reel - 2 pair
823-015	25 metre reel - 3 pair
823-018	50 metre reel - 3 pair
823-021	100 metre reel - 3 pair
823-024	200 metre reel - 3 pair
823-030	25 metre reel - 4 pair
823-033	50 metre reel - 4 pair
823-036	100 metre reel - 4 pair
823-039	200 metre reel - 4 pair
823-042	25 metre reel - 6 pair
823-045	50 metre reel - 6 pair
823-048	100 metre reel - 6 pair
823-051	200 metre reel - 6 pair

### Stainless Steel Braided Versions

For mechanical protection, this product can also be supplied with an overall stainless steel braiding. Call us NOW on 01895 855555 for more information.

### Type TX - PFA Insulated Multipair Extension Cable

Code No	Description
823-066	25 metre reel - 2 pair
823-069	50 metre reel - 2 pair
823-072	100 metre reel - 2 pair
823-073	200 metre reel - 2 pair
823-075	25 metre reel - 3 pair
823-078	50 metre reel - 3 pair
823-081	100 metre reel - 3 pair
823-082	200 metre reel - 3 pair
823-084	25 metre reel - 4 pair
823-087	50 metre reel - 4 pair
823-090	100 metre reel - 4 pair
823-091	200 metre reel - 4 pair
823-093	25 metre reel - 6 pair
823-096	50 metre reel - 6 pair
823-099	100 metre reel - 6 pair
823-100	200 metre reel - 6 pair

### Type JX - PFA Insulated Multipair Extension Cable

Code No	Description
823-111	25 metre reel - 2 pair
823-114	50 metre reel - 2 pair
823-117	100 metre reel - 2 pair
823-118	200 metre reel - 2 pair
823-120	25 metre reel - 3 pair
823-123	50 metre reel - 3 pair
823-126	100 metre reel - 3 pair
823-127	200 metre reel - 3 pair
823-129	25 metre reel - 4 pair
823-132	50 metre reel - 4 pair
823-135	100 metre reel - 4 pair
823-136	200 metre reel - 4 pair
823-138	25 metre reel - 6 pair
823-141	50 metre reel - 6 pair
823-144	100 metre reel - 6 pair
823-145	200 metre reel - 6 pair

### Type NX - PFA Insulated Multipair Extension Cable

Code No	Description
823-156	25 metre reel - 2 pair
823-159	50 metre reel - 2 pair
823-162	100 metre reel - 2 pair
823-163	200 metre reel - 2 pair
823-165	25 metre reel - 3 pair
823-168	50 metre reel - 3 pair
823-171	100 metre reel - 3 pair
823-172	200 metre reel - 3 pair
823-174	25 metre reel - 4 pair
823-177	50 metre reel - 4 pair
823-180	100 metre reel - 4 pair
823-181	200 metre reel - 4 pair
823-183	25 metre reel - 6 pair
823-186	50 metre reel - 6 pair
823-189	100 metre reel - 6 pair
823-190	200 metre reel - 6 pair

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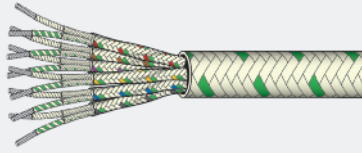
# Ex Stock Multipair Thermocouple Cable

## Fibreglass Insulated Multipair Thermocouple Extension and Compensating Cable

This range of Fibreglass insulated multipair thermocouple cable is available as a 14/0.2mm dia cable in 25, 50, 100 or 200 metre lengths in either thermocouple cable types KX, JX and RCA/SCA.

Each conductor is double glass fibre lapped, glass fibre braided and silicone varnished. Pairs

twisted, glass fibre braided and silicone varnished, bunched, glass fibre braided and silicone varnished. This cable is available with and without an overall stainless steel wire braid. All conductors used (except for compensating cable) are made from the relevant thermocouple material and meets IEC 60584-1 Class 2 : 2013 up to the maximum operating temperature of the insulation material. Negative cores are colour coded for easy identification. Fibreglass insulated cable is ideal for higher temperature applications up to 480°C and the rugged construction of the stainless steel braided cable makes it ideal for heavy industrial applications such as in brick kilns and in the glass industry.



- Available in either 2, 3 or 6 pairs
- Fibreglass insulated
- Overall stainless steel braid available
- Temperature rating: 480°C
- Colour coded:-

**Type KX: Green outer sheath, green positive core and white negative core**

**Type JX: Black outer sheath, black positive core and white negative core**

**Type RCA/SCA: Orange outer sheath, orange positive core and white neg. core**

- Available in a variety of lengths
- Easy connection to other equipment via our range of connector systems or via the rear terminals on our range of indicators, controllers and programmers

### Type KX - Fibreglass Multipair Extension Cable

Code No Description

823-303	25 metre reel - 2 pair
823-306	50 metre reel - 2 pair
823-309	100 metre reel - 2 pair
823-312	200 metre reel - 2 pair
823-315	25 metre reel - 3 pair
823-318	50 metre reel - 3 pair
823-321	100 metre reel - 3 pair
823-324	200 metre reel - 3 pair
823-327	25 metre reel - 6 pair
823-330	50 metre reel - 6 pair
823-333	100 metre reel - 6 pair
823-336	200 metre reel - 6 pair

### Type JX - Fibreglass Multipair Extension Cable

Code No Description

823-351	25 metre reel - 2 pair
823-354	50 metre reel - 2 pair
823-357	100 metre reel - 2 pair
823-360	200 metre reel - 2 pair
823-363	25 metre reel - 3 pair
823-366	50 metre reel - 3 pair
823-369	100 metre reel - 3 pair
823-372	200 metre reel - 3 pair
823-375	25 metre reel - 6 pair
823-378	50 metre reel - 6 pair
823-381	100 metre reel - 6 pair
823-384	200 metre reel - 6 pair

### Type RCA/SCA - Fibreglass Multipair Compensating Cable

Code No Description

823-447	25 metre reel - 2 pair
823-450	50 metre reel - 2 pair
823-453	100 metre reel - 2 pair
823-456	200 metre reel - 2 pair
823-459	25 metre reel - 3 pair
823-462	50 metre reel - 3 pair
823-465	100 metre reel - 3 pair
823-468	200 metre reel - 3 pair
823-471	25 metre reel - 6 pair
823-474	50 metre reel - 6 pair
823-477	100 metre reel - 6 pair
823-480	200 metre reel - 6 pair

### Did you know ?



**We have the largest stock of Thermocouple & RTD Cable in Europe, with over one million metres of stock available for immediate delivery**

**Please call us on 01895 855555 to discuss your requirements**

### Stainless Steel Braided Versions

For mechanical protection, this product can also be supplied with an overall stainless steel braiding. Call us **NOW** on **01895 855555** for more information.

**For advice, call one of our experienced engineers on:**

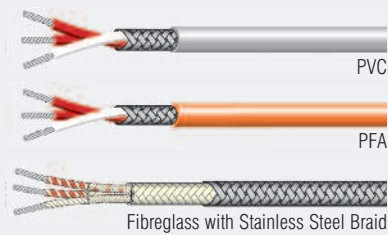
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# Ex Stock RTD Cables and Connector Systems

## RTD Extension Cable 7/0.2mm dia Twisted Screened Construction

We supply 7/0.2mm dia RTD extension cable in either 25, 50, 100 or 200 metre lengths. Three or six cores are supplied and insulated in either Heat Resistant PVC or PFA or Stainless Steel Braided Fibreglass. The cores are then twisted, screened, and overall sheathed in the same material.



- **3 or 6 cores of 7/0.2mm dia twisted conductors,**  
**PVC version has a tinned copper braid and is then overall PVC sheathed.**  
**PFA version has a nickel plated copper braid and is then overall sheathed.**  
**Fibreglass version is fibreglass braided then stainless steel braided overall.**
- **Temperature rated as follows**  
**Heat Resistant PVC 105°C, PFA 250°C and Fibreglass 480°C**
- **Cores colour coded :- 2 cores red and 1 core white**
- **Outer sheath PVC - Grey, PFA - Orange and Fibreglass is stainless steel**
- **Available in a variety of lengths**
- **Easy connection to our range of sensors via our connector systems or the rear terminals on our indicators, controllers and programmers all of which can be found elsewhere in this catalogue.**

### 3 Core RTD Twisted Screened Extension Cable

Code No Description

835-103	25 metre reel - PVC
835-105	50 metre reel - PVC
835-107	100 metre reel - PVC
835-109	200 metre reel - PVC
835-113	25 metre reel - PFA
835-115	50 metre reel - PFA
835-117	100 metre reel - PFA
835-119	200 metre reel - PFA
835-123	25 metre reel - Fibreglass/St St Braided
835-125	50 metre reel - Fibreglass/St St Braided
835-127	100 metre reel - Fibreglass/St St Braided
835-129	200 metre reel - Fibreglass/St St Braided

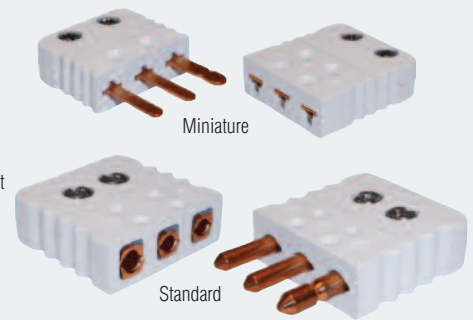
### 6 Core RTD Twisted Screened Extension Cable

Code No Description

835-203	25 metre reel - PVC
835-205	50 metre reel - PVC
835-207	100 metre reel - PVC
835-209	200 metre reel - PVC
835-211	25 metre reel - PFA
835-213	50 metre reel - PFA
835-215	100 metre reel - PFA
835-217	200 metre reel - PFA
835-219	25 metre reel - Fibreglass/St St Braided
835-221	50 metre reel - Fibreglass/St St Braided
835-223	100 metre reel - Fibreglass/St St Braided
835-225	200 metre reel - Fibreglass/St St Braided

## RTD Connectors

These flat and round pin miniature and standard connectors are ideal for connecting RTD sensors and RTD extension cable to each other. The three pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C. In addition to the plug and socket, a panel socket is available on request along with matching anodised aluminium connector panels. Weatherproof silicone rubber boots are also available for added protection in moist environments.



- **For connection to 3 wire sensors or cable**
- **Body: Thermoplastic compound rated -50 to +210°C**
- **Miniature connectors suitable for 0.2mm up to 0.6mm wire diameters, Standard connectors suitable for 0.2mm up to 2.0mm**
- **Colour coded – White**
- **Miniature dimensions – plug: 19x23.9x8mm (LxWxD) with 12mm long pins, socket: 25.4x23.9x8mm**
- **Standard dimensions – plug: 35x36.5x12.8mm (LxWxD) with 15mm long round pins, socket: 35x36.5x12.8mm**

### Miniature RTD Connectors

Code No Description

733-130	Miniature RTD Plug
733-132	Miniature RTD Socket

### Standard RTD Connectors

Code No Description

733-460	Standard RTD Plug
733-462	Standard RTD Socket

## RTD - Pt100 Extension Leads

These RTD - Pt100 leads are ideal for connecting a wide variety of applications. They are available in either 1, 2, 5 or 10 metre lengths of PVC insulated cable with the option of having either a miniature plug at each end or, alternatively, a miniature plug at one end and a miniature socket at the other.



### RTD - Pt100 Extension Lead

Code No Description

832-180	1 metre - Plug to Plug
832-186	2 metres - Plug to Plug
832-188	5 metres - Plug to Plug
832-190	10 metres - Plug to Plug
832-192	1 metre - Plug to Socket
832-198	2 metres - Plug to Socket
832-200	5 metres - Plug to Socket
832-202	10 metres - Plug to Socket

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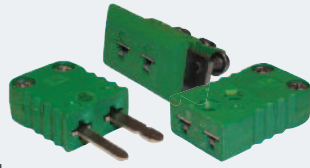


# Ex Stock Thermocouple Connector Systems

## Miniature Thermocouple Connectors (rated to 210°C)

These flat pin miniature connectors are ideal for connecting thermocouple sensors and extension or compensating cable to each other.

The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C. In addition to offering a plug and socket, a panel socket is also available. Matching anodised aluminium connector panels can also be found in this section. Weatherproof silicone rubber boots for added protection in moist environments and cable clamps are also available.



- **Body:** Thermoplastic compound rated -50°C to +210°C
- **Suitable for wire diameters up to 0.6mm**
- **Colour coded to IEC 60584-3 : 2007** Type K - Green, Type T - Brown, Type J - Black, Type N - Pink, Type RCB/SCB - Orange and Copper - White
- **Dimensions:**  
Plug 19x16x8mm (LxWxD) with 12mm long pins  
Socket 26x16x8mm (LxWxD)  
Panel socket is typically 19x16x8mm (LxWxD) with front bezel 23.5x14mm supplied with bracket for attachment to panel (see page 84 for panel details)
- **Cable clamps and weatherproof silicone rubber boots offered as options but cannot be used at the same time**
- **Manufactured by the TC Group**

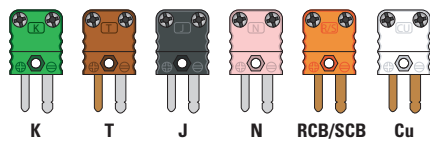
### Miniature Thermocouple Connectors (rated to 210°C)

Code No Description

724-102	Type K Miniature Plug
724-104	Type K Miniature Socket
724-106	Type K Miniature Panel Socket
724-108	Type T Miniature Plug
724-110	Type T Miniature Socket
724-112	Type T Miniature Panel Socket
724-114	Type J Miniature Plug
724-116	Type J Miniature Socket
724-118	Type J Miniature Panel Socket
724-120	Type N Miniature Plug
724-122	Type N Miniature Socket
724-124	Type N Miniature Panel Socket
724-126	Type RCB/SCB Miniature Plug
724-128	Type RCB/SCB Miniature Socket
724-130	Type RCB/SCB Miniature Panel Socket
724-132	Copper Miniature Plug
724-134	Copper Miniature Socket
724-136	Copper Miniature Panel Socket
724-790	Miniature Cable Clamp (One per connector)
724-800	Silicone Rubber Boot (One per connector)

Colour Codes available to IEC 60584-3 : 2007 (ANSI colours available on request)

Thermocouple Type



## Miniature Thermocouple Connectors (rated to 350°C)

These flat pin 350°C rated miniature connectors are ideal for connecting thermocouple sensors and extension cable to each other at higher temperatures. The connector body is made from a high temperature thermoplastic and is rated from -50°C to 350°C. The pins are polarised to avoid an incorrect connection.



- **Thermoplastic body rated -50°C to +350°C**
- **Suitable for wire diameters up to 0.6mm**
- **Connectors coloured brown and identified with thermocouple type**
- **Thermocouple Types: K, T, J, N and R/S**
- **Polarised flat pins**
- **Dimensions:**  
Plug 19x16x8mm (LxWxD) (12mm long pins), Socket 26x16x8mm (LxWxD)
- **Manufactured by the TC Group**

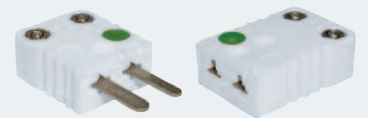
### Miniature Thermocouple Connectors (rated to 350°C)

Code No Description

721-003	Type K Miniature 350°C rated Plug
721-006	Type K Miniature 350°C rated Socket
721-009	Type T Miniature 350°C rated Plug
721-012	Type T Miniature 350°C rated Socket
721-015	Type J Miniature 350°C rated Plug
721-018	Type J Miniature 350°C rated Socket
721-021	Type N Miniature 350°C rated Plug
721-024	Type N Miniature 350°C rated Socket
721-027	Type RCB/SCB Miniature 350°C rated Plug
721-030	Type RCB/SCB Miniature 350°C rated Socket

## Miniature Ceramic Thermocouple Connectors (rated to 650°C)

These flat pin high temperature miniature connectors are ideal for connecting thermocouple sensors and extension cable to each other at high temperatures. The connector body is made from a high purity alumina, rated from -25°C to 650°C. The pins are polarised to avoid an incorrect connection and the IEC 60584-3 : 2007 colour code is observed through a colour dot on the connector body.



- **Body: High Purity Alumina rated -25°C to 650°C**
- **Suitable for wire diameters up to 0.8mm**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions:**  
Plug 22x19x9.7mm (LxWxD) (12mm long pins), Socket 26x16x9.7mm (LxWxD)
- **Manufactured by the TC Group**

### Miniature Ceramic Thermocouple Connectors (rated to 650°C)

Code No Description

723-003	Type K Miniature Ceramic Plug
723-006	Type K Miniature Ceramic Socket
723-009	Type T Miniature Ceramic Plug
723-012	Type T Miniature Ceramic Socket
723-015	Type J Miniature Ceramic Plug
723-018	Type J Miniature Ceramic Socket
723-021	Type N Miniature Ceramic Plug
723-024	Type N Miniature Ceramic Socket
723-027	Type RCB/SCB Miniature Ceramic Plug
723-030	Type RCB/SCB Miniature Ceramic Socket

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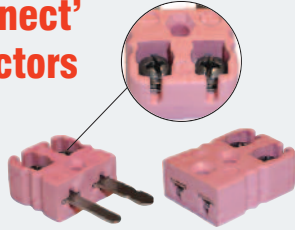
TC Direct



# Ex Stock Thermocouple Connector Systems

## Miniature 'Quick Connect' Thermocouple Connectors

These 'quick connect' versions of our flat pin miniature connectors allow rapid connection of thermocouple sensors and extension or compensating cable to each other. Simply push in the wire and tighten the screw! The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



- **Quick and easy 'jab-in' connection of thermocouple wires**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for wire diameters up to 0.6mm**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions: Plug 15x16x8mm (LxWxD) with 12mm long pins. Socket 21.5x16x8mm (LxWxD)**
- **Manufactured by the TC Group**

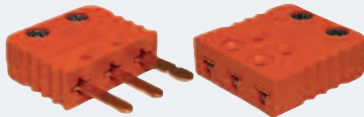
### Miniature 'Quick Connect' Thermocouple Connectors (210°C)

Code No Description

724-603	Type K Jab-in Miniature Plug
724-605	Type K Jab-in Miniature Socket
724-607	Type T Jab-in Miniature Plug
724-609	Type T Jab-in Miniature Socket
724-611	Type J Jab-in Miniature Plug
724-613	Type J Jab-in Miniature Socket
724-615	Type N Jab-in Miniature Plug
724-617	Type N Jab-in Miniature Socket
724-619	Type RCB/SCB Jab-in Miniature Plug
724-621	Type RCB/SCB Jab-in Miniature Socket

## Miniature 3 Pin Thermocouple Connectors (rated to 210°C)

These 3 pin flat pin miniature connectors are ideal for connecting thermocouple sensors and extension or compensating cables with a screen to each other. The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



- **3 pin version - ideal for connecting cables with a screen**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for wire diameters up to 0.6mm**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions: Plug 19x24x8mm (LxWxD) with 12mm long pins. Socket 25x24x8mm (LxWxD)**
- **Manufactured by the TC Group**

### Miniature 3 Pin Thermocouple Connectors (rated to 210°C)

Code No Description

724-653	Type K Miniature 3 Pin Plug
724-655	Type K Miniature 3 Pin Socket
724-657	Type T Miniature 3 Pin Plug
724-659	Type T Miniature 3 Pin Socket
724-661	Type J Miniature 3 Pin Plug
724-663	Type J Miniature 3 Pin Socket
724-665	Type N Miniature 3 Pin Plug
724-667	Type N Miniature 3 Pin Socket
724-669	Type RCB/SCB Miniature 3 Pin Plug
724-671	Type RCB/SCB Miniature 3 Pin Socket

## Miniature Duplex Thermocouple Connectors (rated to 210°C)

These flat pin duplex versions of our miniature connectors are ideal for connecting duplex thermocouple sensors and extension or compensating cable to each other. The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



- **Duplex miniature thermocouple connector**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for wire diameters up to 0.6mm**
- **Colour coded to IEC 60584-3 : 2007 Type K - Green, Type T - Brown, Type J - Black, Type N - Pink and Type RCB/SCB - Orange**
- **Dimensions: Plug 19x16x16mm (LxWxD) with 12mm long pins. Socket 25x16x16mm (LxWxD)**
- **Manufactured by the TC Group**

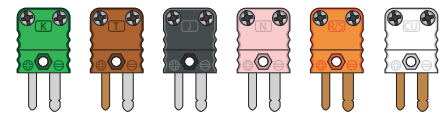
### Miniature Duplex Thermocouple Connectors (rated to 210°C)

Code No Description

724-703	Duplex Type K Miniature Plug
724-705	Duplex Type K Miniature Socket
724-707	Duplex Type T Miniature Plug
724-709	Duplex Type T Miniature Socket
724-711	Duplex Type J Miniature Plug
724-713	Duplex Type J Miniature Socket
724-715	Duplex Type N Miniature Plug
724-717	Duplex Type N Miniature Socket
724-719	Duplex Type RCB/SCB Miniature Plug
724-721	Duplex Type RCB/SCB Miniature Socket

### Colour Codes available

to IEC 60584-3 : 2007  
(ANSI colours available on request)



Thermocouple Type K T J N RCB/SCB Cu

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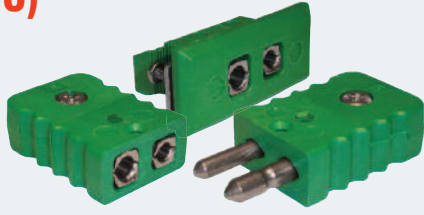
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Thermocouple Connector Systems

## Standard Thermocouple Connectors (rated to 210°C)

These round pin standard connectors are ideal for connecting thermocouple sensors and extension or compensating cable to each other. The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C. In addition to offering a plug and socket, a panel socket is also available. Matching anodised aluminium connector panels can also be found in this section. Weatherproof silicone rubber boots are also available for added protection in moist environments as well as cable clamps.

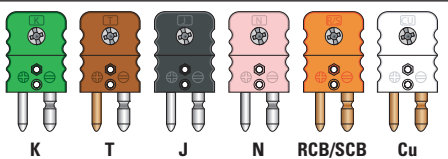


- **Body:** Thermoplastic compound rated -50°C to +210°C
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Colour coded to IEC 60584-3 : 2007 Type K - Green, Type T - Brown, Type J - Black, Type N - Pink, Type RCB/SCB - Orange and Copper - White**
- **Dimensions:** Plug 35x25x12.5mm (LxWxD) with 15mm long round pins. Socket 35x25x12.5mm (LxWxD). Panel socket is typically 27x25x12.5mm (LxWxD) with front bezel 42x19mm supplied with bracket for attachment to panel (see page 84 for panel details)
- **Cable clamps and weatherproof silicone rubber boots offered as options but cannot be used at the same time**
- **Manufactured by the TC Group**

### Standard Thermocouple Connectors (rated to 210°C)

Code No	Description
724-320	Type K Standard Plug
724-322	Type K Standard Socket
724-324	Type K Standard Panel Socket
724-326	Type T Standard Plug
724-328	Type T Standard Socket
724-330	Type T Standard Panel Socket
724-332	Type J Standard Plug
724-334	Type J Standard Socket
724-336	Type J Standard Panel Socket
724-338	Type N Standard Plug
724-340	Type N Standard Socket
724-342	Type N Standard Panel Socket
724-344	Type RCB/SCB Standard Plug
724-346	Type RCB/SCB Standard Socket
724-348	Type RCB/SCB Standard Panel Socket
724-350	Copper Standard Plug
724-352	Copper Standard Socket
724-354	Copper Standard Panel Socket
724-890	Standard Cable Clamp (One per connector)
724-900	Silicone Rubber Boot (One per connector)

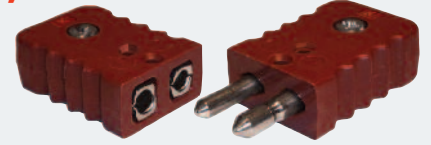
**Colour Codes available**  
to IEC 60584-3 : 2007  
(ANSI colours available on request)



Thermocouple Type

## Standard Thermocouple Connectors (rated to 350°C)

These round pin 350°C rated standard connectors are ideal for connecting thermocouple sensors and extension cable to each other at higher temperatures.



The connector body is made from a high temperature thermoplastic and is rated from -50°C to 350°C. The pins are polarised to avoid an incorrect connection.

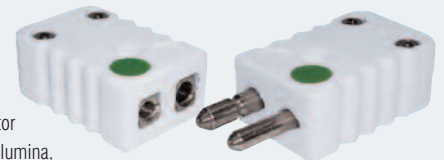
- **Thermoplastic body rated -50°C to +350°C**
- **Suitable for wires from 0.2mm to 2.0mm dia**
- **Connectors coloured brown and identified with thermocouple type**
- **Thermocouple Types: K, T, J, N and R/S**
- **Polarised round pins**
- **Dimensions:** Plug 35x25x12.5mm (LxWxD) with 15mm long pins  
Socket 35x25x12.5mm (LxWxD)
- **Manufactured by the TC Group**

### Standard Thermocouple Connectors (rated to 350°C)

Code No	Description
721-053	Type K Standard 350°C rated Plug
721-056	Type K Standard 350°C rated Socket
721-059	Type T Standard 350°C rated Plug
721-062	Type T Standard 350°C rated Socket
721-065	Type J Standard 350°C rated Plug
721-068	Type J Standard 350°C rated Socket
721-071	Type N Standard 350°C rated Plug
721-074	Type N Standard 350°C rated Socket
721-077	Type RCB/SCB 350°C rated Ceramic Plug
721-080	Type RCB/SCB 350°C rated Ceramic Socket

## Standard Ceramic Thermocouple Connectors (rated to 650°C)

These round pin high temperature standard connectors are ideal for connecting thermocouple sensors and extension cable to each other at high temperatures. The connector body is made from a high purity alumina,



rated from -25°C to 650°C. The pins are polarised to avoid an incorrect connection and the IEC 60584-3 : 2007 colour code is observed through a colour dot on the connector body.

- **Body: High Purity Alumina rated -25°C to 650°C**
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions:** Plug 38x25x16mm (LxWxD) Socket 38x25x16mm (LxWxD)
- **Manufactured by the TC Group**

### Standard Ceramic Thermocouple Connectors (rated to 650°C)

Code No	Description
723-053	Type K Standard Ceramic Plug
723-056	Type K Standard Ceramic Socket
723-059	Type T Standard Ceramic Plug
723-062	Type T Standard Ceramic Socket
723-065	Type J Standard Ceramic Plug
723-068	Type J Standard Ceramic Socket
723-071	Type N Standard Ceramic Plug
723-074	Type N Standard Ceramic Socket
723-077	Type RCB/SCB Standard Ceramic Plug
723-080	Type RCB/SCB Standard Ceramic Socket

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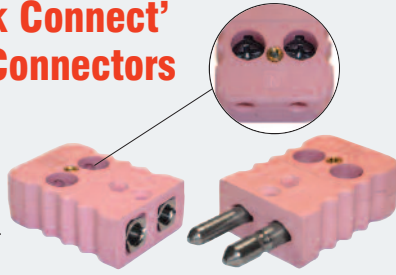
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**TC Direct**

# Ex Stock Thermocouple Connector Systems

## Standard 'Quick Connect' Thermocouple Connectors

These 'quick connect' versions of our round pin standard connectors allow for the rapid connection of thermocouple sensors and extension or compensating cable to each other. Simply push in the wire and tighten the screw! The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



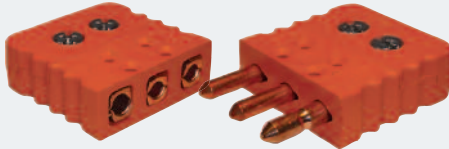
- **Quick and easy 'jab-in' connection of thermocouple wires**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions: Plug 35x25x12.5mm (LxWxD) with 15mm long pins.**  
**Socket 35x25x12.5mm (LxWxD)**
- **Manufactured by the TC Group**

### Standard 'Quick Connect' Thermocouple Connectors (210°C)

Code No	Description
724-803	Type K Jab-in Standard Plug
724-805	Type K Jab-in Standard Socket
724-807	Type T Jab-in Standard Plug
724-809	Type T Jab-in Standard Socket
724-811	Type J Jab-in Standard Plug
724-813	Type J Jab-in Standard Socket
724-815	Type N Jab-in Standard Plug
724-817	Type N Jab-in Standard Socket
724-819	Type RCB/SCB Jab-in Standard Plug
724-821	Type RCB/SCB Jab-in Standard Socket

## Standard 3 Pin Thermocouple Connectors

These 3-pin round pin standard connectors are ideal for connecting thermocouple sensors and extension or compensating cables with a screen to each other. The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



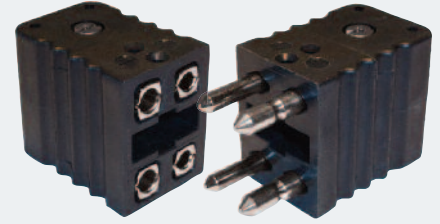
- **3 pin version - ideal for connecting cables with a screen**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions: Plug 35x36.5x12.5mm (LxWxD) with 15mm long pins.**  
**Socket 35x36.5x12.5mm (LxWxD)**
- **Manufactured by the TC Group**

### Standard 3 Pin Thermocouple Connectors (rated to 210°C)

Code No	Description
724-853	Type K Standard 3 Pin Plug
724-855	Type K Standard 3 Pin Socket
724-857	Type T Standard 3 Pin Plug
724-859	Type T Standard 3 Pin Socket
724-861	Type J Standard 3 Pin Plug
724-863	Type J Standard 3 Pin Socket
724-865	Type N Standard 3 Pin Plug
724-867	Type N Standard 3 Pin Socket
724-869	Type RCB/SCB Standard 3 Pin Plug
724-871	Type RCB/SCB Standard 3 Pin Socket

## Standard Duplex Thermocouple Connectors

These round pin duplex versions of our standard connectors are ideal for connecting duplex thermocouple sensors and extension or compensating cable to each other. The pins are polarised to avoid an incorrect connection and the connector body is additionally marked for polarity. They are rated for use between -50°C and +210°C.



- **Duplex standard thermocouple connector manufactured by the TC Group**
- **Body: Thermoplastic compound rated -50°C to +210°C**
- **Suitable for 0.2mm up to 2.0mm dia wire diameters**
- **Colour coded to IEC 60584-3 : 2007**
- **Dimensions: Plug 36x25x31.5mm (LxWxD) with 15mm long pins.**  
**Socket 36x25x31.5mm (LxWxD)**

### Standard Duplex Thermocouple Connectors (rated to 210°C)

Code No	Description
724-903	Duplex Type K Standard Plug
724-905	Duplex Type K Standard Socket
724-907	Duplex Type T Standard Plug
724-909	Duplex Type T Standard Socket
724-911	Duplex Type J Standard Plug
724-913	Duplex Type J Standard Socket
724-915	Duplex Type N Standard Plug
724-917	Duplex Type N Standard Socket
724-919	Duplex Type RCB/SCB Standard Plug
724-921	Duplex Type RCB/SCB Standard Socket

## 6-Way Heavy Duty Thermocouple Connector System

These thermocouple connecting systems comprise of six standard plugs or sockets mounted in a heavy duty steel housing. They are designed for quick interconnection of thermocouple sensors in a wide variety of processes; such as walk through sterilizers where the two halves of the connector are mated during sterilization. Alternatively any of our standard sized plugs or sockets can be used individually with one half of the system.



- **Quick connection of thermocouple systems & colour coded to IEC 60584-3:2007**
- **Temperature rating: 210°C**
- **PG13 cable entry allows connection of cables up to 15mm diameter**
- **Accepts wire size from 0.2mm to 2.0mm diameter**
- **Dimensions including handle:- Plug: 28mm wide x 93mm deep x 117mm high,**  
**Socket: 63mm wide x 94mm deep x 113mm high**
- **Manufactured by the TC Group**

### Heavy Duty 6-Way Standard Connector System (rated to 210°C)

Code No	Description
723-103	6-way Type K Standard Plug Assembly
723-106	6-way Type K Standard Socket Assembly
723-109	6-way Type T Standard Plug Assembly
723-112	6-way Type T Standard Socket Assembly
723-115	6-way Type J Standard Plug Assembly
723-118	6-way Type J Standard Socket Assembly
723-121	6-way Type N Standard Plug Assembly
723-124	6-way Type N Standard Socket Assembly

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# Ex Stock Thermocouple Connector Systems

## Miniature Thermocouple Panels with Connectors

This range of connector panels allows you to easily install 1, 2, 4, 6, 8, 12 or 24 miniature connector sockets within a connector panel to your main panel. The panels are made from anodised aluminium without mounting holes in order for you to custom position the connector panel. Supplied complete with the miniature panel sockets but remember to order the miniature plugs separately. Blank panels without connectors are also available.



- Offered for 1, 2, 4, 6, 8, 12 or 24 channels
- Supplied with thermocouple sockets in either type K, T, J, N or RCB/SCB
- Panel material: Anodised aluminium
- Dimensions: All panels are 16 AWG thick
  - 1 channel - 47mm high x 24mm wide
  - 2 channel - 47mm high x 40mm wide
  - 4 channel - 47mm high x 72mm wide
  - 6 channel - 47mm high x 104mm wide
  - 8 channel - 47mm high x 136mm wide
  - 12 channel - 47mm high x 200mm wide
  - 24 channel - 78mm high x 200mm wide
- Manufactured by the TC Group

### Miniature Thermocouple Connector Panels

Code No	Description
724-137	Type K 1 channel Connector Panel
724-138	Type K 2 channel Connector Panel
724-139	Type K 4 channel Connector Panel
724-140	Type K 6 channel Connector Panel
724-141	Type K 8 channel Connector Panel
724-142	Type K 12 channel Connector Panel
724-144	Type K 24 channel Connector Panel
724-145	Type T 1 channel Connector Panel
724-146	Type T 2 channel Connector Panel
724-147	Type T 4 channel Connector Panel
724-148	Type T 6 channel Connector Panel
724-149	Type T 8 channel Connector Panel
724-150	Type T 12 channel Connector Panel
724-152	Type T 24 channel Connector Panel
724-153	Type J 1 channel Connector Panel
724-154	Type J 2 channel Connector Panel
724-155	Type J 4 channel Connector Panel
724-156	Type J 6 channel Connector Panel
724-157	Type J 8 channel Connector Panel
724-158	Type J 12 channel Connector Panel
724-160	Type J 24 channel Connector Panel
724-161	Type N 1 channel Connector Panel
724-162	Type N 2 channel Connector Panel
724-163	Type N 4 channel Connector Panel
724-164	Type N 6 channel Connector Panel
724-165	Type N 8 channel Connector Panel
724-166	Type N 12 channel Connector Panel
724-168	Type N 24 channel Connector Panel
724-169	Type RCB/SCB 1 channel Connector Panel
724-170	Type RCB/SCB 2 channel Connector Panel
724-172	Type RCB/SCB 4 channel Connector Panel
724-174	Type RCB/SCB 6 channel Connector Panel
724-176	Type RCB/SCB 8 channel Connector Panel
724-178	Type RCB/SCB 12 channel Connector Panel
724-180	Type RCB/SCB 24 channel Connector Panel

## Standard Thermocouple Panels with Connectors

This range of connector panels allows you to easily install 1, 2, 4, 6, 8, 12 or 24 standard connector sockets within a connector panel to your main panel. The panels are made from anodised aluminium without mounting holes in order for you to custom position the connector panel. Supplied complete with the standard panel sockets but remember to order the standard plugs separately. Blank panels without connectors are also available.



- Offered for 1, 2, 4, 6, 8, 12 or 24 channel
- Supplied with thermocouple sockets in either type K, T, J, N or RCB/SCB
- Panel material: Anodised aluminium
- Dimensions: All panels are 16 AWG thick
  - 1 channel - 67mm high x 37mm wide
  - 2 channel - 67mm high x 62mm wide
  - 4 channel - 67mm high x 112mm wide
  - 6 channel - 67mm high x 162mm wide
  - 8 channel - 67mm high x 212mm wide
  - 12 channel - 67mm high x 312mm wide
  - 24 channel - 119mm high x 312mm wide
- Manufactured by the TC Group

### Standard Thermocouple Connector Panels

Code No	Description
724-429	Type K 1 channel Connector Panel
724-430	Type K 2 channel Connector Panel
724-431	Type K 4 channel Connector Panel
724-432	Type K 6 channel Connector Panel
724-433	Type K 8 channel Connector Panel
724-434	Type K 12 channel Connector Panel
724-436	Type K 24 channel Connector Panel
724-437	Type T 1 channel Connector Panel
724-438	Type T 2 channel Connector Panel
724-439	Type T 4 channel Connector Panel
724-440	Type T 6 channel Connector Panel
724-441	Type T 8 channel Connector Panel
724-442	Type T 12 channel Connector Panel
724-444	Type T 24 channel Connector Panel
724-445	Type J 1 channel Connector Panel
724-446	Type J 2 channel Connector Panel
724-447	Type J 4 channel Connector Panel
724-448	Type J 6 channel Connector Panel
724-449	Type J 8 channel Connector Panel
724-450	Type J 12 channel Connector Panel
724-452	Type J 24 channel Connector Panel
724-453	Type N 1 channel Connector Panel
724-454	Type N 2 channel Connector Panel
724-455	Type N 4 channel Connector Panel
724-456	Type N 6 channel Connector Panel
724-457	Type N 8 channel Connector Panel
724-458	Type N 12 channel Connector Panel
724-460	Type N 24 channel Connector Panel
724-461	Type RCB/SCB 1 channel Connector Panel
724-462	Type RCB/SCB 2 channel Connector Panel
724-464	Type RCB/SCB 4 channel Connector Panel
724-466	Type RCB/SCB 6 channel Connector Panel
724-468	Type RCB/SCB 8 channel Connector Panel
724-470	Type RCB/SCB 12 channel Connector Panel
724-472	Type RCB/SCB 24 channel Connector Panel

For advice, call one of our experienced engineers on:

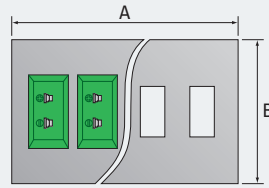
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**TC**  
**Direct**

# Ex Stock Thermocouple Connector Panels

## Miniature Connector Panels without Panel Mounting Holes

These connector panels are supplied without sockets (any of our miniature panel sockets can be easily installed by the user if required) and are made from either anodised aluminium or stainless steel and are supplied without panel mounting holes to enable custom positioning of the panels.



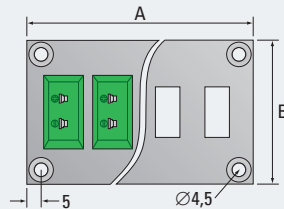
### Miniature Connector Panels without Panel Mounting Holes

Code No	Dimensions A x B in mm	Description
728-500	23.5 x 47	Aluminium - 1 channel
728-502	40 x 47	Aluminium - 2 channel
728-504	72 x 47	Aluminium - 4 channel
728-506	104 x 47	Aluminium - 6 channel
728-508	136 x 47	Aluminium - 8 channel
728-510	168 x 47	Aluminium - 10 channel
728-512	200 x 47	Aluminium - 12 channel
728-514	136 x 78	Aluminium - 16 channel
728-516	168 x 78	Aluminium - 20 channel
728-518	200 x 78	Aluminium - 24 channel
728-520	23.5 x 47	Stainless Steel - 1 channel
728-522	40 x 47	Stainless Steel - 2 channel
728-524	72 x 47	Stainless Steel - 4 channel
728-526	104 x 47	Stainless Steel - 6 channel
728-528	136 x 47	Stainless Steel - 8 channel
728-529	168 x 47	Stainless Steel - 10 channel
728-530	200 x 47	Stainless Steel - 12 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Miniature Connector Panels with Panel Mounting Holes

These connector panels are supplied without sockets (any of our miniature panel sockets can be easily installed by the user if required) and are made from either anodised aluminium or stainless steel. Supplied with pre-drilled panel mounting holes.

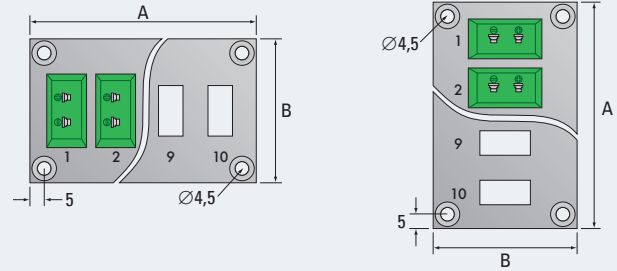


### Miniature Connector Panels with Panel Mounting Holes

Code No	Dimensions A x B in mm	Description
728-600	23.5 x 47	Aluminium - 1 channel
728-602	40 x 47	Aluminium - 2 channel
728-604	72 x 47	Aluminium - 4 channel
728-606	104 x 47	Aluminium - 6 channel
728-608	136 x 47	Aluminium - 8 channel
728-610	168 x 47	Aluminium - 10 channel
728-612	200 x 47	Aluminium - 12 channel
728-614	136 x 78	Aluminium - 16 channel
728-616	168 x 78	Aluminium - 20 channel
728-618	200 x 78	Aluminium - 24 channel
728-620	23.5 x 47	Stainless Steel - 1 channel
728-622	40 x 47	Stainless Steel - 2 channel
728-624	72 x 47	Stainless Steel - 4 channel
728-626	104 x 47	Stainless Steel - 6 channel
728-628	136 x 47	Stainless Steel - 8 channel
728-630	168 x 47	Stainless Steel - 10 channel
728-632	200 x 47	Stainless Steel - 12 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Miniature Connector Panels with Panel Mounting Holes & Numbered Channels



These connector panels are supplied without sockets (any of our miniature panel sockets can be easily installed by the user if required) and are made from anodised aluminium. Supplied with pre-drilled panel mounting holes and numbered either horizontally or vertically.

### Miniature Connector Panels with Panel Mounting Holes - Numbered Horizontally

Code No	Dimensions A x B in mm	Description
728-700	23.5 x 47	Aluminium - 1 channel
728-702	40 x 47	Aluminium - 2 channel
728-704	72 x 47	Aluminium - 4 channel
728-706	104 x 47	Aluminium - 6 channel
728-708	136 x 47	Aluminium - 8 channel
728-710	168 x 47	Aluminium - 10 channel
728-712	200 x 47	Aluminium - 12 channel
728-714	136 x 78	Aluminium - 16 channel
728-716	168 x 78	Aluminium - 20 channel
728-718	200 x 78	Aluminium - 24 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

### Miniature Connector Panels with Panel Mounting Holes - Numbered Vertically

Code No	Dimensions A x B in mm	Description
728-800	23.5 x 47	Aluminium - 1 channel
728-802	40 x 47	Aluminium - 2 channel
728-804	72 x 47	Aluminium - 4 channel
728-806	104 x 47	Aluminium - 6 channel
728-808	136 x 47	Aluminium - 8 channel
728-809	168 x 47	Aluminium - 10 channel
728-810	200 x 47	Aluminium - 12 channel
728-812	136 x 78	Aluminium - 16 channel
728-814	168 x 78	Aluminium - 20 channel
728-816	200 x 78	Aluminium - 24 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Matching Miniature Panel Sockets to suit all above Panels (rated to 210°C)

Miniature sockets with rectangular front bezel and fixing plate with screws to suit all panels shown on this page as illustrated.

### Matching Miniature Panel Sockets (rated to 210°C)

Code No	Description
724-106	Type K Miniature Panel Socket
724-112	Type T Miniature Panel Socket
724-118	Type J Miniature Panel Socket
724-124	Type N Miniature Panel Socket
724-130	Type RCB/SCB Miniature Panel Socket
724-136	Copper Miniature Panel Socket

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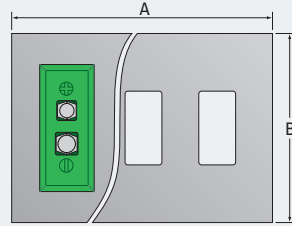
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Thermocouple Connector Panels

## Standard Connector Panels without Panel Mounting Holes

These connector panels are supplied without sockets (any of our standard panel sockets can be easily installed by the user if required) and are made from either anodised aluminium or stainless steel and are supplied without panel mounting holes to enable custom positioning of the panels.



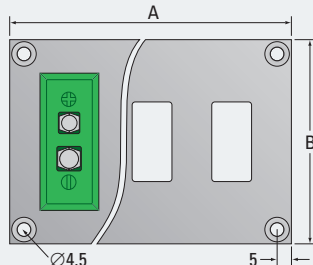
### Standard Connector Panels without Panel Mounting Holes

Code No	Dimensions A x B in mm	Description
728-002	37 x 67	Aluminium - 1 channel
728-004	62 x 67	Aluminium - 2 channel
728-006	112 x 67	Aluminium - 4 channel
728-008	162 x 67	Aluminium - 6 channel
728-010	212 x 67	Aluminium - 8 channel
728-012	262 x 67	Aluminium - 10 channel
728-014	312 x 67	Aluminium - 12 channel
728-016	212 x 113.5	Aluminium - 16 channel
728-018	262 x 113.5	Aluminium - 20 channel
728-020	312 x 113.5	Aluminium - 24 channel
728-022	37 x 67	St./Steel - 1 channel
728-024	62 x 67	St./Steel - 2 channel
728-026	112 x 67	St./Steel - 4 channel
728-028	162 x 67	St./Steel - 6 channel
728-030	212 x 67	St./Steel - 8 channel
728-031	262 x 67	St./Steel - 10 channel
728-032	312 x 67	St./Steel - 12 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Standard Connector Panels with Panel Mounting Holes

These connector panels are supplied without sockets (any of our standard panel sockets can be easily installed by the user if required) and are made from either anodised aluminium or stainless steel. Supplied with pre-drilled panel mounting holes.

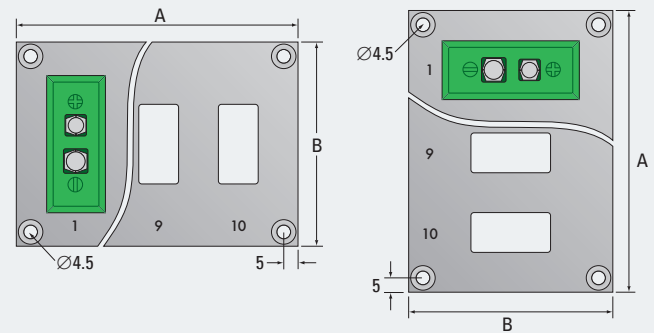


### Standard Connector Panels with Panel Mounting Holes

Code No	Dimensions A x B in mm	Description
728-102	37 x 67	Aluminium - 1 channel
728-104	62 x 67	Aluminium - 2 channel
728-106	112 x 67	Aluminium - 4 channel
728-108	162 x 67	Aluminium - 6 channel
728-110	212 x 67	Aluminium - 8 channel
728-112	262 x 67	Aluminium - 10 channel
728-114	312 x 67	Aluminium - 12 channel
728-116	212 x 113.5	Aluminium - 16 channel
728-118	262 x 113.5	Aluminium - 20 channel
728-120	312 x 113.5	Aluminium - 24 channel
728-122	37 x 67	St./Steel - 1 channel
728-124	62 x 67	St./Steel - 2 channel
728-126	112 x 67	St./Steel - 4 channel
728-128	162 x 67	St./Steel - 6 channel
728-130	212 x 67	St./Steel - 8 channel
728-132	262 x 67	St./Steel - 10 channel
728-134	312 x 67	St./Steel - 12 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Standard Connector Panels with Panel Mounting Holes & Numbered Channels



These connector panels are supplied without sockets (any of our standard panel sockets can be easily installed by the user if required) and are made from anodised aluminium. Supplied with pre-drilled panel mounting holes and numbered either horizontally or vertically.

### Standard Connector Panels with Panel Mounting Holes - Numbered Horizontally

Code No	Dimensions A x B in mm	Description
728-200	37 x 67	Aluminium - 1 channel
728-202	62 x 67	Aluminium - 2 channel
728-204	112 x 67	Aluminium - 4 channel
728-206	162 x 67	Aluminium - 6 channel
728-208	212 x 67	Aluminium - 8 channel
728-210	262 x 67	Aluminium - 10 channel
728-212	312 x 67	Aluminium - 12 channel
728-214	212 x 113.5	Aluminium - 16 channel
728-216	262 x 113.5	Aluminium - 20 channel
728-218	312 x 113.5	Aluminium - 24 channel

### Standard Connector Panels with Panel Mounting Holes - Numbered Vertically

Code No	Dimensions A x B in mm	Description
728-300	37 x 67	Aluminium - 1 channel
728-302	62 x 67	Aluminium - 2 channel
728-304	112 x 67	Aluminium - 4 channel
728-306	162 x 67	Aluminium - 6 channel
728-308	212 x 67	Aluminium - 8 channel
728-309	262 x 67	Aluminium - 10 channel
728-310	312 x 67	Aluminium - 12 channel
728-312	212 x 113.5	Aluminium - 16 channel
728-314	262 x 113.5	Aluminium - 20 channel
728-316	312 x 113.5	Aluminium - 24 channel

Note: 16, 20 and 24 channel panels have two rows of connector cut-outs

## Matching Standard Panel Sockets to suit all above Panels (rated to 210°C)

Standard sockets with rectangular front bezel and fixing plate with screws to suit all panels shown on this page as illustrated.

### Matching Standard Panel Sockets (rated to 210°C)

Code No	Description
724-324	Type K Standard Panel Socket
724-330	Type T Standard Panel Socket
724-336	Type J Standard Panel Socket
724-342	Type N Standard Panel Socket
724-348	Type RCB/SCB Standard Panel Socket
724-354	Copper Standard Panel Socket

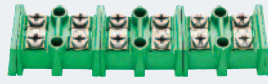
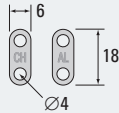
For advice, call one of our experienced engineers on:

01895 855555

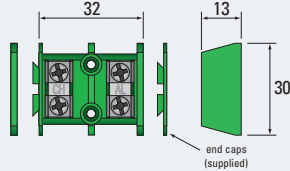
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# Ex Stock Thermocouple Connectors and Accessories

## Barrier Terminal Blocks (rated to 220°C)



Shown as three units connected



Type K illustrated  
Terminal lugs and end caps are included

These interconnecting barrier terminal blocks are available in various thermocouple types as well as copper, for other sensors such as RTDs. Each single block comes complete with end caps and terminal lugs which are marked to identify the alloy and polarity. All are colour coded for easy identification and are temperature rated to 220°C. They can be clipped together via notches on the side of each unit to build a multi-channel connection and can be screwed down using the mounting holes in the middle of each block. The number of blocks ordered should depend on the number of pairs of wires that are required to be connected.

- Available in thermocouple types K, T, J, N, RCB/SCB, E or B as well as Copper
- Supplied complete with terminal lugs and end caps
- Colour coded to IEC 60584-3 : 2007
- Connected together via notches on the side of each block
- Dimensions (including fins): 30x13x38.9mm (HxWxL)
- Fixing holes: To suit M2.5 screws on 15.4mm centre holes

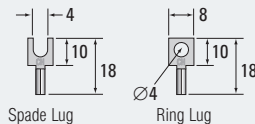
### Barrier Terminal Blocks (rated to 220°C)

Code No Description

726-200	Type K 1 Channel - Green
726-205	Type T 1 Channel - Brown
726-210	Type J 1 Channel - Black
726-215	Type N 1 Channel - Pink
726-220	Type RCB/SCB 1 Channel - Orange
726-225	Type E 1 Channel - Purple
726-230	Type B 1 Channel - Grey
726-235	Copper 1 Channel - White
726-130	Spare Lugs - Type K
726-132	Spare Lugs - Type T
726-134	Spare Lugs - Type J
726-136	Spare Lugs - Type N
726-138	Spare Lugs - Type RCB/SCB
726-142	Spare Lugs - Type E
726-144	Spare Lugs - Type B
726-140	Spare Lugs - Copper

## Thermocouple Spade and Ring Lugs

These lugs which are manufactured in the relevant thermocouple material are ideal for attaching to the end of thermocouple leads or cable. They are available in either spade or ring format and are sold in pairs.



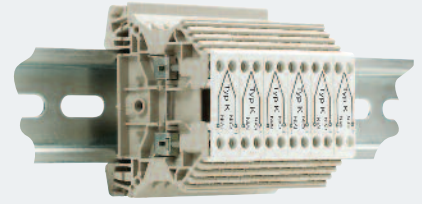
### Thermocouple Terminal Lugs

Code No Code No Description  
Spade Lugs Ring Lugs

724-540	724-560	Type K
724-542	724-562	Type T
724-544	724-564	Type J
724-546	724-566	Type N
724-548	724-568	Type RCA/SCA

## DIN Rail Mounted Thermocouple Connectors

These DIN Rail mounted terminal blocks are ideal for connecting thermocouple sensors and cable. The terminals are made from the appropriate thermocouple materials and are clearly marked up to avoid an incorrect connection. They can accept any size wire up to 2.0mm diameter. Wires are simply pushed in from the top and bottom of the block and screwed into position. They are rated for use between -50°C and +120°C.



A group of six Type K terminal blocks is illustrated

- Body: Temperature rated -50°C to +120°C
- Suitable for wire diameters up to 2.0mm
- Available for type K, T, J, N, R/S, E and B thermocouples
- Dimensions: 10 x 50 x 60 (WxDxH)
- To suit DIN Rail TS35 Slotted Punched and DIN TS35 Standard (no holes punched)
- End Plates and various lengths of DIN Rail are also available

### DIN Rail Mounted Thermocouple Connectors

Code No Description

726-300	Type K DIN Rail Connector
726-302	Type T DIN Rail Connector
726-304	Type J DIN Rail Connector
726-306	Type N DIN Rail Connector
726-308	Type R/S DIN Rail Connector
726-310	Type E DIN Rail Connector
726-312	Type B DIN Rail Connector
726-330	End Plate for DIN Rail Mounted Connectors
726-340	200mm TS35 DIN Rail
726-342	400mm TS35 DIN Rail
726-344	500mm TS35 DIN Rail

## Coiled Thermocouple Extension Leads

These extendable thermocouple leads are ideal for connecting a wide variety of applications. They are available in 1 or 2 metre lengths for types K, T & J plus 5 or 10 metre lengths for type K with the option of having either a miniature plug at each end or alternatively a miniature plug at one end and a miniature socket at the other.



### Coiled Thermocouple Extension Leads

Code No Code No Description  
Plug to Plug Plug to Socket

832-150	832-162	Type K - 1 metre
832-156	832-168	Type K - 2 metres
832-170	832-172	Type K - 5 metres
832-174	832-176	Type K - 10 metres
832-230	832-242	Type T - 1 metre
832-236	832-248	Type T - 2 metres
832-254	832-266	Type J - 1 metre
832-260	832-272	Type J - 2 metres

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Sensor Mounting Fittings

## Adjustable Compression Fittings

Our range of adjustable compression fittings are available in either brass or stainless steel. They are used to ensure the correct insertion length into the process and provide some degree of resistance to pressure applications. Fittings are offered with a tapered thread for a tight seal and are also available with a parallel thread.



### Brass Compression Fittings - Tapered Thread

Code No	Description
875-196	1.0mm x 1/8" BSPT Brass (ACF01B)
875-200	1.5mm x 1/8" BSPT Brass (ACF02B)
875-202	1.5mm x 1/8" NPT Brass (ACF70B)
875-204	1.5mm x 1/4" BSPT Brass (ACF69B)
875-206	1.5mm x 1/4" NPT Brass (ACF103B)
875-208	1.5mm x 1/2" BSPT Brass (ACF81B)
875-212	3.0mm x 1/8" BSPT Brass (ACF05B)
875-214	3.0mm x 1/8" NPT Brass (ACF71B)
875-216	3.0mm x 1/4" BSPT Brass (ACF59B)
875-218	3.0mm x 1/4" NPT Brass (ACF72B)
875-220	3.0mm x 1/2" BSPT Brass (ACF58B)
875-222	3.0mm x 1/2" NPT Brass (ACF54B)
875-224	4.5mm x 1/8" BSPT Brass (ACF55B)
875-226	4.5mm x 1/8" NPT Brass (ACF82B)
875-228	4.5mm x 1/4" BSPT Brass (ACF10B)
875-230	4.5mm x 1/4" NPT Brass (ACF104B)
875-232	4.5mm x 1/2" BSPT Brass (ACF11B)
875-234	4.5mm x 1/2" NPT Brass (ACF105B)
875-236	6.0mm x 1/8" BSPT Brass (ACF15B)
875-238	6.0mm x 1/8" NPT Brass (ACF18B)
875-240	6.0mm x 1/4" BSPT Brass (ACF16B)
875-242	6.0mm x 1/4" NPT Brass (ACF19B)
875-244	6.0mm x 1/2" BSPT Brass (ACF17B)
875-246	6.0mm x 1/2" NPT Brass (ACF20B)
875-248	8.0mm x 1/4" BSPT Brass (ACF27B)
875-250	8.0mm x 1/4" NPT Brass (ACF28B)
875-252	8.0mm x 1/2" BSPT Brass (ACF56B)
875-254	8.0mm x 1/2" NPT Brass (ACF74B)
875-300	Spare Olive - 1.0mm
875-304	Spare Olive - 1.5mm
875-308	Spare Olive - 3.0mm (1/8" fitting)
875-310	Spare Olive - 3.0mm (1/4" & 1/2" fitting)
875-312	Spare Olive - 4.5mm
875-316	Spare Olive - 6.0mm
875-320	Spare Olive - 8.0mm

Note: ACF codes cross reference to TC Direct custom built pages.

### ATEX / IECEx fittings now available !

#### Ex d, Ex e & Ex tD protection to Zone 1/21 areas

ATEX/IECEx compression fittings are now available and are essential when probes, sensors and other types of static elements need to be used in a hazardous area.

Please contact us on **01895 855555** for more details.

### Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

### Stainless Steel Compression Fittings - Tapered Thread

Code No	Description
875-444	0.5mm x 1/8" BSPT St./Steel (ACF80S)
875-445	0.75mm x 1/8" BSPT St./Steel (ACF108S)
875-446	1.0mm x 1/8" BSPT St./Steel (ACF01S)
875-450	1.5mm x 1/8" BSPT St./Steel (ACF02S)
875-452	1.5mm x 1/8" NPT St./Steel (ACF70S)
875-454	1.5mm x 1/4" BSPT St./Steel (ACF69S)
875-456	1.5mm x 1/4" NPT St./Steel (ACF103S)
875-458	1.5mm x 1/2" BSPT St./Steel (ACF81S)
875-462	3.0mm x 1/8" BSPT St./Steel (ACF05S)
875-464	3.0mm x 1/8" NPT St./Steel (ACF71S)
875-466	3.0mm x 1/4" BSPT St./Steel (ACF59S)
875-468	3.0mm x 1/4" NPT St./Steel (ACF72S)
875-470	3.0mm x 1/2" BSPT St./Steel (ACF58S)
875-472	3.0mm x 1/2" NPT St./Steel (ACF54S)
875-474	4.5mm x 1/8" BSPT St./Steel (ACF55S)
875-476	4.5mm x 1/8" NPT St./Steel (ACF82S)
875-478	4.5mm x 1/4" BSPT St./Steel (ACF10S)
875-482	4.5mm x 1/2" BSPT St./Steel (ACF11S)
875-484	4.5mm x 1/2" NPT St./Steel (ACF105S)
875-486	6.0mm x 1/8" BSPT St./Steel (ACF15S)
875-488	6.0mm x 1/8" NPT St./Steel (ACF18S)
875-490	6.0mm x 1/4" BSPT St./Steel (ACF16S)
875-492	6.0mm x 1/4" NPT St./Steel (ACF19S)
875-493	6.0mm x 3/8" BSPT St./Steel (ACF64S)
875-494	6.0mm x 1/2" BSPT St./Steel (ACF17S)
875-495	6.0mm x 1/2" NPT St./Steel (ACF20S)
875-496	6.0mm x 3/4" BSPT St./Steel (ACF73S)
875-498	8.0mm x 1/4" BSPT St./Steel (ACF27S)
875-500	8.0mm x 1/4" NPT St./Steel (ACF28S)
875-501	8.0mm x 3/8" BSPT St./Steel (ACF85S)
875-502	8.0mm x 1/2" BSPT St./Steel (ACF56S)
875-506	8.0mm x 1/2" NPT St./Steel (ACF74S)
875-510	8.0mm x 3/4" BSPT St./Steel (ACF83S)
409-480	12.7mm x 1/2" BSPT St./Steel (ACF45S)
875-518	12.7mm x 3/4" BSPT St./Steel (ACF75S)
409-486	15.9mm x 1/2" BSPT St./Steel (ACF47S)
875-526	15.9mm x 3/4" BSPT St./Steel (ACF49S)
409-492	21.3mm x 3/4" BSPT St./Steel (ACF90S)
875-600	Spare Olive - 1.0mm
875-604	Spare Olive - 1.5mm
875-608	Spare Olive - 3.0mm (1/8" fitting)
875-610	Spare Olive - 3.0mm (1/4" & 1/2" fitting)
875-612	Spare Olive - 4.5mm
875-616	Spare Olive - 6.0mm
875-620	Spare Olive - 8.0mm

Note: ACF codes cross reference to TC Direct custom built pages.

### Stainless Steel Compression Fittings - Parallel Thread

Code No	Description
875-550	3.0mm x 1/4" BSPP St./Steel (ACF95S)
875-554	3.0mm x 1/2" BSPP St./Steel (ACF60S)
875-560	4.5mm x 1/2" BSPP St./Steel (ACF63S)
875-570	6.0mm x 1/4" BSPP St./Steel (ACF94S)
875-574	6.0mm x 1/2" BSPP St./Steel (ACF61S)
875-580	8.0mm x 1/2" BSPP St./Steel (ACF62S)

Note: ACF codes cross reference to TC Direct custom built pages.

For advice, call one of our experienced engineers on:

**01895 855555**

**TC Direct**



# Ex Stock Sensor Mounting Fittings

## Termination Entry Glands

Our range of adjustable termination entry glands are available in either brass or stainless steel. They are used to provide a quick and easy method of mounting a sensor into a terminal enclosure or junction box. Use with matching locknut for an optimum fit.



### Brass Termination Entry Glands

Code No	Description
875-626	1.5mm x M16 x 1.5 Brass
875-632	3.0mm x M16 x 1.5 Brass
875-635	4.5mm x M16 x 1.5 Brass
875-641	6.0mm x M16 x 1.5 Brass
875-644	8.0mm x M16 x 1.5 Brass
875-647	3.0mm x M20 x 1.5 Brass
875-650	4.5mm x M20 x 1.5 Brass
875-656	6.0mm x M20 x 1.5 Brass
875-659	8.0mm x M20 x 1.5 Brass

### Stainless Steel Termination Entry Glands

Code No	Description
875-703	1.0mm x M16 x 1.5 Stainless Steel
875-706	1.5mm x M16 x 1.5 Stainless Steel
875-712	3.0mm x M16 x 1.5 Stainless Steel
875-715	4.5mm x M16 x 1.5 Stainless Steel
875-721	6.0mm x M16 x 1.5 Stainless Steel
875-724	8.0mm x M16 x 1.5 Stainless Steel
875-727	3.0mm x M20 x 1.5 Stainless Steel
875-730	4.5mm x M20 x 1.5 Stainless Steel
875-736	6.0mm x M20 x 1.5 Stainless Steel
875-739	8.0mm x M20 x 1.5 Stainless Steel

## PTFE Compression Fittings

Our range of adjustable PTFE compression fittings ensure the correct insertion length of a sensor into the process. PTFE will provide resistance to attack from virtually all known chemicals, oils and fluids.

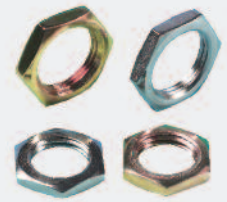


### PTFE Compression Fittings

Code No	Description
876-105	3.0mm x 1/8" BSPT PTFE
876-100	3.0mm x 1/4" BSPT PTFE
876-110	3.0mm x 1/2" BSPT PTFE
876-205	4.0mm x 1/8" BSPT PTFE
876-200	4.0mm x 1/4" BSPT PTFE
876-210	4.0mm x 1/2" BSPT PTFE
876-305	6.0mm x 1/8" BSPT PTFE
876-300	6.0mm x 1/4" BSPT PTFE
876-310	6.0mm x 1/2" BSPT PTFE
875-350	Spare PTFE Olive For 3.0mm
875-355	Spare PTFE Olive for 4.0mm
875-360	Spare PTFE Olive for 6.0mm

## Locknuts

A range of brass and stainless steel locknuts for use with our terminal entry glands. Ideal for junction box applications where a firm fixing of the terminal entry gland is required.



### Brass Locknuts

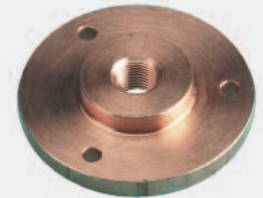
Code No	Description
875-753	M16 x 1.5 Brass Locknut
875-756	M20 x 1.5 Brass Locknut

### Stainless Steel Locknuts

Code No	Description
875-783	M16 x 1.5 Stainless Steel Locknut
875-786	M20 x 1.5 Stainless Steel Locknut

## Flange Plate

Suitable for vertically fixing sensors between 1.5mm and 8mm diameter into non pressure applications. By fixing the adjustable compression fitting at the right point along the sensor sheath, the flange plate can then either be fixed via the mounting holes in a variety of applications or alternatively used as a stop through a hole in the process wall for vertical applications.



- **Manufactured in either brass or stainless steel**
- **Dimensions: Flange - 50mm OD x 10mm thick overall. Main plate is 5mm thick. 3 x 4mm holes are drilled on a 40mm PCD at 120° angles.**
- **Tapped 1/8in BSPP to accept the relevant 1/8in BSP fittings which are also offered**
- **Suitable for use with either 1.5, 3.0, 4.5 or 6.0mm OD sensors**

### Flange Plate

Code No	Description
875-900	Brass Flange Plate
875-200	1.5mm x 1/8" BSPT Brass Fitting
875-212	3.0mm x 1/8" BSPT Brass Fitting
875-224	4.5mm x 1/8" BSPT Brass Fitting
875-236	6.0mm x 1/8" BSPT Brass Fitting
875-950	Stainless Steel Flange Plate
875-450	1.5mm x 1/8" BSPT St/Steel Fitting
875-462	3.0mm x 1/8" BSPT St/Steel Fitting
875-474	4.5mm x 1/8" BSPT St/Steel Fitting
875-486	6.0mm x 1/8" BSPT St/Steel Fitting

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Vacuum/High Pressure Sealing Assemblies

## Single Sensor Feedthrough Sealing Assemblies

Our range of high grade sealing assemblies are specifically designed for applications where certainty is required. Depending on the sealant selected, pressures of up to 700 bar and temperatures of -200°C to +870°C can be achieved.



ATEX/IECEX versions now available!  
Contact us for details.

These particular assemblies are for use with single sensors or tubes. In applications where multiple sensors or tubes require sealing with one assembly we offer a multiple sensor sealing assembly, which can also be found in this section. A variety of sealants are available and a guide is given below to help you select the most appropriate one for your application.

Sealant types:

### Neoprene (Green) - Temperature range -40°C to +90°C

Has the resilience of natural rubber but with better resistance to oil, petrol, ozone, weather and heat. Excellent physical 'memory' for temperature cycling applications, moderate electrical resistivity. Reusable in most cases.

### Viton (Brown) - Temperature range -40°C to +225°C

Retains its mechanical properties at high temperatures. Resistant to oils, solvents, fuels and corrosive industrial chemicals. Reusable in most cases.

### PTFE (White) - Temperature range -200°C to +250°C

Least permeable to gases. Has a natural lubricity. Resists the adhesion of foreign matter. Reusable in most cases.

### Lava (Grey mixture) - Temperature range -200°C to +870°C

Low thermal co-efficient, good electrical resistivity. Crushes to a powder under compression. Slightly porous to light gases and steam. Not recommended for vacuum applications. Lava sealants are not reusable.

Other sealants including Grafitite™ are also available. Please contact us if you require assistance in the selection of the correct sealant.

- For use where probes or other sensors must pass through a pressure or environmental boundary
- Ideal for use in vacuum applications and are rated to 6.67 x 10<sup>-4</sup> Pa (6.67 x 10<sup>-6</sup> mbar) for assemblies with Neoprene, Viton or PTFE sealants. Lava sealants are not recommended for use in vacuum applications
- Our sealant glands maintain the integrity of the seal at the point of the feedthrough penetration
- They employ 'soft sealant' technology so that probes can be adjusted, removed and replaced yet are not deformed during installation
- Pressure, vacuum and environmental sealing applications are satisfied in many industries including process control and power generation to pharmaceutical, semi conductor fabrication and steel production
- Overall cost of ownership is often reduced when compared to other sealant techniques through reduction in installation time, downtime and the cost of replacement parts
- Pressure ratings as shown in the tables below (which have been determined at 20°C with a stainless steel rod as the element. Caution: These sealing glands should be installed by suitably qualified personnel in accordance with relevant health and safety rules and with proper regard to safe working practices
- Stainless Steel reducing bushes are available as an accessory
- All assemblies are shipped pre lubricated. A 10ml lubricant pack is available for the relubrication of threads, caps and follower at a later date
- Assemblies with other thread sizes including NPT, BSPP and ISO are available on request. For NPT use prefix 940- instead of 941
- Further details and dimensions are available on request

### Neoprene Sealant - Temperature Range -40°C to +90°C

Code No	Diameter of sensor (mm)	Gland Thread Size	Pressure rating (bar)
941-102	1.0	1/8" BSPT	350
941-105	1.5	1/8" BSPT	500
941-108	3.0	1/8" BSPT	350
941-111	3.0	1/4" BSPT	550
941-114	6.0	1/4" BSPT	450
941-117	6.0	1/2" BSPT	550
941-120	8.0	1/2" BSPT	300

### Viton Sealant - Temperature Range -40°C to +225°C

Code No	Diameter of sensor (mm)	Gland Thread Size	Pressure rating (bar)
941-140	1.0	1/8" BSPT	350
941-143	1.5	1/8" BSPT	500
941-146	3.0	1/8" BSPT	550
941-149	3.0	1/4" BSPT	700
941-152	6.0	1/4" BSPT	700
941-155	6.0	1/2" BSPT	550
941-158	8.0	1/2" BSPT	450
941-161	12.7 (1/2")	3/4" BSPT	200
941-164	15.9 (5/8")	3/4" BSPT	150

### PTFE Sealant - Temperature Range -200°C to +250°C

Code No	Diameter of sensor (mm)	Gland Thread Size	Pressure rating (bar)
941-184	1.0	1/16" BSPT	200
941-187	1.0	1/8" BSPT	200
941-190	1.5	1/16" BSPT	150
941-193	1.5	1/8" BSPT	150
941-196	3.0	1/8" BSPT	100
941-199	3.0	1/4" BSPT	250
941-202	6.0	1/4" BSPT	150
941-205	6.0	1/2" BSPT	200
941-208	8.0	1/2" BSPT	150
941-211	12.7 (1/2")	3/4" BSPT	75
941-214	15.9 (5/8")	3/4" BSPT	75
941-217	21.3 (1/2" pipe)	1" BSPT	75

### Lava Sealant - Temperature Range -200°C to +870°C

Code No	Diameter of sensor (mm)	Gland Thread Size	Pressure rating (bar)
941-242	1.5	1/8" BSPT	550
941-245	3.0	1/8" BSPT	450
941-248	3.0	1/4" BSPT	700
941-251	6.0	1/4" BSPT	700
941-254	6.0	1/2" BSPT	700
941-257	8.0	1/2" BSPT	700
941-260	12.7 (1/2")	3/4" BSPT	400
941-263	15.9 (5/8")	3/4" BSPT	300

### Accessories

Code No	Description
940-930	KF40-150 Flange Attached to Fitting
940-935	KF25-100 Flange Attached to Fitting
941-910	Reducing Bush 1/4" BSPT (M) to 1/8" BSPP (F)
941-915	Reducing Bush 1/2" BSPT (M) to 1/8" BSPP (F)
941-920	Reducing Bush 1/2" BSPT (M) to 1/4" BSPP (F)
941-925	Reducing Bush 3/4" BSPT (M) to 1/2" BSPP (F)
941-950	Adaptor Bush 1/8" BSPT (M) to 1/4" BSPP (F)
941-955	Adaptor Bush 1/8" BSPT (M) to 1/2" BSPP (F)
941-960	Adaptor Bush 1/4" BSPT (M) to 1/2" BSPP (F)
941-965	Adaptor Bush 1/2" BSPT (M) to 3/4" BSPP (F)
940-900	10ml Lubricant Pack

For advice, call one of our experienced engineers on:

☎ 01895 855555

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# Ex Stock Vacuum/High Pressure Sealing Assemblies

## Multiple Sensor Feedthrough Sealing Assemblies

Our range of high grade sealing assemblies are specifically designed for applications where certainty is required. Depending on the sealant selected, pressures of up to 700 bar and temperatures of -200°C to +870°C can be achieved.

**ATEX/IECEx versions now available!**  
Contact us for details.



These particular assemblies are for use with multiple sensors or tubes. In applications where single sensors or tubes require sealing with one assembly we offer a single sensor sealing assembly, which can also be found in this section. A variety of sealants are available and a guide is given below to help you select the most appropriate one for your application.

Sealant types:

### Neoprene - Temperature range -40°C to +90°C

Has the resilience of natural rubber but with better resistance to oil, petrol, ozone, weather and heat. Excellent physical memory for temperature cycling applications, moderate electrical resistivity. Reusable in most cases.

### Viton - Temperature range -40°C to +225°C

Retains its mechanical properties at high temperatures. Resistant to oils, solvents, fuels and corrosive industrial chemicals. Reusable in most cases.

### PTFE - Temperature range -200°C to +250°C

Least permeable to gases. Has a natural lubricity. Resists the adhesion of foreign matter. Reusable in most cases.

### Lava - Temperature range -200°C to +870°C

Low thermal co-efficient, good electrical resistivity. Crushes to a powder under compression. Slightly porous to light gases and steam. Not recommended for vacuum applications. Lava sealants are not reusable.

Other sealants including Graffite™ are also available. Please contact us if you require assistance in the selection of the correct sealant.

- For use where more than one probe or other sensor must pass through a pressure or environmental boundary
- Suited for pressure applications up to 700 bar dependent on assembly selected
- Ideal for use in vacuum applications and are rated to 6.67 x 10<sup>-1</sup> Pa (6.67 x 10<sup>-6</sup> mbar) for assemblies with Neoprene, Viton or PTFE sealants. Lava sealants are not recommended for use in vacuum applications
- Our sealant glands maintain the integrity of the seal at the point of the feedthrough penetration
- They employ 'soft sealant' technology so that probes can be adjusted, removed and replaced yet are not deformed during installation
- Pressure, vacuum and environmental sealing applications are satisfied in many industries including process control and power generation to pharmaceutical, semi conductor fabrication and steel production
- Overall cost of ownership is often reduced when compared to other sealant techniques through reduction in installation time, downtime and the cost of replacement parts
- Pressure ratings are as shown in the tables below (which have been determined at 20°C with a stainless steel rod as the element). Caution: These sealing glands should be installed by suitably qualified personnel in accordance with relevant health and safety rules and with proper regard to safe working practices
- Stainless Steel reducing bushes are available as an accessory
- All assemblies are shipped pre lubricated. A 10ml lubricant pack is available for the relubrication of threads, caps and follower at a later date
- Assemblies with other thread sizes including NPT, BSPP and ISO are available on request. For NPT use prefix 940- instead of 941
- Further details and dimensions are available on request

*Note: Stub elements to close unused holes must be restrained to prevent ejection under pressure*

### Neoprene Sealant - Temperature Range -40°C to +90°C

Code No	Diameter of sensors (mm)	No. of Sensors	Gland Thread Size	Pressure rating (bar)
941-280	0.5	2	1/8" BSPT	250
941-283	0.5	2	1/4" BSPT	250
941-286	0.5	4	1/8" BSPT	250
941-289	0.5	4	1/4" BSPT	250
941-292	1.0	2	1/4" BSPT	250
941-295	1.0	4	1/4" BSPT	250
941-298	1.5	2	1/2" BSPT	400
941-301	1.5	3	1/2" BSPT	400
941-304	1.5	4	1/2" BSPT	400

### Viton Sealant - Temperature Range -40°C to +225°C

Code No	Diameter of sensors (mm)	No. of Sensors	Gland Thread Size	Pressure rating (bar)
941-324	0.5	2	1/8" BSPT	250
941-327	0.5	2	1/4" BSPT	250
941-330	0.5	4	1/8" BSPT	250
941-333	0.5	4	1/4" BSPT	250
941-336	1.0	2	1/4" BSPT	500
941-339	1.0	4	1/4" BSPT	500
941-342	1.5	2	1/2" BSPT	450
941-345	1.5	3	1/2" BSPT	450
941-348	1.5	4	1/2" BSPT	450
941-351	1.5	6	3/4" BSPT	400
941-354	1.5	8	3/4" BSPT	400
941-357	3.0	2	3/4" BSPT	350

### PTFE Sealant - Temperature Range -200°C to +250°C

Code No	Diameter of sensors (mm)	No. of Sensors	Gland Thread Size	Pressure rating (bar)
941-366	0.5	2	1/8" BSPT	250
941-369	0.5	2	1/4" BSPT	250
941-372	0.5	4	1/8" BSPT	250
941-375	0.5	4	1/4" BSPT	250
941-378	1.0	2	1/4" BSPT	300
941-381	1.0	4	1/4" BSPT	300
941-384	1.5	2	1/2" BSPT	250
941-387	1.5	3	1/2" BSPT	250
941-390	1.5	4	1/2" BSPT	250
941-393	1.5	6	3/4" BSPT	250
941-396	1.5	8	3/4" BSPT	250
941-399	3.0	2	3/4" BSPT	250

### Lava Sealant - Temperature Range -200°C to +870°C

Code No	Diameter of sensors (mm)	No. of Sensors	Gland Thread Size	Pressure rating (bar)
941-428	0.5	2	1/8" BSPT	400
941-431	0.5	2	1/4" BSPT	400
941-434	0.5	4	1/8" BSPT	400
941-437	0.5	4	1/4" BSPT	400
941-440	1.0	2	1/4" BSPT	700
941-443	1.0	4	1/4" BSPT	700
941-446	1.5	2	1/2" BSPT	700
941-449	1.5	3	1/2" BSPT	700
941-452	1.5	4	1/2" BSPT	700
941-455	1.5	6	3/4" BSPT	550
941-458	1.5	8	3/4" BSPT	550
941-461	3.0	2	3/4" BSPT	550

### Accessories

For Accessories see Accessory Box in Single Sensor Feedthrough Section

**Fax: 01895 857777**

**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock High Density Feedthrough Assemblies

## High Density Wire Feedthrough Assemblies for Thermocouple, RTD or Equipment Wire Applications



**ATEX/IECEx versions now available!**  
Contact us for details.

Our feedthrough assemblies comprise a high density wire feedthrough sealed with a sealing gland. A PTFE lined stainless steel tube is swaged over 12, 24, 40 or 60 bundled solid 0.5mm diameter, PTFE insulated Thermocouple or Copper conductors to make the high density feedthrough. The swaged tube is then mounted in a sealing gland. Assemblies are supplied with 500mm of wire on each side of the feedthrough, however, longer leads can be made to order)

- **Continuous wire feedthroughs for thermocouples types K, T, J or N (others thermocouple types available on request), 2,3 or 4 wire RTD's as well as other low voltage signalling requiring copper leads**
- **12, 24, 40 or 60 bundled solid 0.5mm diameter, PTFE insulated Thermocouple or Copper conductors**
- **No epoxy or potting required**
- **Feedthrough tube diameters are:**  
4.5mm: 6 T/C's or 4 three wire RTD's or 12 equipment wires  
6.0mm: 12 T/C's or 8 three wire RTD's or 24 equipment wires  
8.0mm: 20 T/C's or 13 three wire RTD's or 40 equipment wires  
10.0mm: 30 T/C's or 20 three wire RTD's or 60 equipment wires
- **Offered as standard with a PTFE Sealant, however, other sealants including Neoprene, Viton and Lava are also available**
- **Suited for pressure applications up to 350 bar @20°C**
- **Leak rate:  $1 \times 10^{-6}$  cm<sup>3</sup>/sec, Helium @20°C, 1 Atm supplied**
- **Ideal for use in vacuum applications and are rated to  $6.67 \times 10^{-4}$  Pa ( $6.67 \times 10^{-6}$  mbar) for assemblies with Neoprene, Viton or PTFE sealants. Lava sealants are not recommended for use in vacuum applications**
- **Tube length is typically 80 or 100mm, but can be made to suit customers specific requirements**
- **All wires are marked on each side of the feedthrough for identification**
- **A full custom build assembly service available on request where the following options can be chosen to order. Other thermocouple types, alternative sealants such as Neoprene, Viton or Lava, alternative thread sizes, differing tube lengths and lead lengths, a specific number of wires as well as a mixture of thermocouple and equipment wires within the same assembly**
- **Assemblies with other thread sizes including NPT, BSPP and ISO are available on request. For NPT use prefix 940- instead of 941**
- **Temperature rated -40°C to +125°C**
- **Electrically rated 100V DC @ 500 mA**

### for use with Type K Thermocouples

Code No	Number of pairs	Gland Thread Size	Pressure rating (bar)
941-504	6	1/4" BSPT	200
941-507	12	1/4" BSPT	150
941-510	20	1/2" BSPT	150
941-513	30	1/2" BSPT	100

### for use with Type T Thermocouples

Code No	Number of pairs	Gland Thread Size	Pressure rating (bar)
941-526	6	1/4" BSPT	200
941-529	12	1/4" BSPT	150
941-532	20	1/2" BSPT	150
941-535	30	1/2" BSPT	100

### for use with Type J Thermocouples

Code No	Number of pairs	Gland Thread Size	Pressure rating (bar)
941-552	6	1/4" BSPT	200
941-555	12	1/4" BSPT	150
941-558	20	1/2" BSPT	150
941-561	30	1/2" BSPT	100

### for use with Type N Thermocouples

Code No	Number of pairs	Gland Thread Size	Pressure rating (bar)
941-585	6	1/4" BSPT	200
941-588	12	1/4" BSPT	150
941-591	20	1/2" BSPT	150
941-594	30	1/2" BSPT	100

### for use with RTD's or Equipment Wiring

Code No	Number of cores	Max No. of RTD's*	Gland Thread Size	Pressure rating (bar)
941-572	12	4	1/4" BSPT	200
941-575	24	8	1/4" BSPT	150
941-578	40	13	1/2" BSPT	150
941-581	60	20	1/2" BSPT	100

\*Maximum number of RTD's based on three wire configuration

## Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

For advice, call one of our experienced engineers on:

☎ 01895 855555

**TC**  
**Direct**

# Ex Stock Electrode Sealing Glands

## Electrode Sealing Glands

These pressure/vacuum sealing assemblies are supplied with single integral electrodes, and provide electrical feedthroughs for high power and high voltage supply connections in a range of electrode sizes. Standard glands are offered with Copper electrodes pre-installed in the gland and are torqued ready for installation. (Assemblies with



**ATEX/IECEx versions now available!  
Contact us for details.**

Nickel or Stainless Steel electrodes are available on request.) They can also be supplied untorqued and without electrodes. Two styles are offered. The first offers our range of soft sealants along with ceramic insulators rated 2000V DC @ 200A max. The soft sealants can be replaced at a future date if retro fitting is required. The second style has a single piece PTFE combined sealant and insulator rated 8000V DC @ 200A max. A guide is given below to help you select the most appropriate sealant type for your application.

Sealant types are as follows:-

### Viton - Temperature range -40°C to +225°C

Retains its mechanical properties at high temperatures. Resistant to oils, solvents, fuels and corrosive industrial chemicals. Reusable in most cases.

### PTFE - Temperature range -200°C to +250°C

Least permeable to gases. Has a natural lubricity. Resists the adhesion of foreign matter. Reusable in most cases.

### Lava - Temperature range -200°C to +380°C

Low thermal co-efficient, good electrical resistivity. Crushes to a powder under compression. Slightly porous to light gases and steam. Not recommended for vacuum applications. Lava sealants are not reusable. A version rated to 870°C is available on request which uses a stainless steel electrode, please contact us for further information.

- **Seals a single electrode**
- **For use in gas or non conductive applications**
- **Suited for pressure applications up to 550 bar dependent on assembly selected**
- **Ideal for use in vacuum applications and are rated to  $6.67 \times 10^{-4}$  Pa ( $6.67 \times 10^{-6}$  mbar) for assemblies with Viton or PTFE sealants. Lava sealants are not recommended for use in vacuum applications**
- **Electrodes have tapped threads and are fitted with two nuts and washers at each end for ring tongue or lug type cable terminals**
- **Our sealant glands maintain the integrity of the seal at the point of the feedthrough penetration**
- **They employ 'soft sealant' technology so that probes can be adjusted, removed and replaced yet are not deformed during installation**
- **Power feedthrough applications are satisfied in many industries including vacuum furnaces, autoclaves, equipment enclosures, transformers and environmental chambers as well as high voltage feedthroughs to reactor vessels**
- **Overall cost of ownership is often reduced when compared to other sealant techniques through reduction in installation time, downtime and the cost of replacement parts**
- **Pressure ratings are as shown in the tables below (which have been determined at 20°C with a stainless steel rod as the element). Caution: These sealing glands should be installed by suitably qualified personnel in accordance with relevant health and safety rules and with proper regard to safe working practices**
- **Stainless Steel Thread Adaptors are available as an accessory**
- **All assemblies are shipped pre lubricated. A 10ml lubricant pack is available for the relubrication of threads, caps and follower at a later date**
- **Assemblies with other thread sizes including NPT, BSPP and ISO are available on request. For NPT use prefix 940- instead of 941**
- **Further details and dimensions are available on request**

### Rated to 2000V DC @ 200A max - Viton Temperature Range -40°C to +225°C

Code No	Current Rating (A)	Gland Thread Size	Pressure rating (bar)
941-657	40	1/4" BSPT	550
941-663	95	1/2" BSPT	400
941-672	200	3/4" BSPT	150

### Rated to 2000V DC @ 200A max - PTFE Temperature Range -200°C to +250°C

Code No	Current Rating (A)	Gland Thread Size	Pressure rating (bar)
941-683	40	1/4" BSPT	350
941-689	95	1/2" BSPT	150
941-698	200	3/4" BSPT	150

### Rated to 2000V DC @ 200A max - Lava Temperature Range -200°C to +380°C

Code No	Current Rating (A)	Gland Thread Size	Pressure rating (bar)
941-729	40	1/4" BSPT	600
941-735	95	1/2" BSPT	450
941-744	200	3/4" BSPT	200

### Rated to 8000V DC @ 200A max - PTFE Temperature Range -200°C to +250°C

Code No	Current Rating (A)	Gland Thread Size	Pressure rating (bar)
941-755	40	1/4" BSPT	80
941-761	95	1/2" BSPT	80
941-767	200	3/4" BSPT	40

## Payment

An account can instantly be opened for you! Alternatively, if you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



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# Ex Stock Temperature Transmitters

## Thermocouple Transmitter - Head Mounted

Our microprocessor based range of linearised thermocouple transmitters are factory ranged for your convenience. They offer high accuracy yet low cost and are ideal for a variety of industrial applications. They can be optionally DIN rail mounted. These transmitters need a regulated power supply, please specify part number 748-202 if required.



- Available pre-configured in a variety of ranges for thermocouple types K, T or J or alternatively not ranged for customer configuration for K, T, J, N, E, R, S and B thermocouple types
- Fixed ranges for quick connection to your system
- Provides a 4-20mA output signal
- Suits all standard industrial connection heads with 33mm centre hole fixings or can be optionally DIN rail mounted
- CE marked

### Specifications:

Power Supply: 7-30 V DC

Operating Temperature Range: -40°C / +85°C

Error Transmission: 0.1% (min 0.5°C for Thermocouple)

Response Time (10..90%): <1 s

Temperature linearised

Burnout: Upscale default (programmable with software)

Connection: Push Fit Terminals for quick connection

Dimensions: 43.7mm dia x 20mm high body



### Thermocouple Transmitter - Fixed Range

Code No	Description
747-150	Type K -25°C/+150°C
747-154	Type K 0°C/+200°C
747-158	Type K 0°C/+300°C
747-162	Type K 0°C/+600°C
747-166	Type K 0°C/+900°C
747-170	Type K 0°C/+1200°C
747-174	Type T -25°C/+150°C
747-178	Type T 0°C/+300°C
747-182	Type T 0°C/+400°C
747-186	Type J 0°C/+300°C
747-190	Type J 0°C/+600°C
747-194	Type J 0°C/+800°C
747-910	Optional DIN rail mounting kit
748-202	24V Regulated Loop Power Supply

### Thermocouple Transmitter - Adjustable

Code No	Description
747-198	Transmitter for Thermocouple
747-465	TX-PROG Configuration Software Kit
747-910	Optional DIN rail mounting kit
748-202	24V Regulated Loop Power Supply

### Set Up Service for Transmitters

Code No	Description
747-999	Set up of Sensor type and range

For 10 or more units, the above set up is provided free of charge.

## Pt100 Transmitter - Head Mounted

Our microprocessor based range of linearised Pt100 transmitters are factory ranged for your convenience. They offer high accuracy yet low cost and are ideal for a variety of industrial applications. They can be optionally DIN rail mounted. These transmitters need a regulated power supply, please specify part number 748-202 if required.



- For easy connection to 2, 3 or 4 wire Pt100 sensors
- Fixed ranges for quick connection to your system
- Provides a 4-20mA output signal
- Suits all standard industrial connection heads with 33mm centre hole fixings or can be optionally DIN rail mounted
- CE marked

### Specifications:

Power Supply: 7-30 V DC

Operating Temperature Range: -40°C / +85°C

Error Transmission: 0.1% (min 0.1°C)

Response Time (10..90%): <220ms

Fully linearised

Burnout: Programmable (Upscale / Downscale)

Connection: Push Fit Terminals for quick connection

Dimensions: 43.7mm dia x 20mm high body



### Pt100 Transmitter - Fixed Range

Code No	Description
747-230	Pt100 -25°C/+100°C
747-234	Pt100 0°C/+100°C
747-238	Pt100 0°C/+150°C
747-242	Pt100 0°C/+200°C
747-246	Pt100 0°C/+300°C
747-250	Pt100 0°C/+400°C
747-910	Optional DIN rail mounting kit
748-202	24V Regulated Loop Power Supply

### Pt100 Transmitter - Adjustable

Code No	Description
747-254	Transmitter for Pt100
747-465	TX-PROG Configuration Software Kit
747-910	Optional DIN rail mounting kit
748-202	24V Regulated Loop Power Supply

### Set Up Service for Transmitters

Code No	Description
747-999	Set up of Sensor type and range

For 10 or more units, the above set up is provided free of charge.

## Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

For advice, call one of our experienced engineers on:

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TC  
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# Ex Stock Temperature Transmitters

## Thermocouple and Pt100 Transmitter - Head Mounted and Fully Isolated

Our range of microprocessor based, fully isolated head mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the USB port of your PC as well as instructions. They can be optionally DIN rail mounted. These transmitters need a regulated power supply, please specify part number 748-202 if required.



- Available pre-configured in a variety of ranges for thermocouple types K, T or J or RTD Pt100 or alternatively not ranged for customer configuration for K, T, J, N, E, R, S & B and RTD Pt100/Pt1000
- Fully isolated and Temperature Linearised
- Provides a 4-20mA output signal
- Suits all standard industrial connection heads with 33mm centre hole fixings or can be optionally DIN rail mounted
- CE marked

### Specifications:

Fully Isolated & Temperature Linearised

Power Supply: 7-30 V DC

Operating Temperature Range: -40°C / +85°C

Error Transmission: 0.1% (Measurement range) or 0.1°C (Pt100) and 0.5°C (Thermocouple)

Response Time (10..90%): <620ms

Burnout: Programmable (Upscale / Downscale) - Upscale standard

Connection: Push Fit Terminals for quick connection

RFI protected

Dimensions: 43.7mm dia x 20mm high body



## Fully Isolated Head Mounted Transmitter - Fixed Range

Code No Description

747-270 Type K -25°C/+50°C

747-274 Type K 0°C/+100°C

747-278 Type K 0°C/+200°C

747-282 Type K 0°C/+300°C

747-286 Type K 0°C/+600°C

747-290 Type K 0°C/+900°C

747-294 Type K 0°C/+1200°C

747-298 Type T -25°C/+50°C

747-302 Type T 0°C/+100°C

747-306 Type T 0°C/+300°C

747-310 Type T 0°C/+400°C

747-314 Type J 0°C/+100°C

747-318 Type J 0°C/+300°C

747-322 Type J 0°C/+600°C

747-326 Type J 0°C/+800°C

747-330 Pt100 -25°C/+50°C

747-334 Pt100 0°C/+100°C

747-338 Pt100 0°C/+150°C

747-342 Pt100 0°C/+200°C

747-346 Pt100 0°C/+300°C

747-350 Pt100 0°C/+400°C

747-910 Optional DIN rail mounting kit

748-202 24V Regulated Loop Power Supply

## Fully Isolated Head Mounted Transmitter - Adjustable

Code No Description

747-354 Transmitter for Thermocouple or Pt100

747-465 TX-PROG Configuration Software Kit

747-910 Optional DIN rail mounting kit

748-202 24V Regulated Loop Power Supply

## Set Up Service for Transmitters

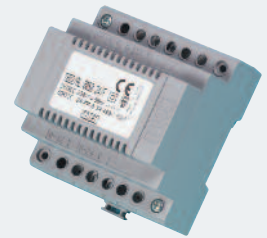
Code No Description

747-999 Set up of Sensor type and range

For 10 or more units, the above set up is provided free of charge.

## 24V Unregulated Loop Power Supply

Our DIN rail mounting loop power supplies 0.5A, so can be used to power up to twenty 4-20mA devices. They have a built in transformer that ensures galvanic separation. They also have fused protection.



- DIN Rail mounting
- Input supply voltage: Nominal 230V AC
- Output voltage: 24V DC
- Output current: 0.5 A (suitable for up to 20 devices)
- Fused protection
- Power consumption: 12W
- Dimensions: 93x88x67mm (HxWxD)
- Protection class: IP20
- Operating ambient temperature: -10°C to 40°C



## 24V Unregulated Loop Power Supply

Code No Description

748-200 24V Unregulated Power Supply

This power supply cannot be used with some of our transmitters. If unsure, please purchase the regulated version or contact us for advice.

## 24V Regulated Switch Mode Loop Power Supply

Our DIN rail mounting regulated switch mode loop power supply provides 0.4A, so can be used to power up to fifteen 4-20mA devices. Switching technology allows high efficiency from a light and small device. The regulated 24 VDC output is very accurate and stable and is not affected by the load power level.



- DIN Rail mounting
- Input supply voltage: Nominal 230V AC
- Output regulated voltage: 24V DC high accuracy +/- 3%
- Output current: 0.4 A (suitable for up to 15 devices)
- No-load voltage 24 VDC
- High efficiency of 85% and very low no load input power 0.3 W
- Electronic protection for overload, short circuit and over voltage
- Power consumption max.: 10W
- Dimensions: 93x17.5x68mm (HxWxD), weight 0.11 Kg
- Protection class: IP20
- Operating ambient temperature: -10°C to 40°C



## Regulated Switch Mode Loop Power Supply

Code No Description

748-202 24V Regulated Switch Mode Loop Power Supply

**Fax: 01895 857777**

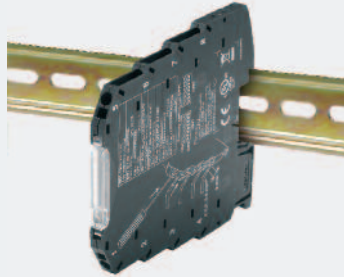
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Temperature Transmitters

## Thermocouple and Pt100 Transmitter - Slim-line, DIN Rail Mounted

Our new range of slim-line microprocessor based, fully isolated DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. The body is a tiny 6.2mm thick - a huge space saving compared to most other DIN rail models. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications via a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the USB port of your PC as well as instructions.



- Available pre-configured in a variety of ranges for thermocouple types K, T or J or RTD Pt100 or alternatively not ranged for customer configuration for K, T, J, N, E, R, S & B and RTD Pt100/Pt1000
- Fully isolated and Temperature Linearised
- Provides a 4-20mA output signal
- For DIN rail mounting
- Tiny Dimensions! (6.2mm x 93.1mm x 102.5mm body)
- CE marked

### Specifications:

Fully Isolated & Temperature Linearised

Power Supply: 7-30 V DC

Operating Temperature Range: -20°C / +65°C

Error Transmission: 0.1% (Measurement) or (min.) 0.1°C (Pt100) / 0.5°C (Thermocouple)

Response Time (10..90%): <620 ms

Burnout: Factory set to Upscale, programmable with TXPROG software

Connection: Push Fit Terminals for quick connection

RFI protected



### Slim-line DIN Rail Mounted Transmitter - Fixed Range

Code No Description

748-303	Type K -25°C/+50°C
748-306	Type K 0°C/+200°C
748-309	Type K 0°C/+300°C
748-312	Type K 0°C/+600°C
748-315	Type K 0°C/+900°C
748-318	Type K 0°C/+1200°C
748-321	Type T -25°C/+100°C
748-324	Type T 0°C/+300°C
748-327	Type T 0°C/+400°C
748-330	Type J 0°C/+300°C
748-333	Type J 0°C/+600°C
748-336	Type J 0°C/+800°C
748-339	Pt100 -25°C/+50°C
748-342	Pt100 0°C/+100°C
748-345	Pt100 0°C/+200°C
748-348	Pt100 0°C/+300°C
748-351	Pt100 0°C/+400°C

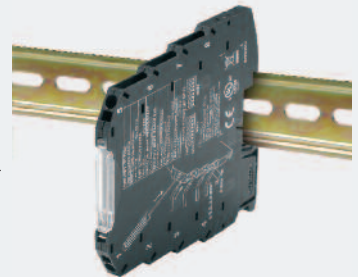
### Slim-line DIN Rail Mounted Transmitter - Adjustable

Code No Description

748-354	Slim-line Adjustable DIN Rail Transmitter
747-465	TX-PROG Configuration Software Kit

## Pt100 Transmitter - Slim-line, DIN Rail Mounted

Our new range of slim-line microprocessor based DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. The body is a tiny 6.2mm thick - a huge space saving compared to most other DIN rail models. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications via a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the USB port of your PC as well as instructions.



- For easy connection to 2, 3 or 4 wire Pt100 sensors
- Fixed ranges for quick connection to your system
- Temperature Linearised
- Provides a 4-20mA output signal
- For DIN rail mounting
- Tiny Dimensions! (6.2mm x 93.1mm x 102.5mm body)
- CE marked

### Specifications:

Power Supply: 7-30 V DC

Operating Temperature Range: -20°C / +65°C

Error Transmission: 0.1% (min 0.1°C)

Response Time (10..90%): <220 ms

Burnout: Factory set to Upscale, programmable with TXPROG software

Connection: Push Fit Terminals for quick connection



### Slim-line Pt100 DIN Rail Mounted Transmitter - Fixed Range

Code No Description

748-403	Pt100 -25°C/+50°C
748-406	Pt100 0°C/+100°C
748-409	Pt100 0°C/+150°C
748-412	Pt100 0°C/+200°C
748-415	Pt100 0°C/+300°C
748-418	Pt100 0°C/+400°C

### Slim-line Pt100 DIN Rail Mounted Transmitter - Adjustable

Code No Description

748-421	Slim-line Adjustable DIN Rail Transmitter
747-465	TX-PROG Configuration Software Kit

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# Ex Stock Temperature Transmitters

## Thermocouple and Pt100 Transmitter - DIN Rail Mounted

Our range of microprocessor based DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the serial port of your PC as well as instructions.



- Available pre configured in a variety of ranges for thermocouple types K, T or J and RTD Pt100 or alternatively not ranged for customer configuration
- Temperature Linearised
- Provides a 4-20mA output signal
- For DIN rail mounting
- CE marked

### Specifications:

Minimum Span: Thermocouple 50°C, Pt100 25°C

Temperature Linearised

Power supply: 10-40V DC

Operating temperature range: -30°C/+85°C

Thermocouple type: Cold junction drift 0.01°C/°C

Pt100 type: Maximum sensor line resistance 500 ohms, Sensor lead effect 0.001°C/ohm

Burnout: Upscale (max 35mA)

Power supply effect: ±0.001%/V

RFI protected

Dimensions: 79mm high x 22.5mm wide x 99mm deep



## DIN Rail Mounted Transmitter - Fixed Range

Code No Description

747-500 Type K -25°C/+50°C

747-504 Type K 0°C/+100°C

747-508 Type K 0°C/+200°C

747-512 Type K 0°C/+300°C

747-516 Type K 0°C/+600°C

747-520 Type K 0°C/+900°C

747-524 Type K 0°C/+1200°C

747-528 Type T -25°C/+50°C

747-532 Type T 0°C/+100°C

747-536 Type T 0°C/+300°C

747-540 Type T 0°C/+400°C

747-544 Type J 0°C/+100°C

747-548 Type J 0°C/+300°C

747-552 Type J 0°C/+600°C

747-556 Type J 0°C/+800°C

747-560 Pt100 -25°C/+50°C

747-564 Pt100 0°C/+100°C

747-568 Pt100 0°C/+150°C

747-572 Pt100 0°C/+200°C

747-576 Pt100 0°C/+300°C

747-580 Pt100 0°C/+400°C

## DIN Rail Mounted Transmitter - Adjustable

Code No Description

747-590 Adjustable Transmitter for Thermocouple or Pt100

747-460 Software, Connection Kit and Instructions for ranging

## Set Up Service for Transmitters

Code No Description

747-999 Set up of Sensor type and range

For 10 or more units, the above set up is provided free of charge.

## Fixed Range Thermocouple or Pt100 Transmitter - DIN Rail Mounted

Our fixed range of DIN rail mounted transmitters are available in a variety of ranges for Type K, T or J thermocouples or alternatively for Pt100 sensors. They are high accuracy yet low cost and are ideal for a variety of industrial applications.



- Available for either Types K, T or J Thermocouple or Pt100 sensors in a variety of fixed ranges
- Provides a 4-20mA output signal
- For DIN rail mounting
- CE marked

### Specifications:

Power supply: 14-40V DC

Operating temperature range: -20°C/+80°C

Thermocouple type: Cold junction drift: 0.03°C/°C, Millivolt linearised

Pt100 type: Linearisation 0.1%, Maximum sensor line resistance 250 ohms, Sensor lead effect 0.03°C/ohm

Burnout: Upscale (max 35mA)

Power supply effect: ±0.002%/V

Dimensions: 79mm high x 22.5mm wide x 85.5mm deep



## DIN Rail Mounted Thermocouple Transmitter - Fixed Range

Code No Description

747-600 Type K -25°C/+150°C

747-604 Type K 0°C/+200°C

747-608 Type K 0°C/+300°C

747-612 Type K 0°C/+600°C

747-616 Type K 0°C/+900°C

747-620 Type K 0°C/+1200°C

747-624 Type T 0°C/+150°C

747-628 Type T 0°C/+200°C

747-632 Type T 0°C/+400°C

747-636 Type J 0°C/+200°C

747-640 Type J 0°C/+400°C

747-644 Type J 0°C/+800°C

## DIN Rail Mounted Pt100 Transmitter - Fixed Range

Code No Description

747-648 Pt100 -25°C/+100°C

747-652 Pt100 0°C/+100°C

747-656 Pt100 0°C/+150°C

747-660 Pt100 0°C/+200°C

747-664 Pt100 0°C/+250°C

747-668 Pt100 0°C/+300°C

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# Ex Stock Temperature Transmitters

## HART® Protocol Head Mounted Transmitter

A new range of microprocessor based head mounted transmitters that can be set by a HART communicator or other HART related software. These highly accurate transmitters are ideal for a variety of industrial applications where compatibility with a HART system is required. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with our configuration software or with existing HART software.



- **HART® compatible**
- **Available pre-configured in a variety of ranges for thermocouple types K, T or J and RTD Pt100 or alternatively not ranged for customer configuration**
- **Temperature Linearised**
- **Provides a 4-20mA output signal**
- **Suits all standard industrial connection heads with 33mm centre hole fixings**
- **CE marked**

### Specifications:

HART compatible

Minimum Span: Thermocouple 50°C, Pt100 25°C

Temperature Linearised

Power supply: 10-40V DC, Power supply effect:  $\pm 0.001\%/V$

Operating temperature range: -40°C/+85°C

Thermocouple type: Cold junction drift 0.01°C/°C

Pt100 type: Maximum sensor line resistance 500 ohms, Sensor lead effect 0.001°C/ohm

Burnout: Upscale (max 35mA)

RFI protected

Dimensions: 43mm dia x 20mm high body (29mm high with terminal posts)



### HART Protocol Head Mounted Transmitter - Fixed Range

Code No Description

747-703	Type K -25°C/+50°C
747-706	Type K 0°C/+100°C
747-709	Type K 0°C/+200°C
747-712	Type K 0°C/+300°C
747-715	Type K 0°C/+600°C
747-718	Type K 0°C/+900°C
747-721	Type K 0°C/+1200°C
747-724	Type T -25°C/+50°C
747-727	Type T 0°C/+100°C
747-730	Type T 0°C/+300°C
747-733	Type T 0°C/+400°C
747-736	Type J 0°C/+100°C
747-739	Type J 0°C/+300°C
747-742	Type J 0°C/+600°C
747-745	Type J 0°C/+800°C
747-748	Pt100 -25°C/+50°C
747-751	Pt100 0°C/+100°C
747-754	Pt100 0°C/+150°C
747-757	Pt100 0°C/+200°C
747-760	Pt100 0°C/+300°C
747-763	Pt100 0°C/+400°C
747-910	Optional DIN rail mounting kit

### HART Protocol Head Mounted Transmitter - Adjustable

Code No Description

747-701	Adjustable HART Transmitter for Thermocouple / Pt100
747-460	Software, Connection Kit and Instructions for ranging
747-910	Optional DIN rail mounting kit

## HART® Protocol DIN Rail Mounted Transmitter

A new range of microprocessor based DIN rail mounted transmitters that can be set by a HART communicator or other HART related software. These highly accurate transmitters are ideal for a variety of industrial applications where compatibility with a HART system is required. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with our configuration software or with existing HART software.



- **HART® compatible**
- **Available pre-configured in a variety of ranges for thermocouple types K, T or J and RTD Pt100 or alternatively not ranged for customer configuration**
- **Temperature Linearised**
- **Provides a 4-20mA output signal**
- **For DIN rail mounting**
- **CE marked**

### Specifications:

HART compatible

Minimum Span: Thermocouple 50°C, Pt100 25°C

Temperature Linearised

Power supply: 10-40V DC, Power supply effect:  $\pm 0.001\%/V$

Operating temperature range: -40°C/+85°C

Thermocouple type: Cold junction drift 0.01°C/°C

Pt100 type: Maximum sensor line resistance 500 ohms, Sensor lead effect 0.001°C/ohm

Burnout: Upscale (max 35mA)

RFI protected

Dimensions: 75mm high x 22.5mm deep x 99mm wide



### HART Protocol DIN Rail Mounted Transmitter - Fixed Range

Code No Description

747-770	Type K -25°C/+50°C
747-773	Type K 0°C/+100°C
747-776	Type K 0°C/+200°C
747-779	Type K 0°C/+300°C
747-782	Type K 0°C/+600°C
747-785	Type K 0°C/+900°C
747-788	Type K 0°C/+1200°C
747-791	Type T -25°C/+50°C
747-794	Type T 0°C/+100°C
747-797	Type T 0°C/+300°C
747-800	Type T 0°C/+400°C
747-803	Type J 0°C/+100°C
747-806	Type J 0°C/+300°C
747-809	Type J 0°C/+600°C
747-812	Type J 0°C/+800°C
747-815	Pt100 -25°C/+50°C
747-818	Pt100 0°C/+100°C
747-821	Pt100 0°C/+150°C
747-824	Pt100 0°C/+200°C
747-827	Pt100 0°C/+300°C
747-830	Pt100 0°C/+400°C

### HART Protocol DIN Rail Mounted Transmitter - Adjustable

Code No Description

747-768	Adjustable HART Transmitter for Thermocouple / Pt100
747-460	Software, Connection Kit and Instructions for ranging

For advice, call one of our experienced engineers on:

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# Ex Stock Temperature Transmitters

## ATEX Approved Head Mounted Transmitter

Our range of microprocessor based ATEX approved head mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications where ATEX approval of equipment is required. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the serial port of your PC as well as instructions.



- ATEX approved (Ex II 1 G EEx ia IIC T6)
- Available pre-configured in a variety of ranges for thermocouple types K, T or J and RTD Pt100 or alternatively not ranged for customer configuration
- Temperature Linearised
- Provides a 4-20mA output signal
- Suits all standard industrial connection heads with 33mm centre hole fixings
- CE marked

### Specifications:

Minimum Span: Thermocouple 50°C, Pt100 25°C

Temperature Linearised

Power supply: 10-40V DC

Operating temperature range: -40°C/+85°C

Thermocouple type: Cold junction drift 0.01°C/°C

Pt100 type: Maximum sensor line resistance 500 ohms, Sensor lead effect 0.001°C/ohm

Burnout: Upscale (max 35mA). Power supply effect: ±0.001%/V

RFI protected

Dimensions: 43mm dia x 20mm high body (29mm high with terminal posts)



### ATEX Approved Head Mounted Transmitter - Fixed Range

Code No Description

747-833	Type K -25°C/+50°C
747-836	Type K 0°C/+100°C
747-839	Type K 0°C/+200°C
747-842	Type K 0°C/+300°C
747-845	Type K 0°C/+600°C
747-848	Type K 0°C/+900°C
747-851	Type K 0°C/+1200°C
747-854	Type T -25°C/+50°C
747-857	Type T 0°C/+100°C
747-860	Type T 0°C/+300°C
747-863	Type T 0°C/+400°C
747-866	Type J 0°C/+100°C
747-869	Type J 0°C/+300°C
747-872	Type J 0°C/+600°C
747-875	Type J 0°C/+800°C
747-878	Pt100 -25°C/+50°C
747-881	Pt100 0°C/+100°C
747-884	Pt100 0°C/+150°C
747-887	Pt100 0°C/+200°C
747-890	Pt100 0°C/+300°C
747-893	Pt100 0°C/+400°C
747-910	Optional DIN rail mounting kit

### ATEX Approved Head Mounted Transmitter - Adjustable

Code No Description

746-905	Adjustable ATEX Transmitter for Thermocouple / Pt100
747-460	Software, Connection Kit and Instructions for ranging

## ATEX Approved DIN Rail Mounted Transmitter

Our range of microprocessor based ATEX approved DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications where ATEX approval of equipment is required. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications with a configuration kit consisting of: an easy to use software package on a CD Rom, connection leads for attaching the transmitter to the serial port of your PC as well as instructions.



- ATEX approved (Ex II 1 G EEx ia IIC T6)
- Available pre-configured in a variety of ranges for thermocouple types K, T or J and RTD Pt100 or alternatively not ranged for customer configuration
- Temperature Linearised
- Provides a 4-20mA output signal
- For DIN rail mounting
- CE marked

### Specifications:

Minimum Span: Thermocouple 50°C, Pt100 25°C

Temperature Linearised

Power supply: 10-40V DC.

Operating temperature range: -40°C/+85°C

Thermocouple type: Cold junction drift 0.01°C/°C

Pt100 type: Maximum sensor line resistance 500 ohms, Sensor lead effect 0.001°C/ohm

Burnout: Upscale (max 35mA). Power supply effect: ±0.001%/V

RFI protected

Dimensions: 75mm high x 22.5mm deep x 99mm wide



### ATEX Approved DIN Rail Mounted Transmitter - Fixed Range

Code No Description

747-913	Type K -25°C/+50°C
747-916	Type K 0°C/+100°C
747-919	Type K 0°C/+200°C
747-922	Type K 0°C/+300°C
747-925	Type K 0°C/+600°C
747-928	Type K 0°C/+900°C
747-931	Type K 0°C/+1200°C
747-934	Type T -25°C/+50°C
747-937	Type T 0°C/+100°C
747-940	Type T 0°C/+300°C
747-943	Type T 0°C/+400°C
747-946	Type J 0°C/+100°C
747-949	Type J 0°C/+300°C
747-952	Type J 0°C/+600°C
747-955	Type J 0°C/+800°C
747-958	Pt100 -25°C/+50°C
747-961	Pt100 0°C/+100°C
747-964	Pt100 0°C/+150°C
747-967	Pt100 0°C/+200°C
747-970	Pt100 0°C/+300°C
747-973	Pt100 0°C/+400°C

### ATEX Approved DIN Rail Mounted Transmitter - Adjustable

Code No Description

746-910	Adjustable ATEX Transmitter for Thermocouple / Pt100
747-460	Software, Connection Kit and Instructions for ranging

**Fax: 01895 857777**

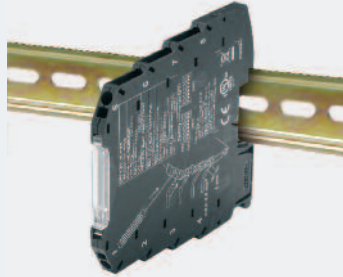
**Email: sales@tcdirect.co.uk Web: www.tcdirect.co.uk**



# Ex Stock Temperature Transmitters

## Slim-line High Precision Voltage/Current Output Thermocouple DIN Rail Mounted Transmitter

Our new range of slim-line microprocessor based, fully isolated DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. The body is a tiny 6.2mm thick - a huge space saving compared to most other DIN rail models. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications by dip switches on the device. An optional bus adaptor is available enabling hot swapping and requiring only one power supply for multiple units.



- Provides a 0-5V DC, 1-5V DC, 0-10V DC, 10-0V DC, 4-20mA, 0-20mA, 20-4mA or 20-0mA output signal
- Available pre configured in a variety of ranges for thermocouple types K, T and J (thermocouple types E, N, R, S & B settable via dip switch on unit)
- Fully isolated and Temperature Linearised
- For DIN rail mounting
- Tiny Dimensions! (6.2mm x 93.1mm x 102.5mm body)
- "Hot Swappable" when used with optional bus adaptor
- CE marked

### Specifications:

Fully Isolated & Temperature Linearised

Minimum Span: 100°C

Power Supply: direct 19.2-30 V DC via front terminals or optional bus adaptor (not loop powered)

Operating Temperature Range: -20°C / +65°C

Accuracy: 0.1%

Cold Junction Error: 1.5°C Max.

Response Time (10..90%): <25 ms

Burnout: Factory set to Upscale, programmable with dip switch

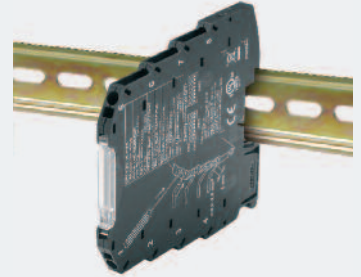
Connection: Push Fit Terminals for quick connection

RFI protected



## Slim-line High Precision Voltage/Current Output RTD Pt100 DIN Rail Mounted Transmitter

Our new range of slim-line microprocessor based, fully isolated DIN rail mounted transmitters are high accuracy yet low cost and are ideal for a variety of industrial applications. The body is a tiny 6.2mm thick - a huge space saving compared to most other DIN rail models. They can either be supplied factory ranged or alternatively ranged by the end user for specific applications by dip switches on the device. An optional bus adaptor is available enabling hot swapping and requiring only one power supply for multiple units.



- Provides a 0-5V DC, 1-5V DC, 0-10V DC, 10-0V DC, 4-20mA, 0-20mA, 20-4mA or 20-0mA output signal
- Accepts 2, 3 & 4 wire Pt100 sensors (factory set for 3-wire, can be changed by DIP-Switch)
- 3-Way Galvanic isolation
- For DIN rail mounting
- Tiny Dimensions! (6.2mm x 93.1mm x 102.5mm body)
- "Hot Swappable" when used with optional bus adaptor
- CE marked

### Specifications:

Minimum Span: 50°C

Power Supply: direct 19.2-30 V DC via front terminals or optional bus adaptor (not loop powered)

Operating Temperature Range: -20°C / +65°C, Humidity 30 ..90% at 40°C (non-condensing)

Accuracy: 0.1%

Galvanic isolation: 1500V AC between Power supply // input // output (digital)

Response Time (10 ..90%): <50 ms

Burnout: Factory set to Upscale, programmable with dip switch

Connection: Push Fit Terminals for quick connection

RFI protected



### Slim-line Thermocouple DIN Rail Transmitter - Fixed Range

Code No	Description
748-506	Type K 0°C/+200°C
748-509	Type K 0°C/+300°C
748-512	Type K 0°C/+800°C
748-515	Type K 0°C/+1000°C
748-518	Type K 0°C/+1200°C
748-521	Type T -50°C/+100°C
748-524	Type T 0°C/+300°C
748-527	Type T 0°C/+400°C
748-530	Type J 0°C/+300°C
748-533	Type J 0°C/+600°C
748-536	Type J 0°C/+800°C
748-540	Optional Bus Adaptor (fits up to 2 modules)

### Slim-line Thermocouple DIN Rail Transmitter - Fixed Range

Code No	Description
748-103	Pt100 -150°C/+50°C
748-106	Pt100 -50°C/+50°C
748-109	Pt100 0°C/+50°C
748-112	Pt100 0°C/+100°C
748-115	Pt100 0°C/+150°C
748-118	Pt100 0°C/+200°C
748-121	Pt100 0°C/+300°C
748-124	Pt100 0°C/+400°C
748-127	Pt100 0°C/+600°C
748-540	Optional Bus Adaptor (fits up to 2 modules)

For advice, call one of our experienced engineers on:

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# Ex Stock Humidity Transmitters

## Wall Mounted Humidity/Temperature Transmitters with Remote Sensor and Display

These smart transmitters will measure humidity, temperature, dew point and Delta T values, giving a 4~20mA output with a single two wire or dual two wire output. This unit is designed to for remote mounted sensor applications, and there is an option for a 4 digit LED display available, which can be rotated to suit any application. The stem length is 170mm.



- **Ranges:** Humidity, Temperature, Dew Point
- **Humidity range:** 0 to 100% RH
- **Temperature range:** -30 to +100°C
- **Dew point range:** -30 to +100°C
- **Accuracy:** Temperature:  $\pm 0.4^{\circ}\text{C}$ , Humidity:  $\pm 2\%$
- **Delta T (difference between dewpoint & ambient temperature) range:** 0 to 50°C
- **Resolution:** 0.1% - 0.1°C
- **Power supply:** 10 to 30V DC, 15 to 30V DC with display

## Wall Mounted Humidity/Temperature Transmitters with Remote Sensor and Display

Code No Description

715-340	Remote Humidity Sensor <i>without</i> Display, with 2mtr Lead
715-343	Remote Humidity Sensor <i>without</i> Display, with 5mtr Lead
715-346	Remote Humidity Sensor with display, with 2mtr Lead
715-349	Remote Humidity Sensor with display, with 5mtr Lead
715-352	Remote Humidity & Temperature Sensor with display, with 2mtr Lead
715-355	Remote Humidity & Temperature Sensor with display, with 5mtr Lead

## Duct Mount Humidity/Temperature Transmitters with Display

These smart transmitters will measure humidity, temperature, dew point and Delta T values, giving a 4~20mA output with a single two wire or dual two wire output. This unit is designed to be duct mounted, and there is an option for a 4 digit LED display available, which can be rotated to suit any application. The stem length is 250mm.



- **Ranges:** Humidity, Temperature, Dew Point
- **Humidity range:** 0 to 100% RH
- **Temperature range:** -30 to +100°C
- **Dew point range:** -30 to +100°C
- **Accuracy:** Temperature:  $\pm 0.4^{\circ}\text{C}$ , Humidity:  $\pm 2\%$
- **Delta T (difference between dewpoint & ambient temperature) range:** 0 to 50°C
- **Resolution:** 0.1% - 0.1°C
- **Power supply:** 10 to 30V DC, 15 to 30V DC with display

## Duct Mount Humidity/Temperature Transmitters with Display

Code No Description

715-320	Duct Mounted Humidity Transmitter, <i>without</i> Display
715-323	Duct Mounted Humidity Transmitter with Display
715-326	Duct Mounted Humidity and Temperature Transmitter with Display

## Wall Mounted Humidity/Temperature Transmitters with Display

These smart transmitters will measure humidity, temperature, dew point and Delta T values, giving a 4~20mA output with a single two wire or dual two wire output. This unit is designed to be wall or surface mounted, and there is an option for a 4 digit LED display available, which can be rotated to suit any application. The stem length is 170mm.



- **Ranges:** Humidity, Temperature, Dew Point
- **Humidity range:** 0 to 100% RH
- **Temperature range:** -30 to +100°C
- **Dew point range:** -30 to +100°C
- **Accuracy:** Temperature:  $\pm 0.4^{\circ}\text{C}$ , Humidity:  $\pm 2\%$
- **Delta T (difference between dew point & ambient temperature) range:** 0 to 50°C
- **Resolution:** 0.1% - 0.1°C
- **Power supply:** 10 to 30V DC, 15 to 30V DC with display

## Wall Mounted Humidity/Temperature Transmitters with Display

Code No Description

715-300	Wall Mounted Humidity Transmitter, <i>without</i> Display
715-303	Wall Mounted Humidity Transmitter with Display
715-306	Wall Mounted Humidity and Temperature Transmitter with Display

### Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

### Ex Stock Delivery !

If you need to measure temperature, you'll find our vast range of products Ex Stock for immediate overnight delivery!

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# Ex Stock Temperature Controllers

## NEW! Low Cost, Space Saving Temperature Controllers



This new range of space saving, low cost PID temperature controllers feature an innovative 60mm instrument depth and a large 15mm high LCD display. An improved autotuning algorithm calculates optimum PID values to achieve faster than ever stable control. Other features include 6-level fine tuning, start-up tuning and a 5 year warranty. These low cost controllers are available in 1/16, 1/8 and 1/4 DIN sizes with a variety of output options. A hard plastic front cover is available to prevent the controls of the unit being pressed and settings being changed accidentally. A rear terminal cover to add protection to the rear terminals and help to prevent an electrical shock during operation is also available.

- Low cost temperature control
- Space saving 60mm instrument depth
- Large, bright dual LCD Display
- PID Auto tuning or On/Off can be selected
- 1/16 DIN (48x48mm), 1/8 DIN (96x48mm) and 1/4 DIN (96x96mm)
- Accuracy: Typically better than  $\pm 0.3\%$  of reading
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Customer rangeable for Type K J T N E R S and B thermocouple or Pt100 inputs
- Relay or Solid State Relay drive (SSR) output versions
- Non volatile memory
- 5 year warranty
- Accessories:

Front hard plastic cover to prevent accidental button operation.

Rear terminal cover for added protection/safety to rear screw terminals

### 1/16 DIN - 48 x 48 x 63mm deep

Code No Description

309-100	1 alarm - Relay output
309-103	1 alarm - SSR output
309-192	Hard Plastic Front Cover
309-196	Rear Terminal Cover

### 1/8 DIN - 96 x 48 x 60mm deep

Code No Description

309-200	1 alarm - Relay output
309-203	1 alarm - SSR output
309-292	Hard Plastic Front Cover
309-296	Rear Terminal Cover

### 1/4 DIN - 96 x 96 x 60mm deep

Code No Description

309-300	1 alarm - Relay output
309-303	1 alarm - SSR output
309-392	Hard Plastic Front Cover
309-296	Rear Terminal Cover

## 1/32 DIN Dual Display PID Temperature Controller

This powerful and versatile yet low cost miniature PID controller has dual 4 digit display of process and set values and can be ranged by the user for a variety of inputs and alarms. This auto tuning controller also features continuous self tuning which in the majority of applications sets the controller up for optimum performance. A Heat/Cool version is also available.



- PID Auto tuning or On/Off can be selected
- 1/32 DIN (24x48x100mm deep)
- 4 digit dual LED display
- Accuracy: Typically better than  $\pm 0.3\%$  of FSV
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Customer rangeable for Type K J T N E R S and B thermocouple or Pt100 inputs
- Temperature (process or deviation) or Loop break alarms can be configured
- Relay or Solid State Relay drive (SSR) output versions
- Non volatile memory
- 5 year warranty

### Standard Version

Code No Description

306-100	No alarms - Relay output
306-103	No alarms - SSR output
306-110	1 alarm - Relay output
306-113	1 alarm - SSR output
306-120	2 alarms - Relay output
306-123	2 alarms - SSR output

### with RS485 Communication Option

Code No Description

306-130	No alarms - Relay output
306-133	No alarms - SSR output
306-140	1 alarm - Relay output
306-143	1 alarm - SSR output
306-150	2 alarms - Relay output
306-153	2 alarms - SSR output

### with Heat/Cool Control Output Option

Code No Description

306-160	No alarms - Relay Heat, Relay Cool
306-163	No alarms - SSR Heat, Relay Cool

### Set Up Service for Controllers

Code No Description

306-202	Set up Service - before delivery
306-204	Set up Service - after delivery

The Set up Service is of sensor type, range, alarm selection and alarm values.

For advice, call one of our experienced engineers on:

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# Ex Stock Temperature Controllers

## 1/16 DIN Dual Display PID Temperature Controller

This powerful and versatile yet low cost PID controller has dual 4 digit display of process and set values and can be ranged by the user for a variety of inputs and alarms. This auto tuning controller also features continuous self tuning which in the majority of applications sets the controller up for optimum performance. A Heat/Cool version is also available.



- **PID Auto tuning or On/Off can be selected**
- **1/16 DIN (48x48x100mm deep)**
- **4 digit dual LED display**
- **Accuracy: Typically better than  $\pm 0.3\%$  of FSV**
- **100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions**
- **Customer rangeable for Type K J T N E R S and B thermocouple or Pt100 inputs**
- **Temperature (process or deviation) or Loop break alarms can be configured**
- **Relay or Solid State Relay drive (SSR) or 4-20mA output versions**
- **Non volatile memory**
- **5 year warranty**



### Standard Version

Code No Description

305-155	No alarms - Relay output
305-158	No alarms - SSR output
305-161	1 alarm - Relay output
305-164	1 alarm - SSR output
305-167	2 alarms - Relay output
305-170	2 alarms - SSR output

### with 4-20 mA Analogue Control Output Option

Code No Description

305-190	No alarms - 4-20mA output
305-193	1 alarm - 4-20mA output
305-196	2 alarms - 4-20mA output

### with RS485 Communication Option

Code No Description

305-202	No alarms - Relay output
305-205	No alarms - SSR output
305-208	1 alarm - Relay output
305-211	1 alarm - SSR output
305-214	2 alarms - Relay output
305-217	2 alarms - SSR output

### with Heat/Cool Control Output Option

Code No Description

305-235	No alarms - Relay Heat, Relay Cool
305-238	No alarms - SSR Heat, Relay Cool
305-241	2 alarms - Relay Heat, Relay Cool
305-244	2 alarms - SSR Heat, Relay Cool

### Set Up Service for Controllers

Code No Description

306-202	Set up Service - before delivery
306-204	Set up Service - after delivery

The Set up Service is of sensor type, range, alarm selection and alarm values.

## 1/16 DIN Dual Display PID DIN Rail Mounting Temperature Controller

This versatile temperature controller can be simply mounted on a DIN rail with the supplied DIN rail mounting socket. They are ideal if the user does not wish to make panel cutouts. These increasingly popular instruments can be simply placed in a terminal box (supplied separately) which if required can have a glass front or alternatively can be locked according to the requirements of the user. The unit can be easily removed from the socket if necessary. They have dual 4 digit display of process and set values and can be ranged by the user for a variety of inputs and alarms as well as featuring continuous self tuning which in the majority of applications sets the controller up for optimum performance. A Heat/Cool version is also available.



- **PID Auto tuning or On/Off can be selected**
- **1/16 DIN (48x48x100mm deep)**
- **4 digit dual LED display**
- **Accuracy: Typically better than  $\pm 0.3\%$  of FSV**
- **100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions**
- **Customer rangeable for Type K J T N E R S and B thermocouple or Pt100 inputs**
- **Temperature (process or deviation) or Loop break alarms can be configured**
- **Relay or Solid State Relay drive (SSR) or 4-20mA output versions**
- **Non volatile memory**
- **5 year warranty**

### Standard Version

Code No Description

305-803	No alarms - Relay output
305-806	No alarms - SSR output
305-809	1 alarm - Relay output
305-812	1 alarm - SSR output
305-815	2 alarms - Relay output
305-818	2 alarms - SSR output

### with 4-20mA Analogue Control Output Option

Code No Description

305-830	No alarms - 4-20mA output
305-833	1 alarm - 4-20mA output
305-836	2 alarms - 4-20mA output

### with RS485 Communication Option

Code No Description

305-842	No alarms - Relay output
305-845	No alarms - SSR output
305-848	1 alarm - Relay output
305-851	1 alarm - SSR output
305-854	2 alarms - Relay output
305-857	2 alarms - SSR output

### with Heat/Cool Control Output Option

Code No Description

305-866	No alarms - Relay Heat, Relay Cool
305-869	No alarms - SSR Heat, Relay Cool

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# Ex Stock Programmer Controllers

## 1/8 DIN PID Temperature and Process Programmer Controller

This powerful and versatile yet low cost PID programmer controller has two patterns of 8 segments for programming which can if necessary be linked together. It has dual 4 digit display of process and set values and can be ranged by the user for a variety of inputs and alarms. This programmer controller can autotune the PID values which will set up the controller for optimum performance in the majority of applications. An external control contact option allows the instrument to be controlled remotely from a PLC or external timer.



- PID Auto tuning or On/Off can be selected
- 1/8 DIN (96x48x100mm deep)
- 2 patterns of 8 segments for programming
- Pattern linking possible
- 4 digit dual LED display
- Accuracy: Typically better than  $\pm 0.3\%$  of FSV
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Customer rangeable for Type K J T N E R S and B thermocouple as well as Pt100 inputs
- Heat/Cool version available
- Relay, Solid State Relay drive (SSR) or 4-20mA outputs are available
- IP54 rated when placed in a panel
- Non volatile memory
- 5 year warranty



### Standard Version

Code No Description

305-501	No alarms - Relay output
305-504	No alarms - SSR output
305-507	No alarms - 4-20mA output
305-510	1 alarm - Relay output
305-513	1 alarm - SSR output
305-516	1 alarm - 4-20mA output
305-519	2 alarms - Relay output
305-522	2 alarms - SSR output
305-525	2 alarms - 4-20mA output

### with External Contact Input Option

Code No Description

305-528	2 alarms - Relay output
305-531	2 alarms - SSR output
305-534	2 alarms - 4-20mA output

### with Heat/Cool Output Option

Code No Description

305-537	No alarms - Relay output
305-540	No alarms - SSR output
305-543	No alarms - 4-20mA output
305-546	1 alarm - Relay output
305-549	1 alarm - SSR output
305-552	1 alarm - 4-20mA output
305-555	2 alarms - Relay output
305-558	2 alarms - SSR output
305-561	2 alarms - 4-20mA output

## 1/4 DIN Dual Display PID Temperature and Process Programmer Controller

This powerful and versatile yet low cost PID programmer controller has two patterns of 8 segments for programming which can if necessary be linked together. It has dual 4 digit display of process and set values and can be ranged by the user for a variety of inputs and alarms. This programmer controller can autotune the PID values which will set up the controller for optimum performance in the majority of applications. An external control contact option allows the instrument to be controlled remotely from a PLC or external timer.



- PID Auto tuning or On/Off can be selected
- 1/4 DIN (96x96x100mm deep)
- 2 patterns of 8 segments for programming
- Pattern linking possible
- 4 digit dual LED display
- Accuracy: Typically better than  $\pm 0.3\%$  of FSV
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Customer rangeable for Type K J T N E R S and B thermocouple as well as Pt100 inputs
- Heat/Cool version available
- Relay, Solid State Relay drive (SSR) or 4-20mA outputs are available
- IP54 rated when placed in a panel
- Non volatile memory
- 5 year warranty



### Standard Version

Code No Description

305-720	No alarms - Relay output
305-723	No alarms - SSR output
305-726	No alarms - 4-20mA output
305-729	1 alarm - Relay output
305-732	1 alarm - SSR output
305-735	1 alarm - 4-20mA output
305-738	2 alarms - Relay output
305-741	2 alarms - SSR output
305-744	2 alarms - 4-20mA output

### with External Contact Input Option

Code No Description

305-747	2 alarms - Relay output
305-750	2 alarms - SSR output
305-753	2 alarms - 4-20mA output

### with Heat/Cool Output Option

Code No Description

305-756	No alarms - Relay output
305-759	No alarms - SSR output
305-762	No alarms - 4-20mA output
305-765	1 alarm - Relay output
305-768	1 alarm - SSR output
305-771	1 alarm - 4-20mA output
305-774	2 alarms - Relay output
305-777	2 alarms - SSR output
305-781	2 alarms - 4-20mA output

For advice, call one of our experienced engineers on:

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# Ex Stock Multi Channel Temperature Controllers

## 4 Channel Dual Display PID Temperature Controller

This versatile instrument can control up to 4 channels in a compact 96 x 96mm 1/4 DIN size. This reduces panel size and the effort of making multiple panel cutouts, therefore allowing designers of control equipment to save labour, installation and operating costs. The instrument has a 4 digit dual display of process and set values and can be ranged by the user for a variety of inputs and alarms. This auto tuning controller also features continuous self tuning which will in the majority of applications set the controller up for optimum performance.



- 4 channel input
- PID Auto tuning or On/Off can be selected
- 1/4 DIN (96x96x100mm deep)
- 4 digit dual LED display
- Accuracy: Typically better than  $\pm 0.3\%$  of FSV
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Either Thermocouple (rangeable for Type K J T N E R S and B) or Pt100 inputs
- Temperature (process or deviation) or Loop break alarms can be configured
- Relay or Solid State Relay drive (SSR) output versions
- Non volatile memory
- 5 year warranty



### Standard Version

Code No T/C	Code No Pt100	Description
307-452	307-252	No alarms - Relay output
307-455	307-255	No alarms - SSR output
307-458	307-258	1 alarm - Relay output
307-461	307-261	1 alarm - SSR output
307-464	307-264	2 alarms - Relay output
307-467	307-267	2 alarms - SSR output
307-470	307-270	3 alarms - Relay output
307-473	307-273	3 alarms - SSR output

### with RS485 Communication Option

Code No T/C	Code No Pt100	Description
307-480	307-280	No alarms - Relay output
307-483	307-283	No alarms - SSR output
307-486	307-286	1 alarm - Relay output
307-489	307-289	1 alarm - SSR output
307-492	307-292	2 alarms - Relay output
307-495	307-295	2 alarms - SSR output
307-498	307-298	3 alarms - Relay output
307-501	307-301	3 alarms - SSR output

### with 4-20 mA Analogue Control Output Option

Code No	Code No Pt100	Description
307-512	307-312	No alarms - 4-20mA
307-515	307-315	1 alarm - 4-20mA
307-518	307-318	2 alarms - 4-20mA
307-521	307-321	3 alarms - 4-20mA

### Set Up Service for Controllers

Code No	Description
306-202	Set up Service - before delivery
306-204	Set up Service - after delivery

The Set up Service is of sensor type, range, alarm selection and alarm values.

## 8 Channel Dual Display PID Temperature Controller

This versatile instrument can control up to 8 channels in a compact 96 x 96mm 1/4 DIN size. This reduces panel size and the effort of making multiple panel cutouts, therefore allowing designers of control equipment to save labour, installation and operating costs. The instrument has a 4 digit dual display of process and set values and can be ranged by the user for a variety of inputs and alarms. This auto tuning controller also features continuous self tuning which will in the majority of applications set the controller up for optimum performance.



- 8 channel input
- PID Auto tuning or On/Off can be selected
- 1/4 DIN (96x96x100mm deep)
- 4 digit dual LED display
- Accuracy: Typically better than  $\pm 0.3\%$  of FSV
- 100-240V AC as standard. Contact us if you require 24V AC or 24V DC versions
- Either Thermocouple (rangeable for Type K J T N E R S and B) or Pt100 inputs
- Temperature (process or deviation) or Loop break alarms can be configured
- Relay or Solid State Relay drive (SSR) output versions
- Non volatile memory
- 5 year warranty



### Standard Version

Code No T/C	Code No Pt100	Description
307-536	307-336	No alarms - Relay output
307-539	307-339	No alarms - SSR output
307-542	307-342	1 alarm - Relay output
307-545	307-345	1 alarm - SSR output
307-548	307-348	2 alarms - Relay output
307-551	307-351	2 alarms - SSR output
307-554	307-354	3 alarms - Relay output
307-557	307-357	3 alarms - SSR output

### with RS485 Communication Option

Code No T/C	Code No Pt100	Description
307-568	307-368	No alarms - Relay output
307-571	307-371	No alarms - SSR output
307-574	307-374	1 alarm - Relay output
307-577	307-377	1 alarm - SSR output
307-580	307-380	2 alarms - Relay output
307-583	307-383	2 alarms - SSR output
307-586	307-386	3 alarms - Relay output
307-589	307-389	3 alarms - SSR output

### with 4-20 mA Analogue Control Output Option

Code No	Code No Pt100	Description
307-596	307-396	No alarms - 4-20mA
307-599	307-399	1 alarm - 4-20mA
307-602	307-402	2 alarms - 4-20mA
307-605	307-405	3 alarms - 4-20mA

### Set Up Service for Controllers

Code No	Description
306-202	Set up Service - before delivery
306-204	Set up Service - after delivery

The Set up Service is of sensor type, range, alarm selection and alarm values.

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## Ex Stock Relays

### Mechanical Relay - 3 pole

When a mechanical relay is required for applications where the current rating of the control relay on the controller is not suitable for the load that needs driving, our 10 amp rated, 11 pin, 3 pole mechanical relay covers the requirements of most applications. They are ideal for use with all of the temperature controllers shown in this catalogue which feature a relay output.



- **Contact capacity: 10A 250V AC**
- **Coil nominal voltage: 250V AC**
- **Coil nominal power: 3.5V AC**
- **Insulation resistance: >500 MΩ**
- **Contact resistance: <100 mΩ**
- **Number of poles: 3 (triple pole double throw)**
- **Mechanical Life: 10<sup>7</sup> OPS**
- **Electrical Life: 10<sup>5</sup> OPS (at maximum amp rating)**
- **Operating temperature: -40°C to +55°C**
- **Approvals: CE, UL and TUV**
- **Size: Relay (excluding base) 35mm x 35mm x 52mm, Weight: 80g**

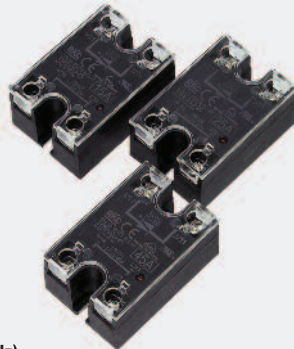


#### Mechanical Relay - 3 Pole

Code No	Description
430-050	Mechanical Relay 3 pole with socket

### Solid State Relay - DC Control Input/AC Output

These panel mount SSRs utilise a control input between 3.5 to 30V DC to switch a circuit rated between 35 and 264V AC. They are ideal for use with all of the temperature controllers shown in this catalogue which feature an SSR output. We recommend the use of our Heatsinks, which can be mounted on the back of the relay to give maximum heat dissipation.



- **Input control voltage range: 3.5 to 30V DC**
- **Response time 0.5cycle + 1msec**
- **Load voltage range: 35 to 264V AC (50/60Hz)**
- **Load current range (with heat sink at 25°C): 15A, 25A & 45A dependent on model**
- **Zero voltage switching for resistive load**
- **Dielectric strength: 3000V AC for one minute**
- **Dimensions: SSR, 60x41x30mm (HxWxD)**
- **Heatsink dimensions: See Below x 125x59mm (HxWxD)**

#### Solid State Relay - DC Control Input/AC Output

Code No	Description
430-405	15A rated
430-410	25A rated
430-415	45A rated
430-450	60mm heatsink to suit 430-405
430-455	120mm heatsink to suit 430-410 or 430-415
430-460	200mm heatsink to suit 430-410 or 430-415

### Solid State Relay - DIN Rail Mount DC control input / 60-280V AC output

These relays have a built in heat sink within a very compact design and are easy to use. An LED status indicator is also provided. Ideal for use with all of the temperature controllers shown in this catalogue which feature an SSR output, they utilise a control input between 4.5 and 30V DC to switch a circuit rated between 60 and 280V AC (47 to 63Hz).



- **Input control voltage range: 4.5 to 30V DC**
- **Response time 0.5cycle + 1msec**
- **Load voltage range: 60 to 280V AC (47 to 63Hz)**
- **Load current range: 15A AC, 25A or 45A AC (at 25°C) dependent upon model**
- **Zero voltage switching for resistive load**
- **Dielectric strength: 2500V AC for one minute**
- **Ambient operating temperature range: -30°C to +40°C, 45-85% (non-condensing)**
- **Dimensions:**  
15A and 25A models 21.5x100x100mm (WxHxD)  
45A model 41x100x100mm (WxHxD)
- **Supplied with a plastic safety cover**

#### Solid State Relay - DIN Rail Mount

Code No	Description
430-305	15A rated
430-310	25A rated
430-315	45A rated

### Payment

An account can instantly be opened for you! Alternatively, if you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



### Price Promise !

We will not be beaten on price! We are so confident that you will like our prices, if you find the same product cheaper, we'll beat that price by 10% and send you a free gift! See page 139 for full terms and conditions.

For advice, call one of our experienced engineers on:

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# Ex Stock Panel Temperature Indicators

## Panel Temperature Indicator with Alarms

This high performance temperature indicator provides a flexible solution for applications requiring accurate indication with up to four alarm outputs. The instruments are easy to configure and install and are available with either AC or DC power supplies. They have an input and can be configured by the user for thermocouple or resistance thermometer inputs and have up to four process alarms which can be specified and configured by the user.



- **Bright, easy-to-read LED display (20mm high)**
- **1/8 DIN (48x96x100mm deep)**
- **Inputs: Thermocouple or Pt100**
- **100-240 V AC or 24V AC/DC versions available**
- **5 year warranty**

### Specifications:

Inputs: Thermocouple : K, J, R, S, B, E, T, N, U, L and C  
RTD : Pt100

Accuracy:- Thermocouple:  $\pm(0.3\%$  of reading + 1 digit) or  $\pm 2^{\circ}\text{C}$  ( $4^{\circ}\text{F}$ )  
RTD:  $\pm(0.3\%$  of reading + 1 digit) or  $\pm 0.8^{\circ}\text{C}$  ( $1.6^{\circ}\text{F}$ )

Alarms: 4 points; Process High, Low  
Output: Alarm 1, 2 : Relay output, Form A contact 250V AC 1A (resistive load),  
Alarm 3, 4 : Relay output, Form A contact 250V AC 3A (resistive load)

Power Supply: 100 to 240V AC or 24V AC/DC

### Panel Temperature Indicator with Alarms

Code No Description

312-620	100-240 V AC - No Alarms
312-623	100-240 V AC - 1 Alarm
312-626	100-240 V AC - 2 Alarms
312-629	100-240 V AC - 3 Alarms
312-632	100-240 V AC - 4 Alarms
312-635	100-240 V AC - 3 Alarms + Power Supply for switch box LED shown opposite
312-638	24 V AC/DC - No Alarms
312-641	24 V AC/DC - 1 Alarm
312-644	24 V AC/DC - 2 Alarms
312-647	24 V AC/DC - 3 Alarms
312-650	24 V AC/DC - 4 Alarms
312-653	24 V AC/DC - 3 Alarms + Power Supply for switch box LED shown opposite

## Slimline LCD Thermocouple Indicator

This slimline temperature indicator is compatible with thermocouple Types K, T and J and measures over a range of  $-200$  to  $+1300^{\circ}\text{C}$  ( $-328$  to  $+1999^{\circ}\text{F}$ ) when using an appropriate thermocouple. The current value and the maximum and minimum values since power-on are recorded, which can be recalled and displayed by using an external push button connected to the meter. Thermocouple Type and  $^{\circ}\text{C} / ^{\circ}\text{F}$  display can be easily selected. The meter is housed in a robust carrier, which can be bolted in place or panel mounted using the low profile bezel, window and clips provided. Back lighting is fitted for use in poor lighting conditions.



- **Fascia: 76mm x 44mm x 3mm thick**
- **Inputs: Thermocouple Types K, T and J**
- **19mm (0.75") digit height**
- **Displays current, highest and lowest readings**
- **Cold junction compensation**
- **Screw terminal connections**
- **LED back lighting**
- **Calibration can be performed easily using two potentiometers located on the rear of the meter**

### Specifications:

Accuracy:  $\pm 1^{\circ}\text{C}$  ( $2^{\circ}\text{F}$ )

Measurement Range:- Type K:  $-200$  to  $+1300^{\circ}\text{C}$   
Type T:  $-200$  to  $+350^{\circ}\text{C}$   
Type J:  $-130$  to  $+900^{\circ}\text{C}$

Supply Voltage: 7.5 to 30V dc

Operating Temperature Range:  $0$  to  $50^{\circ}\text{C}$

### Slimline LCD Thermocouple Indicator

Code No Description

312-810	Slimline LCD Thermocouple Indicator
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## Large Process Displays



Important process variables can now be clearly displayed over large distances (up to 50 metres). Keep yourself and the workforce informed of important variables. This high performance universal digital indicator features a bright highly visible LED display, either 57mm or 100mm high with models for panel or wall mounting. Setup of parameters is easily done via its keyboard and the display is a complete functional unit containing all the necessary signal conditioning, power supply and display circuitry to simplify installation. Simply apply power and connect your thermocouple or RTD sensor to obtain precision readouts of process temperatures!

- **Accepts thermocouples J, K, T, E, N, R, S, B; Pt100, Pt1000, Ni100, 0/4-20mA, 0-5 /10V DC, -10 to +10V DC and potentiometer**
- **Display size 57 or 100mm**
- **Readability of display: 57mm approx. 20 - 30m, 100mm approx. 40 to 50m**
- **Accuracy: Thermocouple 0.1%FS, RTD 0.05%FS, Process inputs 0.02% FS**
- **Operating temperature:  $-35^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$**
- **IP66 Rated**
- **Power: 80-240 V AC (382-241 is 24 V DC)**

### Large Displays

Code No Description

382-241	57mm high, 5 digits - Wall Mounting, 24 V DC
382-243	57mm high, 5 digits - Wall mounting, 80- 240V AC
382-250	100mm high, 4 digits - Wall mounting, 80- 240V AC
382-253	100mm high, 6 digits - Wall mounting, 80- 240V AC

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# Ex Stock Thermistor Thermostats

## Standard Panel Mount LED Indicator for use with Thermistor or Pt100 sensors

This indicator measures 35mm high by 75mm wide and is suitable for use with our range of either PTC thermistors or 3 wire Pt100 RTD sensors. It has bright red LED indication and is available for either 12V, 24V or 230V power supplies.



- **Resolution:** 0.1°C (-19.9°C to +99.9°C) 1°C (+100°C to 600°C)
- **Accuracy:** ±0.2°C (-19.9°C to +99.9°C) ±1°C (+100°C to 600°C)
- **Operating range:** -50°C to +150°C for PTC thermistor -100°C to 600°C for Pt100 RTD sensor
- **Display:** 3 digit 14mm high LED
- **For use with PTC thermistors (1000 ohms at 25°C) or Pt100 RTD sensor**
- **Sensor:** Offered separately. Choose from 2, 3, 5, 10 or 20 metre long versions of PTC thermistor shown on this page or any 3 wire Pt100 RTD shown elsewhere in this catalogue
- **Overall size:** 35x75x70mm (HxWxD)
- **Panel cutout:** 29x71mm (HxW)
- **Protection:** Front panel is IP54 when used with supplied gasket
- **Supply voltage:** 12V AC/DC, 24V AC/DC or 230V AC

### Standard Panel Mount Indicator

Code No	Description
344-330	Standard Indicator - 12V AC/DC
344-336	Standard Indicator - 24V AC/DC
344-339	Standard Indicator - 230V AC
344-830	Thermistor sensor 2 mtrs long
344-833	Thermistor sensor 3 mtrs long
344-836	Thermistor sensor 5 mtrs long
344-839	Thermistor sensor 10 mtrs long
344-842	Thermistor sensor 20 mtrs long

## Thermistor Sensors

We offer a range of thermistors, all of which can be used with our products and which may be suitable for other manufacturers' instrumentation (please check specification of instrument first). If you require thermistors with differing ohmic values, please call us to see whether we can offer to your custom requirements.



- **Sheath length:** 2, 3, 5, 10 or 20 metres
- **Sensor tip:** 7mm dia tapering to 6mm lead
- **Lead material:** Silicone Rubber
- **Operating temperature:** -50°C to +130°C
- **Sensor Resistance:** 1000 ohms at 25°C PTC
- **Suitable for use with all our thermistor based instruments**

### Thermistor Sensors 1000 Ohms @ 25°C

Code No	Description
344-830	Thermistor sensor 2 mtrs long
344-833	Thermistor sensor 3 mtrs long
344-836	Thermistor sensor 5 mtrs long
344-839	Thermistor sensor 10 mtrs long
344-842	Thermistor sensor 20 mtrs long

## Wall Mounted Thermostat for use with PTC sensor

This mains powered wall mounted thermostat is ideal where the fitting of a panel mounted instrument would prove to be difficult. Available either as a single stage or dual stage thermostat, they are useful in a number of applications such as refrigeration, ovens, heating plants, thermostatic baths and air conditioning. Programming of spans etc. is done from the keypads on the front fascia, which can if necessary be locked out whilst in normal operation. They have a bright easy to read LED indication of the measured value. The thermostat is for use with a PTC thermistor suitable for measuring temperatures from -50°C to +150°C.



- **Resolution:** 0.1°C/1°C/ 0.1°F
- **Accuracy** ±0.3°C
- **Operating range:** -50°C to +150°C
- **Output:** Single or Dual Relay
- **Display:** 3 digit 14mm high LED
- **For use with thermistor probe (1000 ohms at 25°C). Choose from 2, 3, 5, 10 or 20 metre long versions of PTC thermistor shown on this page**
- **Overall size:** 90x54x70mm (HxWxD)
- **Supply voltage:** 230V AC
- **Mounting:** By two screw anchors

### Wall Mounted Thermostat for use with PTC Sensor

Code No	Description
344-281	1 relay output - 230V AC
344-284	2 relay outputs - 230V AC
344-830	Thermistor sensor 2 mtrs long
344-833	Thermistor sensor 3 mtrs long
344-836	Thermistor sensor 5 mtrs long
344-839	Thermistor sensor 10 mtrs long
344-842	Thermistor Sensor 20 mtrs long

## Transformer 24, 110 or 230 V to 12V AC

We offer a transformer for use with our 12V AC digital controllers and indicators. Several models are available for either 24V, 110V or 230V AC inputs. The transformer is sealed by epoxy compound. It can be mounted by the use of the two slotted lugs on the black plastic casing.



- **For use with our range of 12V AC indicators and controllers**
- **Rating:** 24V, 110V or 230V AC input, 12V AC output rated at 3V AC 50/60 Hz
- **Mounting:** By use of slotted lugs with 50mm centres
- **Dimensions:** Main body 43x49x34mm (HxWxD) plus moulded in lugs

### Transformers

Code No	Description
344-922	230V AC to 12V AC
344-924	110V AC to 12V AC
344-926	24V AC to 12V AC

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# Ex Stock Temperature Instrumentation

## Panel Mount Thermostat for use with PTC sensor

This mains powered panel mount thermostat measures 35mm x 77mm. It is available either as a single stage or dual stage thermostat and is useful in a number of applications such as refrigeration, heating plants, ovens and bakery equipment. Programming of spans etc. is done from the keypads on the front fascia, which can, if necessary, be locked out whilst in normal operation. They have a bright easy to read LED indication of the measured value. The thermostat is for use with a PTC thermistor suitable for measuring temperatures from -50°C to +150°C although the instrument operates between -19.9°C to +99.9°C.



- **Resolution:** 0.1°C
- **Accuracy** ±0.3°C
- **Operating range:** -50.0°C to +150.0°C
- **Output:** Choice of Relay, SSR or Relay/SSR
- **Display:** 3 digit 14mm high LED
- **For use with thermistor probe (1000 ohms at 25°C).** Choose from 2, 3, 5, 10 or 20 metre long versions of PTC thermistor shown on this page
- **Overall size:** 35x77x77mm (HxWxD)
- **Panel cutout:** 29x71mm (HxW)
- **Protection:** Front panel is IP54 when used with supplied gasket
- **Supply voltage:** 12V AC/DC (Transformers available for 24V, 110V or 230V AC supplies)

### Panel Mount Thermostat for use with PTC Sensor

Code No	Description
344-204	1 relay -50.0°C to +150.0°C - 12V AC/DC
344-213	2 relays -50.0°C to +150.0°C - 12V AC/DC
344-222	1 SSR and 1 relay -50.0°C to +150.0°C - 12V AC/DC
344-830	Thermistor sensor 2 mtrs long
344-833	Thermistor sensor 3 mtrs long
344-836	Thermistor sensor 5 mtrs long
344-839	Thermistor sensor 10 mtrs long
344-842	Thermistor sensor 20 mtrs long
344-922	Transformer 230V AC to 12V AC
344-924	Transformer 110V AC to 12V AC
344-926	Transformer 24V AC to 12V AC

## Payment

An account can instantly be opened for you! Alternatively, if you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



## Thermocouple and RTD Switch Boxes

Our thermocouple and RTD switch boxes are designed to allow multiple thermocouple signals to be switched to a common display or control unit. They are available in either horizontal or vertical panel mounting in a 48 x 96mm (1/8 DIN) format. Each unit can switch up to 6 thermocouple (or 3 for RTD) signals. If more signals need switching, this is easily done by using an add on unit which incorporates a transfer switch.



- **Thermocouple versions can switch up to 6 thermocouple signals in one unit**
- **RTD versions can switch up to 3 RTD signals in one unit**
- **Add on units switch up to a further 4 for thermocouple or 2 for RTD with a transfer switch (more than one add on unit can be used)**
- **Button of channel in operation stays depressed to show it's in operation but separate LED status light on unit also shows it is on (if powered by indicator as shown opposite or independent 12V DC power supply which is also offered)**
- **Available for thermocouple types K, T, J or N and for 3 wire RTD signals**
- **Dimensions:**  
Horizontal version: 48x96x100mm (HxWxD behind panel)  
Vertical version: 96x48x100mm (HxWxD behind panel)

### Thermocouple and RTD Switch Boxes

Code No	Code No	Description
Horizontal	Vertical	
319-106	319-150	Type K - 6 channel
319-108	319-152	Type K - 4 channel + Transfer
319-110	319-154	Type T - 6 channel
319-112	319-156	Type T - 4 channel + Transfer
319-114	319-158	Type J - 6 channel
319-116	319-160	Type J - 4 channel + Transfer
319-118	319-162	Type N - 6 channel
319-120	319-164	Type N - 4 channel + Transfer
319-180	319-186	Type RTD - 3 channel
319-182	319-188	Type RTD - 2 channel + Transfer

## Budget Thermo-Hygrometer

This Thermo-Hygrometer can be used virtually anywhere. It has internal temperature and humidity sensors as well as an external temperature sensor. A flip out stand makes it ideal for table standing.

They can also be wall mounted.

- **Range:** -50 to +50°C, 20 to 99% RH
- **Resolution:** 0.1°C, 1% RH
- **Accuracy:** ±0.1°C (-10°C to +50°C), ±5% RH (25°C/60% RH)
- **°C / °F switchable**
- **Display:** 28mm high LCD digits
- **Min and max values stored**
- **Dimensions:** 67x115x20mm (HxWxD)
- **Power supply:** 1 AAA battery (supplied)



### Budget Thermo-Hygrometer

Code No	Description
756-317	Budget Thermo-Hygrometer

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## Ex Stock Thermometers

### Mini Thermometer with lead sensor

These inexpensive thermometers are ideal where a quick temperature check is required. A sensor is mounted at the end of a 3 metre long lead for convenient placement by the end user. They are supplied complete with a battery.



- **Range:** -30°C to +69°C
- **Resolution:** 0.1°C
- **Size:** 28 x 48 x 14mm (HxWxD)
- **Lead Length:** 3 metres

#### Mini Thermometer with Lead Sensor

Code No Description

757-100 Mini Thermometer with lead sensor

### Mini Thermometer with built in sensor

These inexpensive thermometers are ideal where a quick temperature check is required. A sensor is incorporated for convenience. They are supplied complete with a battery.



- **Range:** -20°C to +69°C
- **Resolution:** 0.1°C
- **Size:** 28 x 48 x 14mm (HxWxD)

#### Mini Thermometer with Built In Sensor

Code No Description

757-110 Mini Thermometer with built in sensor

### Wall mounted Solar Thermometer with lead sensor

These inexpensive thermometers are ideal where a quick temperature check is required. A sensor is mounted at the end of a 2 metre long lead for convenient placement by the end user. The thermometer is solar powered although a battery is supplied for automatic back up in poor light conditions.



- **Range:** -30°C to +69°C
- **Resolution:** 0.1°C
- **Size:** 28 x 85 x 15mm (HxWxD)
- **Lead Length:** 2 metres

#### Wall Mounted Solar Thermometer

Code No Description

757-200 Wall mounted Solar Thermometer with lead sensor

### Bi-Metallic Dial Thermometers

Our range of Bi-Metallic thermometers are designed for process and petrochemical applications. Standard features include, fast, accurate and repeatable readings, user calibration, all stainless steel construction and are available with bottom or back entry.



'Fixed' version



'Any Angle' version

- **Size:** 100mm (4")
- **Stem Diameter:** 6.0mm & 12.7mm in 316L Stainless Steel
- **'Fixed' or 'Any Angle' dials**
- **Stem Length:** 200mm under dial
- **Case & Bezel:** 304 Stainless steel
- **Window:** Toughened Glass
- **Pointer:** Black Anodised Aluminium
- **Dial:** White anodised aluminium with black markings
- **Fitting:** Thermometers supplied with a 1/2" BSP compression fitting (other threads are available on request)
- **Accuracy:** As Per Cl.1 EN13190:2001

#### Bi-Metallic Dial Thermometers - 'Fixed' 6mm diameter

Code No Description

756-503	Bottom Entry – Range: -40/+60°C (200mm long)
756-506	Bottom Entry – Range: 0/100°C (200mm long)
756-509	Bottom Entry – Range: 0/150°C (200mm long)
756-512	Bottom Entry – Range: 0/200°C (200mm long)
756-515	Bottom Entry – Range: 0/300°C (200mm long)
756-518	Bottom Entry – Range: 0/400°C (200mm long)
756-521	Back Entry – Range: -40/+60°C (200mm long)
756-524	Back Entry – Range: 0/100°C (200mm long)
756-527	Back Entry – Range: 0/150°C (200mm long)
756-530	Back Entry – Range: 0/200°C (200mm long)
756-533	Back Entry – Range: 0/300°C (200mm long)
756-536	Back Entry – Range: 0/400°C (200mm long)

#### Bi-Metallic Dial Thermometers - 'Fixed' 12.7mm diameter

Code No Description

756-603	Bottom Entry – Range: -40/+60°C (200mm long)
756-606	Bottom Entry – Range: 0/100°C (200mm long)
756-609	Bottom Entry – Range: 0/150°C (200mm long)
756-612	Bottom Entry – Range: 0/200°C (200mm long)
756-615	Bottom Entry – Range: 0/300°C (200mm long)
756-618	Bottom Entry – Range: 0/400°C (200mm long)
756-621	Back Entry – Range: -40/+60°C (200mm long)
756-624	Back Entry – Range: 0/100°C (200mm long)
756-627	Back Entry – Range: 0/150°C (200mm long)
756-630	Back Entry – Range: 0/200°C (200mm long)
756-633	Back Entry – Range: 0/300°C (200mm long)
756-636	Back Entry – Range: 0/400°C (200mm long)

#### Bi-Metallic Dial Thermometers - 'Any Angle', 6mm diameter

Code No Description

756-943	Range: -40/+60°C (200mm long)
756-946	Range: 0/120°C (200mm long)
756-949	Range: -50/150°C (200mm long)
756-952	Range: 0/200°C (200mm long)
756-955	Range: 0/300°C (200mm long)
756-958	Range: 0/400°C (200mm long)
756-961	Range: 0/500°C (200mm long)

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# Ex Stock Temperature Monitoring Systems

## Modular Temperature/Process I/O Modbus System

This modular system provides a low cost solution for temperature/process data acquisition and monitoring. The system modules can be located near to the field mounted sensors, hence reducing installation and cabling costs. Each module is DIN rail mounted and fitted with its own Modbus RS485 link which enables simple integration with most PLCs, HMIs and SCADA software.



- Simple to use and commission
- Thermocouple, RTD or voltage/current input
- Digital input with counter
- Analogue voltage/current outputs
- Digital or relay outputs
- 12-24V DC supply required
- Dimensions: 102x22.6x97.5mm (HxWxD)
- Optional autoconfiguring supervisory programme available (see below)
- Assistance, training and on site configuration service available upon request
- 2 year warranty



Modules with TCP/IP communications are also available. Contact us for details.

### Modbus RS485 Temperature and Process I/O Modules

Code No	Description
693-100	6 PRT inputs (100 ohms @ 0°C / 1000 ohms @ 0°C)
693-114	8 thermocouple inputs
693-118	8 thermocouple isolated inputs
693-123	8 analogue inputs (current)
693-137	8 analogue inputs (voltage)
693-148	16 channel digital inputs with 4 counters
693-152	8 analogue outputs (current)
693-156	8 analogue outputs (voltage)
693-160	16 digital outputs
693-164	4 relay outputs
748-200	DIN rail mounting 24V DC 500 mA power supply
690-105	USB / RS485 communication converter

If you require a specific development or application, please contact us.

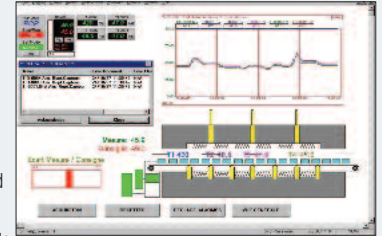
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## Autoconfiguring supervisory programme for control and data acquisition systems

Very simple to use, this programme automatically identifies the connected instruments, generates the appropriate instrument faceplate view and makes all variables for the connected instrument available. Log interval is selectable from 1 second to 1 hour. Log reports are stored as CSV files and are directly displayed within Excel. Any number of screen layouts



can be generated, importing as many measured values, graphs, bargraphs, instrument views, drawings, photos, alarm windows as necessary. User defined on screen buttons can be added to switch between the graphical display windows.

- Automatic configuration
- Data logging
- Bargraphs
- Recipes
- Trend charts with printing
- Dynamic Data Exchange
- Historical replay
- Strategy controller
- Alarm Popup
- Password protection
- Instrument views
- On screen buttons
- Measured value adjustment
- Remote customer upgrading
- CSV output to spreadsheets
- Import bitmaps

### Autoconfiguring Supervisory Programme

Code No	Description
694-111	Supervisory programme - basic version *1
694-112	Supervisory programme - complete version
694-115	Supervisory programme - limited to 2 instruments *2

\*1 : All functions except : DDE option, full historical replay, strategy controller.

\*2 : All functions except : DDE option, full historical replay, strategy controller, restriction to 2 instruments.

If you require a specific development or application, please contact us.

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# Ex Stock Dataloggers and Recorders

## Hand Held Datalogger with Graphing

This robust, easy to use handheld device measures and records temperature readings using the type K thermocouple sensor supplied with the unit. A large, colour touch screen display indicates temperature, maximum and minimum readings and will produce a graph of the data. It can be set up and left to take temperature readings at pre-determined intervals for a desired length of time. All readings are saved to a file with a date and time stamp in CSV format for up to 65,536 readings. When in 'Spot Measurement' mode the unit can be used as a thermometer to capture one-off temperature readings displayed on screen. This can be repeated for up to 65,536 readings per file. This data can then be downloaded to PC via a USB connection and opened with Excel®. The unit is compatible with any type K, J, T or N thermocouple.



- **Two modes: 'Data Logging' or 'Spot Measurement'**
- **High & Low Alarms**
- **2.8" colour touch screen**
- **Suitable for Thermocouples Types K, J, T and N**
- **Downloadable data via USB**
- **Supplied with type K thermocouple**

### Hand Held Datalogger with Graphing

Code No Description

357-794	Hand Held Datalogger with Graphing
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## Paperless Recorder - Temperature / Humidity Datalogger

This new paperless Temperature/Humidity recorder displays a graph of data ranging from 1 hour to 32 days, letting you view detailed temperature and humidity data on its large 115mm x 86mm screen. Other features include audio and visual High/Low Alarm, high speed USB connectivity and one-step data transfer using removable SD Flash memory cards. Optional downloads using Windows® software allow you to easily store graphs on your PC or share data on your network. Data can be exported into other programmes such as Word®, Excel® or Power Point®. Use the paperless recorder to monitor coolers, chambers, incubators and HVAC systems. Its large display makes evaluation of production processes or testing easy.



- **Temperature range: -10 to +40°C, 0 to 50°C/F and 0 to 100°F**
- **Humidity range: 0 to 95% RH**
- **Sensor Accuracy, Temperature: better than ±1.0°C, Humidity: ±2%**
- **Point storage: 64000 points**
- **Display size: 115mm x 86mm**
- **Optional Windows® software which can be viewed or printed in tabular or graph format. Data can also be exported into programmes such as Word® or Excel®.**
- **Download: USB, Serial or Memory Card**
- **Universal AC Power supply (supplied separately with battery back up)**
- **Mounting: Surface or Wall**
- **Dimensions: 196mm x 153mm x 55mm**

### Paperless Recorder - Temp / Humidity Datalogger

Code No Description

355-345	Remote Temp/Humidity Datalogger
357-520	Logger Software with USB Download Cable*
357-527	SD Card Reader and Flash Memory Card
357-530	Universal AC Adaptor

\* 357-520 must be purchased at same time as Data Logger in order to operate

## Paperless Recorder with Touch Screen

These high performance, network compatible paperless recorders incorporate a high visibility 5.7" TFT touch panel color LCD and are available with 6, 9 or 12 universal channels. They combine a high speed sampling rate of 100 ms for 12 points with an accuracy of ±0.1%. Measured data is stored either in internal flash memory or in a 2GB SD or 32GB SDHC card. Data can be monitored by a web browser on internet or intranet with FTP transfer of data files and email notification also available. The recorder can be used for various applications such as data management, research, development etc. and a wide range of monitoring options is available by utilizing the internet environment.



- **Touch Panel 5.7" TFT Screen**
- **Inputs: Thermocouples K, T, J, N, R, S, B, L, U, C and Pt100, DC Current**
- **6, 9 or 12 channels**
- **PC Support software included**
- **Multi point recording with high speed and accuracy**
- **Easy Operating and Programming without manuals**
- **LAN Network plus FTP to internet capability**
- **Large capacity storage by SD/SDHC card**
- **IP65 Rated**

### Specifications:

Measuring cycle: 100ms

Recording cycle: 1sec to 60mins (main/sub record, 100ms can be selected at sub record)

Indication accuracy: ±0.1%+1digit of input range

Burnout: Disconnection of thermocouple and RTD input; UP/DOWN selectable

Digital Filter: Range/Scale is selectable when DC voltage/current is programmed

Memory: 128MB Flash memory, CF card, 2GB SD and 32GB SDHC capacity

Recording cycle: adjustable between 1second to 60 minutes

Logging Data: Measured data; file name (group name), time of day, month and year of recording start, tag, measured data, alarm status/types Stored on Binary/CSV file

Operating Conditions: 0 to 50°C, 20 to 80% RH

Power Voltage: 85 to 264 V AC 50/60 Hz ±1%

Dimensions: 150mm x 144mm x 208mm

### Display Specifications:

Display: 5.7" TFT QVGA Touch Panel colour LCD

Measured Data Display: Trend display, digital display, bar-graph display

Trend Screen: 16 colors vertical or horizontal (selectable)

Display Points: Maximum 12 points/screen

Alarm Display: Alarm activation/released history display Marker List

### Alarm Specifications:

Setups: Up to 4 alarms can be programmed per channel

Alarm Types: Upper limit, lower limit, abnormal data

### Ethernet Specifications:

FTP Server: Download and delete of the record file saved in SD memory. Data file can be read from the network computer with the software supplied with the recorder

HTTP Web Server: Measured-value display and alarm condition of each channel by browser

Modbus TCP: Data read in/write of setting out is possible at a Modbus TCP protocol

Email: Email notification at specified time for alarm activation and report data

### Paperless Recorder with Touch Screen

Code No Description

355-460	6 Channels - No Alarms
355-465	6 Channels - Relay Alarms
355-470	9 Channels - No Alarms
355-475	9 Channels - Relay Alarms
355-480	12 Channels - No Alarms
355-490	Portable Carry Case

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## WiFi Data Logger – Temperature, Humidity and Dew Point

This data logger measures and stores over 500,000 temperature and humidity readings over a -20 to +60°C (-4 to +140°F) and 0 to 100%RH scale. Following initial setup using a USB connection, data is streamed at user defined intervals over a standard WiFi network. The supplied Windows 7, Vista and XP control software allows communication with the data logger over a WiFi connection and users can define the logger name, logging rate and upload frequency. The software also provides graphing functionality and the ability to export data to other applications. The data logger includes a rechargeable lithium battery which provides battery life for up to 1 year between charges.



- **Temperature range: -20 to +60°C**
- **Humidity range: 0 to 100%RH**
- **Dew point indication via Windows Control Software**
- **WiFi capability and integrated display**
- **Sensor memory stores all data even if WiFi is temporarily disconnected**
- **Rechargeable internal lithium polymer battery**
- **Supplied with wall bracket and micro USB lead**
- **Data logger set-ups: Logger Name, °C/°F, Logging rate (1s, 10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), Upload frequency, High and Low Alarms, Start Date & Start Time**

### WiFi Data Logger – Temperature, Humidity and Dew Point

Code No Description

357-790 WiFi Data Logger – Temperature, Humidity & Dew Point

## WiFi Temperature Data Logger with Thermocouple

This data logger measures the temperature of the environment in which the probe is situated. The accuracy of the type K probe supplied is  $\pm 1.5^\circ\text{C}$  (operating range 0 to 400°C). Data is then transmitted wirelessly via a WiFi network to a PC and viewed via the graphing tool or it can be exported to Excel®. The software installed on the PC will allow set up, data logging and data review. During configuration, the sensor will search for an existing wireless network whilst physically connected to the PC. It can then be placed anywhere within the range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application or cloud service (max 30 days at 10 second sample interval). Logged data is retained if the battery goes flat. The range of the sensor can be increased by using WiFi extenders.



- **WiFi capability and integrated display**
- **Wireless connectivity to PC via WiFi**
- **View and analyse multiple sensors using the PC application, including immediate graphing of historic data**
- **Temperature measurement range -270°C to +1300°C (-454°F to +2372°F) (probe dependent)**
- **Rechargeable internal lithium polymer battery**
- **Data logger set-ups: Logger Name, °C/°F, Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), Upload Frequency, High and Low Alarms, Start Date & Start Time**

### WiFi Temperature Data Logger with Thermocouple

Code No Description

357-805 WiFi Temperature Data Logger with Thermocouple

## Ex Stock WiFi Dataloggers

### WiFi Temperature Data Logger

These data loggers measure the temperature of the environment in which the probe is situated. Data is then transmitted wirelessly via a WiFi network to a PC and viewed via the graphing tool or it can be exported to Excel®.

During configuration the sensor will search for an existing wireless network whilst physically connected to the PC. It can then be placed anywhere within the range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application (max 120 days at 10 second sample interval). The range of the sensor can be increased by using WiFi extenders. When configured using typical sampling periods (e.g. once every 60 seconds) the sensor will operate for over one year. The battery can then be recharged via a PC or USB +5V wall adapter using the USB lead provided. The software installed on the PC will allow set-up, data logging and data review. Set-up features will include sensor name, °C/°F, sample rate, and high/low alarms. Two versions are available: one with an internal temperature sensor and the other with an external temperature probe. The probe (thermistor) can be used in a wide range of temperature applications, such as in manufacturing processes, cold storage, hot storage etc. This logger is a low powered battery device.



357-800 with Internal Sensor



357-810 with External Sensor

- **WiFi capability and integrated display**
- **Wireless connectivity to PC via WiFi**
- **Measurement range:**  
357-800: -20 to +60°C (-4°F to +140°F)  
357-810: -40 to +125°C (-40°F to +257°F)
- **Accuracy:**  
357-800:  $\pm 0.5^\circ\text{C}$  (-10 to +50°C)  
357-810:  $\pm 0.6^\circ\text{C}$  (-10 to +70°C)
- **Main unit IP55, probe IP67**
- **Rechargeable internal lithium polymer battery**
- **Data logger set-ups: Logger Name, °C/°F, Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), Upload Frequency, High and Low Alarms, Start Date & Start Time**

### WiFi Temperature Data Logger

Code No Description

357-800 WiFi Temperature Data Logger with Internal Sensor

357-810 WiFi Temperature Data Logger with External Sensor

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## Ex Stock Dataloggers

### USB Datalogger - Temperature

These data loggers measure and store over 16,000 temperature readings over a range of -35 to +80°C (-31 to +176°F). The user can easily set up the logging rate and start-time, and download the stored data by plugging the module straight into a PC's USB port and running the free purpose designed software under Windows 7, Vista and XP. Data can then be graphed, printed and exported to other applications.

The data logger is supplied with a long-life lithium battery. Correct functioning of the unit is indicated by a flashing red, green and orange LEDs. The data logger is protected against moisture to IP67 when the protective cap is fitted. Models with or without a high contrast display are available.

- **Temperature Range: -35 to +80°C (-31 to +176°F)**
- **USB Interface for Set-up and Data Download**
- **2 User-Programmable Alarm Thresholds**
- **Bright Red, Green and Orange LED Indication**
- **Supplied with Internal Lithium Battery and Windows Control Software**
- **IP67 Protection**
- **High contrast LCD with two and a half digit display function (357-702)**
- **Datalogger Set-ups: Logger Name, °C / °F, Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), High and Low Alarms, Start Date and Start Time**

#### USB Datalogger - Temperature

Code No Description

357-700	USB Datalogger - Temperature
357-702	USB Datalogger - Temperature with Display



### USB Datalogger - Temperature with Extended Range

This data logger measures and stores over 32,500 temperature readings over a -40 to +125°C (-40 to +257°F) range. The stainless steel 316 assembly provides protection from corrosion, impact and water ingress to IP67/NEMA 4X. The unit is powered by a 2/3AA 3.6V lithium battery which allows logging for up to 3 years. Setup and downloading is completed by plugging the data logger into a PC's USB port and running the purpose designed software under Windows 7, Vista and XP. Data can then be graphed, printed and exported to other applications.

- **Extended Temperature Range: -40 to +125°C (-40 to +257°F)**
- **Stainless Steel (316 grade) case**
- **Environmental protection to IP67**
- **USB Interface for Set-up and Data Download**
- **Immediate and delayed start logging**
- **Supplied with Internal Lithium Battery and Windows Control Software**
- **Datalogger Set-ups: Logger Name, °C / °F, Logging Rate (1s, 10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), Data rollover (Allows unlimited logging periods by overwriting the oldest data when the memory is full), Start Date and Start Time**

#### USB Datalogger - Temperature with Extended Range

Code No Description

357-704	USB Datalogger - Temperature with Extended Range
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with 316 Stainless Steel Case

### USB Datalogger - Thermocouple Input

These data loggers measure and store over 32,000 temperature readings from either a Type K, J or T type thermocouple. The thermocouple is attached via a miniature thermocouple socket at the base of the unit. The user can then easily set up the thermocouple type, logging rate, start-time, logging mode, and download the stored data by plugging the module straight into a PC's USB port and running the free purpose designed software under Windows 7, Vista and XP. Data can then be graphed, printed and exported to other applications. Each data logger is supplied with a basic Type K thermocouple (for 0 to 400°C measurement) and a long-life lithium battery. Models with or without a high contrast display are available.

- **Temperature range: Type K: -200°C to +1300°C, Type J: -130°C to +900°C, Type T: -200°C to +350°C**
- **USB Interface for Set-up and Data Download**
- **2 User-Programmable Alarm Thresholds**
- **Bright Red and Green LED Indication**
- **Supplied with Internal Lithium Battery and Windows Control Software**
- **Supplied with basic Type K thermocouple rated from 0°C to 400°C**
- **Dimensions: 3mm dia x 100mm long, with 1.4mtr lead fitted with mini plug**
- **High contrast LCD with two and a half digit display function (357-730)**
- **Datalogger Set-ups: Logger Name, °C / °F, Logging Rate (1s, 10s, 1m, 5m, 30m, 1hr, 6hr, or 12hr), High and Low Alarms, Start Date and Start Time, Range of logging modes available**

#### USB Datalogger with Thermocouple Input

Code No Description

357-720	USB Datalogger with Thermocouple Input
357-730	USB Datalogger with Thermocouple Input with Display



### USB Datalogger - Temperature, Humidity and Dew Point

These data loggers measure and store over 16,000 relative humidity and 16,000 temperature readings over the ranges of 0 to 100%RH and -35 to +80°C (-31 to +176°F). The user can easily set up the logging rate and start-time, and download the stored data by plugging the module straight into a PC's USB port and running the purpose designed software under

Windows 7, Vista and XP. Relative humidity, temperature and dew point (the temperature at which water vapour present in the air begins to condense) data can then be graphed, printed and exported to other applications. The data logger is supplied with a long-life lithium battery. Status indication is via flashing red and green LEDs. The logger is protected against ingress from water and dust to IP67 standard when the plastic cap and seal are fitted. Models with or without a high contrast display are available.

- **Temperature Range: -35°C to +80°C**
- **Humidity Range: 0 to 100% RH - Accuracy: ±3.0 (between 20 and 80% RH)**
- **Dew point indication via Windows Control Software**
- **Supplied with Internal Lithium Battery and Windows Control Software**
- **High contrast LCD with two and a half digit display function (357-750)**
- **Datalogger Set-ups: Logger Name, °C / °F, Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), High and Low Alarms, Start Date and Start Time**

#### USB Datalogger - Temperature and Humidity

Code No Description

357-710	USB Datalogger - Temperature / Humidity
357-750	USB Datalogger - Temperature / Humidity with Display



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# Ex Stock Dataloggers

## High Accuracy USB Datalogger - Temperature, Humidity and Dew Point

These higher accuracy data loggers measure and store over 16,000 relative humidity and 16,000 temperature readings over the ranges of 0 to 100%RH and -35 to +80°C (-31 to +176°F). The user can easily set up the logging rate and start-time, and download the stored data by plugging the module straight into a PC's USB port and running the purpose designed software under Windows 7, Vista and XP. Relative humidity, temperature and dew point (the temperature at which water vapour present in the air begins to condense) data can then be graphed, printed and exported to other applications. The data logger is supplied with a long-life lithium battery. Status indication is via flashing red and green LEDs. The logger is protected against ingress from water and dust to IP67 standard when the plastic cap and seal are fitted. Models with or without a high contrast display are available.



- **Temperature Range: -35°C to +80°C**
- **Humidity Range: 0 to 100% RH - Accuracy: ±2.0 (between 20 and 80% RH)**
- **Dew point indication via Windows Control Software**
- **User-Programmable Alarm Thresholds for %RH & T**
- **Supplied with Internal Lithium Battery and Windows Control Software**
- **Environmental Protection to IP67**
- **High contrast LCD with two and a half digit display function (357-752)**
- **Datalogger Set-ups: Logger Name, °C / °F, Logging Rate (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), High and Low Alarms, Start Date and Start Time**

### High Accuracy USB Datalogger - Temperature and Humidity

Code No	Description
357-712	USB Datalogger - Temperature / Humidity
357-752	USB Datalogger - Temperature / Humidity with Display

## USB datalogger - Voltage and 4-20mA Loop

These data loggers measure and store up to 32,000 readings over a 0 to 30Vd.c. or 4 to 20mA range. The user can easily set up the logging rate and start time and download the stored data by plugging the data logger into a PC's USB port and running the purpose designed software under Windows 7, Vista and XP. Data can then be graphed, printed and exported to other applications. The data logger is supplied with a long-life lithium battery. The status of the data logger is indicated by two red and green LEDs. The data logger is connected to the measurement circuit using a part of screw terminals in the cap and is supplied with a set of measurement leads terminating in crocodile clips.



- **0 to 30V d.c. voltage measurement range (357-770)**
- **4-20mA current loop measurement range (357-780)**
- **USB interface for setup and data download**
- **Connection via two screw terminals in the cap**
- **User-programmable alarm thresholds**
- **Supplied with lithium battery and Windows control software**
- **Data logger set-ups: Logger Name, Logging rate (1s, 10s, 1m, 5m, 30m, 1hr, 6hr, 12hr), High and Low Alarms, Start Date and Start Time**

### USB Datalogger - Voltage and 4 to 20mA Loop

Code No	Description
357-770	USB Datalogger - Voltage
357-780	USB Datalogger - 4 to 20mA Loop

## Programmer and Data Collector for USB Dataloggers

This Programmer and Data Collector allows users of our USB Dataloggers to configure and collect/view data from their instruments 'in the field'. This allows continual logging with shorter breaks in data collection, on-site data collection in graph, legend and summary format and the ability for users to reconfigure loggers. The logger is simply connected to the programmer via a standard USB port. Once connected, the user is guided through a simple touchscreen menu with options to Set-Up Logger, Stop Logger & Download and View Data. On-screen instructions follow the same structure as the software currently provided with each data logger. Data from up to 100 loggers can be viewed on the programmer, with data from a further 400 units stored on the unit at any one time. Data can be transferred to a PC or Mac using a micro USB cable supplied with the unit. Once uploaded, data is saved in comma separated variable (csv) format, making it suitable for import into spreadsheet packages such as Microsoft Excel or graphed on a PC using the USB dataloggers software.



- **Collects and stores data from at least 500 data loggers**
- **View downloaded data with general trend and summary screens**
- **Allows full or quick set-up of compatible our USB data loggers**
- **Touch screen interface for navigation of menus**
- **2.8" TFT display**
- **Stored data can be transferred to a PC/Mac via micro USB cable**
- **Use the USB dataloggers software on a PC to graph data and export to Excel**
- **Integral rechargeable lithium battery provides up to 8 hours use(nominal)**

### Programmer and Data Collector for USB Dataloggers

Code No	Description
357-760	Programmer and Data Collector for USB Dataloggers

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# Ex Stock Loop and Thermocouple Calibrators

## Mini Current/Loop Portable Calibrator

This multi purpose process loop tool offers high accuracy in an ultra small rugged package. The mini source process calibrator has the ability to calibrate or troubleshoot any 4-20 mA loop device. A single push button allows the user to select one of the five current outputs (4, 8, 12, 16 or 20mA) which can drive up to 300 ohms or act as a two wire simulator with an external loop power supply of up to 30V DC. Typical applications include; chart recorders, panel meters, data acquisition systems and other process instruments.



- **Output: 5 current steps (4, 8, 12, 16 or 20mA)**
- **Accuracy: typically  $\pm 0.075\%$  of full scale**
- **Voltage compliance: Source, Internal 9 volt battery (supplied). Simulate, External supply up to 30 V DC**
- **Temperature stability: 100ppm/°C**
- **Output terminations: Two alligator clips on 200mm leads**
- **Battery life: 50 hours at 4mA output**
- **Supplied with carrying case, 9V battery, NIST certificate and instruction manual**
- **Operating temperature range: 0 to 50°C**
- **Size: 96 x 61 x 25mm (HxWxD)**

### Mini Current/Loop Portable Calibrator

Code No	Description
252-206	Mini Current/Loop Portable Calibrator
898-406	Spare 9V battery

## 4-20mA Loop Calibrator

This rugged easy to use Milliamp Calibrator is designed to give the technician laboratory grade accuracy in the field. It is suitable for 4-20mA applications. Simple controls and a high accuracy and resolution put this calibrator in a class of it's own. It can simulate, power and measure two-wire transmitters and with automatic step and ramp functions it can calibrate remote 4-20mA devices. keys which allows both large and small output changes to be made with ease. The instrument is also supplied with a moulded rubber holster which makes it ideal for harsh working environments.



- **High accuracy source and read capability**
- **Easy to read LCD display**
- **Intuitive controls make operation easy even for infrequent users**
- **Supplied with test leads, 9V battery, NIST certificate and instruction manual**
- **Range: 0.00 to 24.00 mA**
- **Resolution: 0.001 mA**
- **Accuracy:  $\pm 0.015\%$  of reading  $\pm 2\mu A$**
- **Step size: 4 mA (4, 8, 12, 16 or 20mA)**
- **Scroll size: 0.001 mA**
- **Operating Temperature: -10 to 55°C**
- **Load capacity: 1000 ohms minimum**
- **Weight: 340g**
- **Size: 145 x 80 x 36mm (HxWxD)**

### 4-20mA Loop Calibrator

Code No	Description
252-225	4-20mA Loop Calibrator
898-406	Spare 9V battery

## Thermocouple Calibrator

This rugged easy to use Thermocouple Calibrator is designed to give the technician laboratory grade accuracy in the field. It is suitable for the simulation and measurement of ten common thermocouple types (aswell as mV) to a resolution of 0.01°C/°F in measure mode and 0.1°C/°F in source mode. Operation of these calibrators is made easy through the use of simple controls, a large rotary pot for easy setting of output values and the ability to accept both bare wire thermocouples in addition to mini plug inputs. The instrument is also supplied with a moulded rubber holster which makes it ideal for harsh working environments.



- **High accuracy source and read capability**
- **Thermocouple and mV in / out**
- **Easy to read LCD display**
- **Moulded rubber holster**
- **Simple and intuitive controls make operation easy even for infrequent users**
- **Min./Max recall in measure mode**
- **Three setpoints per thermocouple range**
- **Connection out is made via mini flat pin thermocouple socket within instrument or via screw terminals for bare thermocouple wires**
- **Suitable for thermocouple types K, T, J, E, R, S, B, L, U, C and mV**
- **Accuracy (source/measure):**  
 Type K: -100°C to +1000°C  $\pm 0.35\%$ , +1000°C to +1372°C  $\pm 0.5\%$   
 Type T: -200°C to -150°C  $\pm 0.7\%$ , -150°C to +400°C  $\pm 0.3\%$   
 Type J: -210°C to -100°C  $\pm 0.5\%$ , -100°C to +1200°C  $\pm 0.3\%$   
 Type E: -200°C to -100°C  $\pm 0.5\%$ , -100°C to +1000°C  $\pm 0.3\%$   
 Types R & S: 0°C to +250°C  $\pm 1.8\%$ , +250°C to +1767°C  $\pm 1.0\%$   
 mV: -10 to 75.000mV  $\pm 0.007\%$  of reading  $\pm 10\mu V$
- **Resolution: 0.01°C/°F in measure mode and 0.1°C/°F in source mode**
- **Operating Temperature: -10 to +55°C**
- **Power supply: 9V battery (supplied)**
- **Weight: 340g**
- **Size: 145 x 80 x 36mm (HxWxD)**

### Thermocouple Calibrator

Code No	Description
252-143	Thermocouple Calibrator
898-406	Spare PP3 9V battery

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# Ex Stock Temperature Calibrators

## High Accuracy Temperature Calibrator

Our high accuracy temperature calibrator is an ideal device to handle all of your temperature calibration needs in a truly rugged, low cost package.

It combines virtually all widely used thermocouples and RTD's in one device. You'll never have to worry about finding a temperature device you can't calibrate. This is especially true when calibrating "smart" or pulsed RTD transmitters where many other calibrators fail to work or operate at reduced accuracy specs as it handles those applications with ease. The instrument is also supplied with a moulded rubber holster which makes it ideal for harsh working environments.



- **High accuracy, typically  $\pm 0.4^{\circ}\text{C}$  for thermocouples and  $\pm 0.3^{\circ}\text{C}$  for RTDs all errors included**
- **10 different thermocouple types including K, T, J, N, E, R, S, B, L, U and mV. 8 RTD types including 3 or 4 wire Pt100, 200, 500, 1000, Ni120 and Cu10 as well as ANSI and JIS standards**
- **Direct keyboard entry or scroll control of output**
- **NEMA4 rated case, rugged design**
- **RTD simulation works with all smart transmitters**
- **Connection out is made via mini flat pin thermocouple socket or for RTD via banana jack socket**
- **Store up to nine setpoints for each output function**
- **RS232 interface**
- **Each unit is supplied with 4AA batteries, NIST certificate and instruction manual**
- **Accuracy examples:**  
Type K:  $-200^{\circ}\text{C}$  to  $0^{\circ}\text{C} \pm 0.6^{\circ}\text{C}$ ,  $0^{\circ}\text{C}$  to  $+1000^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$ ,  $+1000^{\circ}\text{C}$  to  $+1370^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$   
Type J:  $-210^{\circ}\text{C}$  to  $0^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$ ,  $0^{\circ}\text{C}$  to  $+800^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ ,  $+800^{\circ}\text{C}$  to  $+1200^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$   
RTD Pt100:  $-200^{\circ}\text{C}$  to  $+100^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ ,  $+100^{\circ}\text{C}$  to  $+300^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$ ,  $+300^{\circ}\text{C}$  to  $+600^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$ ,  $+600^{\circ}\text{C}$  to  $+800^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
- **Operating temperature:  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$**
- **Power supply: 4 AA batteries (supplied)**
- **Weight: 850g**
- **Size: 220 x 106 x 58mm (HxWxD)**

### High Accuracy Temperature Calibrator

Code No Description

252-185	High Accuracy Temperature Calibrator
898-564	Spare set of 4 AA batteries

## Prices

We have no minimum order value. Carriage within the UK is just £12.00 per shipment but free for orders above £100.00. We believe that all the products in this catalogue represent excellent value for money. If you are currently purchasing these products elsewhere, please check our prices. We are sure that you will not be disappointed.

## Multi-Function Calibrators

A full multi function calibrator at a very competitive price with excellent accuracy best describes this calibrator. It calibrates and simulates virtually all thermocouple and RTD inputs as well as volts, millivolts, pressure and frequency signals. It also combines several DMM functions like voltage measurement to 250V AC or DC. This combination of a high accuracy calibrator along with common DMM functions may make it the only instrument you need to maintain and calibrate your instrumentation. The instrument is also supplied with a moulded rubber holster which makes it ideal for harsh working environments. A dual display version is also available with all the features of our standard multi-function calibrator, except by showing the DC Voltage/DC Current output as well, transmitters can be easily calibrated too.



- **High accuracy on a wide variety of ranges for thermocouple, RTD, millivolts, volts, current and frequency**
- **Each unit is supplied with standard test leads, 4AA batteries, NIST certificate and instruction manual (optional thermocouple lead kit available)**
- **Thermocouple ranges: Types K, T, J, N, E, R, S, B, L and U**  
**RTD ranges: Pt385 (100, 200, 500 and 1000 ohms), Pt392, JIS, Ni120 and Cu10**  
**Ohms ranges: 0 to 400.00 and 401.0 to 4000.0**  
**mA ranges: 0 to 24.000 mA**  
**millivolts: -10 to 75mV**  
**Voltage: 0 to 20.000V (Input/Output) or 0 to 250V AC or DC (Input only)**  
**Frequency: 0-1000.0 CPM, 0 to 1000.0 Hz or 0 to 10.00 KHz**
- **Accuracy:**  
**Thermocouple:  $\pm 0.4^{\circ}\text{C}$**   
**RTD Pt100:  $\pm 0.1^{\circ}\text{C} \pm 0.075$  ohms ( $\pm 0.3^{\circ}\text{C}$  total error)**  
**Ohms: 0 to 400 $\Omega$   $\pm 0.025\%$   $\pm 0.05\Omega$ , 401 to 4000 $\Omega$   $\pm 0.025\%$   $\pm 0.5\Omega$**   
**Voltage:  $\pm 0.015\%$  reading  $\pm 2\text{mV}$**   
**Current:  $\pm 0.015\%$  reading  $\pm 2\text{mA}$**   
**Frequency:  $\pm 0.05\%$  FS  $\pm 1$  LSD**
- **Voltage drive capability: 1 mA**
- **RTD frequency response: 10 mS - works with smart transmitters**
- **Operating temperature:  $-10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$**
- **Power supply: 4 AA batteries**
- **Weight: 820g**
- **Size: 220 x 120 x 53mm (HxWxD)**

### Multi-Function Calibrators

Code No Description

252-345	Single Display Multi-function Calibrator
252-350	Dual Display Multi-function Calibrator
898-564	Spare set of 4 AA batteries
252-146	Thermocouple Cable Connection Kit

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# Ex Stock Dry Block Calibrators

## Portable Compact Dry Block Calibrator

This dry block calibrator is compact and easy to use, making it a suitable unit for use on site without the need for heavy and expensive equipment. The temperature can be set from the panels on the front of the calibrator in 0.1°C increments up to 300°C and probes are to be inserted into the corresponding wells. The unit is controlled by a PID controller and an RTD sensor which is housed within the aluminium block, cooling is aided by a fan which allows rapid changes in temperature. The well immersion depths are 90mm and the unit is supplied with an instruction manual, in-house test certificate and power cable.



- **Easy to use, affordable and portable dry block calibrator**
- **5 different wells for a variety of thermocouple diameters (2 x 3.5mm, 4.2mm, 5.0mm & 6.8mm)**
- **Range: +33 to +300°C**
- **Resolution: 0.1°C/°F**
- **Accuracy: ±0.8°C (up to 100°C), ±1.6°F (up to 212°F), ±1.6°C (100 to 200°C), ±3.2°F (212 to 392°F), ±2.8°C (200 to 300°C), ±5.6°F (392 to 572°F)**
- **Stability: ±0.1°C (33 to 100°C), ±0.2°F (91.4 to 212°F), ±0.2°C (100 to 200°C), ±0.4°F (212 to 392°F), ±0.4°C (200 to 300°C), ±0.8°F (392 to 572°F)**
- **Heating time: 30 minutes to maximum**
- **Cooling time: 30 minutes to 100°C**
- **Stabilisation time: 20 minutes maximum after temperature has been set**
- **Overload alarm**
- **230V AC**
- **Well Depth: 100mm (90mm immersion depth)**
- **Size: 113x183x233mm (HxWxD)**
- **Weight: 3 kgs**



### Portable Compact Dry Block Calibrator

Code No Description

Code No	Description
985-300	Portable Compact Dry Block Calibrator

## Dry Block Calibrators

Our range of dry block calibrators, generate true reference temperatures over the range of -40°C to +650°C to facilitate the calibration of temperature sensors and systems. Simply place the sensor to be calibrated in the calibrator and set the desired temperature using the simple two button controller. When stability occurs, read the true temperature from the calibrator and recalibrate the system or sensor accordingly. All types of sensors can be calibrated as well as complete temperature loops. The instrument has a USB connection and optional software is available for fully automatic calibration. Each instrument is itself calibrated and supplied with a calibration certificate to National Standards. Each unit is also supplied with two inserts, a manual and a test cable for thermostat. An optional carrying/storage case is also available.



- **Ranges:**  
-40°C (off ambient) to 150°C or  
+30°C to 650°C depending on model selected
- **Accuracy:**  
985-150 ±0.3°C  
985-650 ±1.5°C
- **Stability:**  
985-150 ±0.05°C  
985-650 ±0.5°C
- **Resolution: 0.1°C**
- **Easy to use**
- **USB interface**
- **Optional Windows® software available**
- **No liquids, safe dry calibration**
- **Immersion well:**  
985-150, 19mm diameter x 110mm depth  
985-650, 26mm diameter x 155mm depth
- **Supplied with two inserts for the well:**  
985-150, one 3.5mm and one 6.5mm  
985-650, one undrilled and one 6.5mm
- **Ambient operating range: 0 to 40°C**
- **Supplied complete with a test cable for thermostat and calibration certificate**
- **Optional carrying/storage case available**
- **Dimensions: 117x300x245mm**
- **Weight: 5.5kgs**



### Dry Block Calibrators

Code No Description

985-150	-40°C (off ambient) to 150°C
985-650	+30°C to 650°C
985-975	Optional carrying/storage case
985-980	Optional software package

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## Quality

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# Ex Stock Pressure & Voltage/Current Calibrators

## Pressure Calibrator

This rugged easy to use Pressure Calibrator is designed to give the technician laboratory grade accuracy in the field. Operation of these calibrators is made easy through the use of a sealed membrane panel with simple controls. The outputs are set through the use of step and ramp keys that allow both large and small output changes to be made with ease. There are four models to choose from (200" H<sub>2</sub>O, 30 PSI, 100 PSI or 3000 PSI). The calibrators can also be purchased as a kit which includes the calibrator, a hand pump, connectors and accessories. The instrument is also supplied with a moulded rubber holster which makes it ideal for harsh working environments.



- High accuracy gauge or differential capability
- Rugged, dust tight, water resistant case
- Easy to read super twist LCD display
- Intuitive controls make operation easy even for infrequent users
- Each unit is supplied with test leads, carrying case, 9V battery, NIST certificate and instruction manual
- Optional kit available includes: calibrator, hand pump, connectors and accessories
- Ranges:
  - Either -14.00 to 3000.0 PSIG or
  - 14.00 to 30.000 PSIG/PSID or
  - 14.0 to 100.00 PSIG/PSID or
  - ±200.00" H<sub>2</sub>O PSIG/PSID
- Resolution:
  - Either 3000 PSI - 0.1 PSI
  - 30 PSI - 0.001 PSI
  - 100 PSI - 0.01 PSI
  - 200" - 0.01" H<sub>2</sub>O
- Accuracy: 0.05% of full scale
- Below -5 PSI: 0.1% of FS ±1 LSD
- Operating Temperature: 0 to 50°C
- Media: Non corrosive gas and liquids
- Engineering units: PSI, in H<sub>2</sub>O, cm H<sub>2</sub>O, mm H<sub>2</sub>O, BAR, mm Hg, kPA and kg/cm<sup>2</sup>
- Special key features: Zero, Min/Max, Clear, Damp and Hold
- Power supply: 9V battery (supplied)
- Weight: 356g
- Size: 145 x 80 x 36mm (HxWxD)

### Pressure Calibrator

Code No Description

252-360	Pressure Calibrator - 30 PSI
252-364	Pressure Calibrator - 100 PSI
252-368	Pressure Calibrator - 3000 PSI
252-372	Pressure Calibrator - 200" H <sub>2</sub> O
252-376	Pressure Calibrator with Kit - 30 PSI
252-380	Pressure Calibrator with Kit - 100 PSI
252-384	Pressure Calibrator with Kit - 3000 PSI
252-388	Pressure Calibrator with Kit - 200" H <sub>2</sub> O
898-406	Spare 9V battery

## Voltage/Current Calibrator

This new general purpose current and voltage source can be used in a variety of test and process control applications. It combines the latest digital and analogue circuitry to achieve its rated specifications in a small reliable package. This unit has the capability to store and recall up to two values in the set points provided by the SP1 and SP2 keys. It has a RS232 port, which can be accessed via a custom cable available from us, allowing the unit to be computer controlled for automated testing. It can be powered in the field by a 9 V battery or on the bench with optional AC adaptor.



- Remarkable 0.015% of reading accuracy
- Rugged, dust tight, water resistant case
- Easy to read super twist LCD display
- Intuitive controls make operation easy even for infrequent users
- RS232 interface. Can be computer controlled
- Each unit is supplied with test leads, carrying case, 9V battery, NIST certificate and instruction manual
- Ranges: 0 to 200.00 mV, 0 to 2.0000 V, 0 to 20.000 V and 0 to 24.000 mA
- Resolution: 0.01mV, 0.0001V, 0.001V and 0.001mA
- Accuracy: ±0.015% FS ± 2LSD
- Operating Temperature: 0 to 50°C
- Capacitive load: voltage - no limitations, current - not applicable
- Power supply: 9V battery (supplied) or AC adaptor (optional)
- Weight: 305g
- Size: 145 x 80 x 36mm (HxWxD)

### Voltage/Current Calibrator

Code No Description

252-284	Voltage/Current Calibrator
252-292	RS232 Connection Cable
898-406	Spare 9V battery
753-617	AC adaptor

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# Ex Stock Hand Held Temperature Indicators

## Hand Held Multi Thermocouple Single or Dual Input Indicator

These hand held digital thermocouple indicators accept K T J N E R & S thermocouple types and have a clear LCD display. They have either one or two thermocouple inputs dependent upon model selected. The dual unit allows the user to make two readings which can be viewed alternately as required or a differential reading can be obtained at the touch of a button showing the difference in temperature between the two thermocouples. The case is manufactured from hi-grade ABS plastic and is supplied complete with a moulded rubber holster which makes it ideal for harsh working environments. It also has a flip out desk stand built into the rear of the instrument for bench work. Other features include max/min/avg display and data hold function keys, timer, a °C/°F/K transfer key and an ergonomically designed keypad with non slip function keys.



- One or two thermocouple inputs dependent upon model selected
- Hand held with moulded rubber holster
- Resolution: 0.1°C/0.1°F/0.1K
- Accuracy: Types K,J,E and T:  $\pm 0.1\%$  of reading  $+0.7^{\circ}\text{C}$  ( $-100^{\circ}\text{C}$  to  $+1300^{\circ}\text{C}$ ), Types R and S:  $\pm 0.1\%$  of reading  $+2^{\circ}\text{C}$  ( $0^{\circ}\text{C}$  to  $1700^{\circ}\text{C}$ ), Type N:  $\pm 0.1\%$  of reading  $+1.5^{\circ}\text{C}$  ( $-100^{\circ}\text{C}$  to  $+1300^{\circ}\text{C}$ )
- Read rate: once per second
- Suitable for use with most thermocouple types
- Weight 270g
- Power supply: 4 x AAA battery (supplied)

### Hand Held Multi Thermocouple Indicator

Code No Description

753-661	Single Input Multi Thermocouple Type Indicator
753-671	Dual Input Multi Thermocouple Type Indicator
898-567	Spare pack of 4 AAA Batteries

## Hand Held Four Channel Type K Thermocouple Datalogger with Windows® Software

This easy to use hand held digital type K thermocouple datalogger has a large display which shows up to four channels simultaneously for comparing and recording various temperature readings. This lightweight and durable datalogger features a backlit LCD screen which produces a remarkable display quality. The operation interface is intuitive and has a hold and record function to stop and start recordings. The unit is supplied with a USB cable, software for recording data to a PC or laptop on site and a carry case for easy transportation.

- Type K Datalogger with Windows® Software
- Range:  $-200$  to  $+1370^{\circ}\text{C}$
- Resolution: 0.1°C
- Up to 16,000 recordings per channel
- Four channels viewable simultaneously
- Accuracy:  $\pm 0.2\%$  of reading  $+1^{\circ}\text{C}$  (between  $-200^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$  and  $400^{\circ}\text{C}$  to  $1370^{\circ}\text{C}$ ),  $\pm 0.5\%$  of reading  $+1^{\circ}\text{C}$  ( $200^{\circ}\text{C}$  to  $400^{\circ}\text{C}$ )
- Backlit LCD screen
- Suitable for use with all our type K thermocouples terminating in a mini plug
- Supplied with a USB cable & carry case
- Weight 220g
- Power supply: 9V Battery (supplied)



### Hand Held Type K Thermocouple Datalogger with Windows Software

Code No Description

753-700	Type K Thermocouple Datalogger with Windows Software
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## Hand Held Datalogger Indicator - Up to Four Channel with USB Output and Windows® Software

This hand held datalogging indicator will accept Types K T J N E R & S thermocouple sensors and is available in a single, dual, three or four channel version. It features a clear backlit LCD display and is housed in a hi-grade ABS case with moulded rubber holster which makes it ideal for use in harsh working environments. The instrument can log up to 10000 readings per channel and via a USB output and supplied Windows® software, measurements can be made in the field and then downloaded simultaneously or later to a PC. High and Low alarms are configurable from the PC as well as being able to export the data in a variety of formats. It is possible to log each channel or the differential temperature between two channels. The interval programme on the indicator incorporating a real time clock allows unsupervised measurements in variable increments. Other features include max/min/avg display and data hold function keys, timer, a °C/°F/K transfer key and an ergonomically designed keypad with non slip function keys.



- Multi channel input. Logging of either measurement or a differential measurement possible
- Up to 10000 readings per channel
- Windows® software supplied
- Selectable for thermocouple types K T J N E R or S
- °C/°F/K selectable
- Accuracy: Types K,J,E and T:  $\pm 0.1\%$  of reading  $+0.7^{\circ}\text{C}$  ( $-100^{\circ}\text{C}$  to  $+1300^{\circ}\text{C}$ ), Types R and S:  $\pm 0.1\%$  of reading  $+2^{\circ}\text{C}$  ( $0^{\circ}\text{C}$  to  $1700^{\circ}\text{C}$ ), Type N:  $\pm 0.1\%$  of reading  $+1.5^{\circ}\text{C}$  ( $-100^{\circ}\text{C}$  to  $+1300^{\circ}\text{C}$ )
- Resolution: 0.1°C/°F/K
- Selectable, from 1 second to 23 hours, 59 minutes, 59 seconds
- Hand held with moulded rubber holster
- Supplied with USB cable and Windows® software
- Power supply: 4 AAA batteries (supplied)
- Battery Life: 1000hrs

### Hand Held USB Datalogger Indicator

Code No Description

753-635	Single Channel Datalogger Indicator
753-640	Dual Channel Datalogger Indicator
753-645	Three Channel Datalogger Indicator
753-650	Four Channel Datalogger Indicator
898-567	Spare pack of 4 AAA Batteries

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# Ex Stock Pressure Sensors and Instrumentation

## Low Cost Industrial Pressure and Vacuum Transmitters

These 4~20mA pressure transmitters offer high accuracy and stability for use in a wide range of measurement applications including gas and liquids and for use with air conditioning equipment, auto engines and air compressors amongst others. The electronics are encapsulated inside a 316L stainless steel housing along with a ceramic sensing element, making these transmitters ideal for use in industrial and arduous environments. The thermal stability of ceramic is very high, so thermal shift is minimal during operation. Threaded 1/4 inch BSPP for insertion into the application.



- **Operating temperature: -40 to +100°C**
- **Output: 4~20mA current signal**
- **Accuracy: +/-0.5% FS**
- **Stability: +/-0.5% FS, maximum 1% FS**
- **Response time: 10ms**
- **Over pressure limit: 1.5 x rated value**
- **Power supply: 10-30V DC**
- **Electrical connection: via fitted DIN 43650 C connector**
- **IP67 rated**

### Low Cost Industrial Pressure Transmitters

Code No Description

716-253	1 bar
716-256	1.6 bar
716-259	2.5 bar
716-262	4 bar
716-265	6 bar
716-268	10 bar
716-271	16 bar
716-274	25 bar
716-277	40 bar
716-280	60 bar
716-283	100 bar
716-286	160 bar
716-289	250 bar
716-292	400 bar
716-295	600 bar

### Low Cost Industrial Vacuum Pressure Transmitters

Code No Description

716-250	-1 to 0 bar
716-251	-1 to 1.5 bar
716-252	-1 to 2.5 bar

## Pressure Switch/Transmitter with Display

This pressure switch gives a transistor switching output and a 4-20mA signal which can be sent to your instrumentation as well as having a local indication of process pressure. The display housing can be rotated through 300° and the display can be electronically rotated allowing for maximum flexibility of position. It is easy to configure using the ergonomically designed keypad with an easy to use an intuitive menu system. The unit is threaded 1/2" BSPP and has stainless steel wetted parts and case.



- **Wide variety of ranges available**
- **14 segment, 9mm electronically rotatable display**
- **Switching Output: Transistor PNP or NPN**
- **Switching Current: 250mA**
- **Output: 4-20mA current signal**
- **316 L stainless steel case and wetted parts**
- **Accuracy: ±0.5% of span**
- **Response time: 10ms**

### Pressure Switch/Transmitter with Display

Code No Description

716-303	1 bar
716-306	1.6 bar
716-309	2.5 bar
716-312	4 bar
716-315	6 bar
716-318	10 bar
716-321	16 bar
716-324	25 bar
716-327	40 bar
716-330	60 bar
716-333	100 bar
716-336	160 bar
716-339	250 bar
716-342	400 bar
716-345	600 bar

## Programmable Pressure Indicator/Controllers - Single or Dual Input

These programmable indicator/controllers are suitable for many process applications but is offered here as an ideal partner to our range of pressure transmitters. Available as either single or dual input they are able to provide the necessary power supply to drive a 4-20mA



loop, so you do not need to purchase a separate power supply. If required, for a small charge we can set the input up to suit your particular pressure transmitter ie. 4mA = 0 bar, 20mA = Full scale. An RS232 output is also featured.

- **Choice of single or dual input models**
- **Accuracy: ±0.1% of reading ±1 digit**
- **Resolution: Programmable**
- **Relay contact: 3A/220V AC resistive load**
- **Alarms: Two configurable alarms available**
- **Power supply:**  
Single input 12-24V AC/DC or 110/230V AC, Dual input 12-24V AC/DC
- **Dimensions: Single input: 96x48x145mm, Dual input: 96x96x120mm (HxWxD)**
- **Ambient operating temperature: -5°C to +50°C**

### Programmable Pressure Indicator/Controllers

Code No Description

716-208	Single input 12/24V AC/DC version
716-216	Single input 110/230V AC version
716-224	Dual input 12/24V AC/DC version
716-995	Set up charge for configuring input

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# Ex Stock Infrared Thermometers

## Gun Style Infrared Thermometer

This instrument is a portable, easy to use infrared thermometer with laser sighting, designed for simple non-contact temperature measurement. The thermometer has a backlit display with auto hold function and can display temperature in either °C or °F. The instrument includes an auto power off feature to conserve battery life and comes with a soft carrying case.

- **Range:** -50°C to +550°C (-56°F to 1022°F)
- **Resolution:** -50°C to +200°C: ±0.1°C/°F  
200°C to 550°C: ±1°C/°F
- **Response Time:** < 1 second
- **Accuracy:** ±2°C or 2% of reading (-20°C to +550°C), ±5°C (-50°C to -20°C)
- **Backlit display**
- °C/°F user selectable
- **Soft carry / storage case**
- **Auto power off function (after 7 seconds)**
- **Emissivity fixed at 0.95**
- **Power supply: Standard 9V battery (supplied)**



## High Performance Gun Style Infrared Thermometer

This high performance instrument is a portable, easy to use infrared thermometer with laser sighting, designed for simple non-contact temperature measurement. The thermometer has a backlit display with auto hold function and max/min record function. This instrument features an adjustable emissivity for greater versatility when measuring the temperature of different surfaces and includes an auto power off feature and a soft case.



- **Range:** -50°C to 1000°C (-58°F to 1832°F)
- **Resolution:** 0.1°C (0.1°F)
- **Response Time:** 500 ms
- **Accuracy:** ±3°C (±5°F) from -50°C to -20°C (-58°F to -4°F)  
±2°C (±3°F) from -20°C to 100°C (-4°F to 212°F)  
±2% above 100°C (212°F)
- **Adjustable emissivity 0.1 to 1.0**
- **Backlit display**
- **Auto data hold function**
- **Average reading function**
- °C/°F user selectable
- **Max/Min value record feature**
- **Soft case**
- **Auto power off function (after 6 seconds)**
- **Power supply: Standard 9V battery (supplied)**

### Gun Style Infrared Thermometer

Code No Description

757-115 Gun Style IR Thermometer

## Pocket Style Infrared Thermometer

This instrument is a compact infrared thermometer with laser sighting, designed to give an easy to carry solution to a variety of non-contact temperature measurement. The thermometer has an auto hold function, max/min record function and can be set to give an audible alarm when set high/low limits are exceeded. This instrument also has an adjustable emissivity for greater versatility when measuring the temperature of different surfaces and includes an auto power off feature.



- **Range:** -30°C to 550°C (-22°F to 1022°F)
- **Resolution:** 0.5/1°C (auto), 1°F
- **Response Time:** 0.25 seconds
- **Accuracy:** ±2°C/4°F (-20°C to 100°C, -4°F to 212°F)  
±2% of reading (101°C to 550°C, 210°F to 1022°F)
- **Auto data hold function (after releasing button)**
- °C/°F user selectable
- **Max/Min value record feature**
- **Audible alarm for set high/low values**
- **Adjustable emissivity 0.1 to 1.00**
- **Auto power off function (after 15 seconds)**
- **Power supply: 3 x AAA batteries (supplied)**

### Pocket Style Infrared Thermometer

Code No Description

757-710 Pocket Style IR Thermometer

### High Performance Gun Style Infrared Thermometer

Code No Description

757-122 High Performance Gun Style IR Thermometer

757-122 replaces previous model 757-120.

If different or higher specification instruments are required, please contact TC Direct to discuss our full range of high performance infrared thermometers.

## Calibration Service for Infrared Sensors

We can now offer an in house calibration service for all our infrared temperature sensors over the range +50°C to +500°C. With the drive towards higher product quality standards and energy efficiency, end users are demanding more certainty and traceability from the products they purchase. We provide a speedy, economical and reliable calibration service.

- **Calibration available from +50°C up to 500°C**
- **4/5 day delivery is standard or quicker if required**
- **Calibration certificate available promptly**
- **Calibration available for products purchased from us or any other manufacturer**

### Infrared Calibration

Code No Description

757-132 1 sensor at 1 point

757-133 1 sensor at 2 points

757-134 1 sensor at 3 points

998-998 Any other combination

For advice, call one of our experienced engineers on:

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# Ex Stock Infrared Thermometers

## Pen Style Infrared Thermometer

This range of infrared hand held thermometers is ideal for a variety of applications including electrical hot spot detection, HVAC and refrigeration field service, energy auditing, monitoring manufacturing processes as well as facility and vehicle maintenance. There are two models, the standard version 757-550 and the higher specification 757-555 which has the additional features of adjustable emissivity and laser sighting. Designed to fit in your pocket, they are about the same size as a marker pen and come complete with a moulded pocket clip. They can alternatively be hung from a neck chain via the small hole at one end.



- **Wide measurement range of -20°C to +500°C**
- **Accuracy of  $\pm 1\%$  or  $\pm 1^\circ\text{C}$  (whichever is greater)**
- **Emissivity:**  
757-550 - Fixed at 0.95  
757-555 - Adjustable 0.3 to 1.0
- **757-555 version has laser sighting**
- **Repeatability of  $\pm 0.5\%$  or  $\pm 0.5^\circ\text{C}$  (whichever is greater)**
- **Response time: 500 mSec (95% response)**
- **Display resolution of 0.1° up to 199.9°C, then 1° above 200°C**
- **Display reads current value, last value, max, min and average values.**
- **Displays in either °C or °F**
- **Dimensions: 163 x 27 x 16mm**
- **Power Supply: 2 AAA Batteries (supplied)**

### Pen Style Infrared Thermometer

Code No Description

757-550	Standard model
757-555	Model with adjustable emissivity and laser sighting
898-562	Spare Pack of 2 AAA Batteries

## Infrared Thermometer

This infrared thermometer is ideal for a wide variety of applications where contact temperature measurement is not possible. Offered with either 2:1, 15:1 or 30:1 optical resolution depending on model, they are supplied with a 2 wire 4-20mA output over a range of 0 to 250°C. The sensor is compatible with any instrumentation which has a 4-20mA input. All models are available with a water cooled jacket and air purge collar. Alternatively the air purge collar is available separately. An adjustable mounting bracket is also available.



- **Temperature range: 0°C to 250°C**
- **Output: 4-20mA**
- **Accuracy:  $\pm 1\%$**
- **Response time: 240mSec (90% response)**
- **Repeatability: 0.5%**
- **Resolution (Temperature): 0.25%**
- **Emissivity: 0.95 (fixed)**
- **Optical Resolution: Either 2:1, 15:1 or 30:1 depending on model selected**
- **Power supply required: 24 V DC to drive loop**
- **Dimensions: 18mm diameter x 103mm long stainless steel housing**
- **Available with optional water cooled jacket and air purge collar**
- **Rated to IP65**
- **Thread mounting: M16x1mm**
- **Supplied complete with 1 metre of cable**



### Infrared Thermometer

Code No Description

757-500	Infrared Thermometer with 2:1 optical resolution
757-540	Infrared Thermometer with 15:1 optical resolution
757-580	Infrared Thermometer with 30:1 optical resolution
757-502	Air Purge collar to suit 757-500
757-506	Air Purge collar to suit 757-540 and 757-580
757-510	Adjustable mounting bracket
757-525	Water cooled jacket and air purge collar*

\* Please note, the air/water cooled housing must be ordered with the sensor and cannot be fitted by the user.

## High Performance Infrared Thermometer

This range of infrared thermometers is suited to high performance measurements of inaccessible or moving objects and materials. Temperatures from -40°C to 1000°C can be made with an outstanding response time of 240 mSec.

The 4-20mA output is compatible with a wide variety of instrumentation available elsewhere in this catalogue without the need for special interfacing or signal conditioning. Available with either 15:1 or 30:1 optical resolution, the 30:1 version being particularly good for measuring small or distant objects. The sensors are fully configurable from a PC via simple to use configuration software which is included with each unit. The user can set the range and emissivity, apply filtering, select max, min, average or instantaneous readings as well as peak or valley hold processing. Whilst being able to work in environments up to 70°C, a version with water cooled jacket and air purge collar is also available for more arduous conditions.



- **Programmable Temperature range: -40°C to 1000°C**
- **Output: 4-20mA**
- **Configuration: with free provided software via a USB connection**
- **Accuracy:  $\pm 1\%$  of reading or  $\pm 1^\circ\text{C}$  (whichever is greater)**
- **Response time: 240mSec (90% response)**
- **Repeatability:  $\pm 0.5\%$  of reading or  $\pm 0.5^\circ\text{C}$  (whichever is greater)**
- **Emissivity: 0.1 to 1.0 (adjustable)**
- **Optical resolution: Either 15:1 or 30:1**
- **Power supply required: 24V DC to drive loop**
- **Dimensions: 25mm dia x 106.5mm long**
- **Available with optional water cooled jacket and air purge collar**
- **Rated to IP65**
- **Thread mounting: M20x1mm**
- **Supplied complete with software and 1 metre of cable**



### High Performance Infrared Thermometer

Code No Description

757-610	Infrared Thermometer with 15:1 optical resolution
757-620	Infrared Thermometer with 30:1 optical resolution
757-622	Air Purge collar
757-625	Adjustable mounting bracket
757-650	Water cooled jacket and air purge collar*

\* Please note, the air/water cooled housing must be ordered with the sensor and cannot be fitted by the user.

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We'll never be beaten!



# Ex Stock Heaters

## Cartridge Heaters

We have an extensive range of cartridge heaters to suit a wide variety of applications. Our cartridge heaters incorporate 80/20 Nickel Chromium heating wires mounted on a ceramic former close to the ceramic lined thin wall stainless steel sheath which gives excellent thermal conductivity and are ideal for high wattage applications or for applications requiring long life due to their self protective oxidation properties.



### Technical specifications:

- **Supply voltage: 230V AC**
- **Sheath Material: Stainless steel**
- **Connection Lead Length: 300mm**
- **Connection Lead Insulation: Silicone impregnated Fibreglass**
- **Working temperature: 750°C maximum**

### Warning

Whilst the elements are insulated from the sheath by magnesium oxide powder, for safety reasons the heater block and/or cartridge heater must be bonded to earth.

### 230V AC Rated Cartridge Heaters – 6.5mm dia

Code No	Diam.	Length	Power(W)
921-100	6.5mm	40mm	160
921-106	6.5mm	40mm	175
921-112	6.5mm	50mm	180
921-118	6.5mm	50mm	200
921-124	6.5mm	80mm	250
921-130	6.5mm	80mm	315
921-136	6.5mm	100mm	350
921-142	6.5mm	130mm	400
921-148	6.5mm	160mm	150

### 230V AC Rated Cartridge Heaters - 10mm dia

Code No	Diam.	Length	Power(W)
921-307	10mm	40mm	160
921-313	10mm	50mm	200
921-319	10mm	50mm	400
921-325	10mm	60mm	200
921-331	10mm	80mm	200
921-337	10mm	80mm	315
921-343	10mm	80mm	400
921-355	10mm	100mm	315
921-361	10mm	100mm	500
921-367	10mm	100mm	850
921-373	10mm	130mm	315
921-379	10mm	130mm	500
921-385	10mm	130mm	750
921-391	10mm	160mm	500
921-397	10mm	160mm	800

### 230V AC Rated Cartridge Heaters - 12.5mm dia

Code No	Diam.	Length	Power(W)
921-602	12.5mm	50mm	250
921-608	12.5mm	60mm	250
921-614	12.5mm	60mm	400
921-620	12.5mm	80mm	400
921-632	12.5mm	100mm	500
921-638	12.5mm	100mm	800
921-644	12.5mm	100mm	1000
921-650	12.5mm	130mm	800
921-656	12.5mm	160mm	800
921-662	12.5mm	160mm	1000
921-668	12.5mm	180mm	630
921-674	12.5mm	200mm	1000
921-680	12.5mm	250mm	1250
921-686	12.5mm	300mm	1500

### 230V AC Rated Cartridge Heaters - 16mm dia

Code No	Diam.	Length	Power(W)
921-800	16mm	50mm	200
921-806	16mm	80mm	400
921-812	16mm	80mm	630
921-818	16mm	100mm	500
921-824	16mm	100mm	800
921-830	16mm	130mm	1000
921-836	16mm	160mm	1000
921-842	16mm	180mm	1000
921-848	16mm	200mm	1500
921-860	16mm	250mm	1250
921-866	16mm	250mm	1600
921-872	16mm	300mm	1500

Imperial sizes are available on our website at [www.tcdirect.co.uk](http://www.tcdirect.co.uk)

## Silicone Rubber Mat Heaters

These silicone rubber mat heaters are ideal for applications which require an even heat source to a flat surface or an awkwardly positioned area. With a highly flexible yet tough material in silicone rubber, these heaters are versatile enough to be used in a wide array of applications. The recommended temperature range of these self adhesive heaters is -60°C to +250°C. Applications which require an improvement on heat transfer or acceleration of warming are also ideal. All mat heaters are stocked with 500mm PTFE leads, a strong 3M™ adhesive and are CE marked, along with the voltage and wattage.



- **Provides an even heat source to a flat surface or awkwardly positioned area**
- **Temperature Range: -60°C to +250°C**
- **Resistant to chemicals and moisture**
- **Wire wound**
- **Lightweight and malleable**
- **High quality insulation**

### Silicone Rubber Mat Heaters

Code No	Description
925-100	50mm diameter (circular) – 12V / 2W
925-102	75mm diameter (circular) – 12V / 4W
925-104	100mm diameter (circular) – 12V / 8W
925-106	50mm x 50mm (square) – 12V / 2.5W
925-108	50mm x 100mm (rect.) – 12V / 5W
925-110	200mm x 300mm (rect.) – 230V / 200W
925-112	200mm x 400mm (rect.) – 230V / 267W

For advice, call one of our experienced engineers on:

☎ 01895 855555

**TC Direct**

# Ex Stock Heaters

## Nozzle Heaters

These rugged heaters are designed for injection moulding and plastic extruders as well as other similar types of machinery. They are made from brass and have a smooth contact area without voids which gives them excellent thermal exchange. The flexible leads which are resistant to being pulled off leave the heater at a 45° angle.



- **Heater Body material: Brass**
- **Heater Maximum Watt Density: 4.5W/cm<sup>2</sup>**
- **Working temperature: 400°C**
- **Band diameters: 30mm - 60mm**
- **Band widths: 20mm - 60mm**
- **Connection cable: Fibreglass insulation with stainless steel braiding over the nickel positive, negative and earth leads**
- **Cable length: 1 metre**
- **Supply voltage: Variable, but loadings shown below are based on 220V supply**
- **Dielectric strength: 2000V**

**Warning:** For safety reasons nozzle heaters must be bonded to earth.



### Nozzle Heaters

Code No	Diameter(mm)	Width (mm)	Power (W)
923-101	30	25	105
923-107	30	30	125
923-113	30	35	145
923-119	30	40	165
923-125	35	25	120
923-131	35	30	145
923-137	35	35	170
923-143	35	40	195
923-149	35	45	220
923-155	40	25	140
923-161	40	30	165
923-167	40	35	195
923-173	40	40	225
923-179	40	45	250
923-185	45	25	155
923-191	45	30	190
923-197	45	35	220
923-203	45	40	250
923-209	45	45	285
923-215	45	50	315
923-223	45	55	345
923-221	45	60	345
923-227	50	20	140
923-233	50	25	175
923-239	50	30	210
923-245	50	35	245
923-251	50	40	280
923-257	50	50	350
923-263	50	60	420
923-269	60	20	165
923-275	60	25	210
923-281	60	30	250
923-287	60	35	295
923-293	60	40	335
923-299	60	50	420
923-301	60	60	450

**A custom built service is available for any particular nozzle heater application that you may have which is not shown above.**

## Band Heaters

These rugged heaters are designed for plastics processing machinery. They are made from stainless steel which makes them resistant to molten plastic, oil etc. They have a smooth contact area without voids which gives them excellent thermal exchange. The flexible leads are resistant to being pulled off. We can also supply a leaf thermocouple which can be positioned between the barrel and heater for simple measurement and control of the application.



- **Heater band body material: Stainless Steel**
- **Heater Maximum Watt Density: 5.5W/cm<sup>2</sup>**
- **Working temperature: 400°C maximum**
- **Band diameters: 30mm - 80mm**
- **Band widths: 20mm - 60mm**
- **Band Thickness: 4mm**
- **Connection cable: Fibreglass/PTFE insulation with stainless steel braiding over the positive and negative leads**
- **Cable length: 1 metre**
- **Supply voltage: Variable, but loadings shown below are based on 220V supply**
- **Dielectric strength: 2000V**

**Warning:** For safety reasons band heaters must be bonded to earth.



### Band Heaters

Code No	Diameter (mm)	Width (mm)	Power (W)
924-402	30	25	125
924-408	30	30	155
924-414	30	40	205
924-420	40	25	170
924-426	40	30	205
924-432	40	40	275
924-438	50	20	170
924-444	50	30	255
924-450	50	40	345
924-456	60	30	310
924-462	60	40	410
924-468	60	60	620
924-474	70	30	360
924-480	70	40	480
924-486	70	60	725
924-492	80	30	410
924-498	80	40	550
924-504	80	60	825

**A custom built service is available for any particular band heater application that you may have which is not shown above.**

## Payment

An account can instantly be opened for you! Alternatively, if you already have an account with the TC Group there is no need to remember an account number when you call us as we can find you easily. Let us do the work! You may also pay by Visa Debit, Visa Credit or Mastercard.



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# Ex Stock Thermocouple Welders

## High Powered Thermocouple Welder with Argon Facility

This universal capacitance discharge welder specifically designed for the fast and efficient production of thermocouple measuring junctions and other fine wire welds. Three selectable power ranges are provided allowing for fine adjustment of the weld power. This is particularly useful when welding very fine wires. Wires of dissimilar and similar metals including copper can be welded. A wait lamp with interlock is fitted to prevent the user from using the welder until the current set charge is reached, a facility for connecting Argon is provided for use when very clean welds are required e.g. when welding platinum wires; and a footswitch is also included to allow hands free operation.



- **Energy output: 0 to 80 Joules**
- **Weld capacity: up to 2 x 1.6mm dia conductors**
- **Power supply: 220/240V AC**
- **Power consumption: Max 360VA, quiescent 5VA**
- **Argon consumption: 300l/Hr @5psi.**
- **Weight: 5Kg**
- **Dimensions: 310 x 230 x 120mm**
- **LED indication: Mains on, Charging and Argon flow**
- **Meter: Percent of max. charge**
- **Weld switch: Activates weld & selects Argon**
- **Purge switch: Clears air from Argon circuit**
- **Potentiometer: Sets energy level**
- **Supplied complete with plier electrodes, spare carbon electrodes, magnifying glass, Argon hose with end fittings, hands free footswitch, welding goggles and mains lead**
- **Optional accessories: impact weld clip and tweezer electrodes for welding of very fine wires**



### High Powered Thermocouple Welder with Argon Facility

Code No Description

884-010	High powered Thermocouple Welder with Argon Facility
884-005	Spare Carbon Electrode
884-030	Impact weld clip
884-035	Tweezer electrodes
884-050	100 metres Type K 0.3mm twisted pair, PFA Cable
884-060	100 metres Type K 0.3mm laid flat pair, Fibreglass Cable
884-070	100 metres Type T 0.3mm twisted pair, PFA Cable
884-080	100 metres Type T 0.3mm laid flat pair, Fibreglass Cable
884-090	100 metres Type J 0.3mm twisted pair, PFA Cable
884-100	100 metres Type J 0.3mm laid flat pair, Fibreglass Cable

Other cables in different configurations or thermocouple types are available if required

## Portable Battery/Mains Powered Thermocouple Welder

This portable battery/mains powered capacitance discharge welder which has been specifically designed for making thermocouple junctions, welds and impact welds both in the workshop and out on site. It has sufficient power to weld wires of up to 1mm diameter and has a battery charge life of at least 500 welds on maximum power. It can also be run from the mains supply via the charger. A 'wait lamp' with interlock is fitted to prevent the user from using the welder until the current set charge is reached. The case is waterproof, light and robust and made from a rigid durable plastic with an easy grip handle.



- **Energy output: 0 to 30 Joules**
- **Weld capacity: up to 2 x 0.9mm dia conductors**
- **Battery life: At least 500 welds on full power**
- **Charging time: 4 hours**
- **Weight: 3Kg**
- **Dimensions: 270 x 250 x 120mm**
- **LED indication: Indicates battery status**
- **Wait lamp: To prevent premature discharge**
- **Weld switch: Releases energy from capacitors**
- **Potentiometer: Sets energy level**
- **On/off switch and power on indicator**
- **Supplied complete with mains powered battery charger, plier electrodes common electrode extension lead and welding goggles**
- **Optional accessories: Impact weld clip, spare carbon electrodes and spare welding pliers**



### Portable Battery/Mains Powered Thermocouple Welder

Code No Description

884-001	Portable Battery/Mains Thermocouple Welder
884-005	Spare Carbon Electrode
884-007	Spare Welding Pliers
884-030	Impact weld clip
884-050	100 metres Type K 0.3mm twisted pair, PFA Cable
884-060	100 metres Type K 0.3mm laid flat pair, Fibreglass Cable
884-070	100 metres Type T 0.3mm twisted pair, PFA Cable
884-080	100 metres Type T 0.3mm laid flat pair, Fibreglass Cable
884-090	100 metres Type J 0.3mm twisted pair, PFA Cable
884-100	100 metres Type J 0.3mm laid flat pair, Fibreglass Cable

Other cables in different configurations or thermocouple types are available if required

### Prices

We have no minimum order value. Carriage within the UK is just £12.00 per shipment but free for orders above £100.00. We believe that all the products in this catalogue represent excellent value for money. If you are currently purchasing these products elsewhere, please check our prices. We are sure that you will not be disappointed.

For advice, call one of our experienced engineers on:

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# Ex Stock Temperature Indicating Labels

## Reversible Colour Change Temperature Indicating Labels

These self adhesive reversible labels are ideal for applications where a simple quick check of temperature is required. They have an immediate response to temperature fluctuations and are ideal for process monitoring and laboratory work. They are accurate to  $\pm 1\%$  of their stated reading. Dimensions are shown below.



### 16 Level Vertical (large) 132x19mm (HxW)

Code No Description

905-600	10 / 40°C ranged in 2 degree increments
905-606	0 / 75°C ranged in 5 degree increments
905-609	18 / 33°C ranged in 1 degree increments
905-612	25 / 100°C ranged in 5 degree increments

### 16 Level Vertical (standard) 127x13mm (H x W)

Code No Description

905-680	-3 / 13°C ranged in 1 degree increments
905-683	14 / 31°C ranged in 1 degree increments
905-686	32 / 49°C ranged in 1 degree increments

### 8 Level Vertical (standard) 64x13mm (H x W)

Code No Description

905-692	-3 / 4°C ranged in 1 degree increments
905-695	6 / 13°C ranged in 1 degree increments
905-698	14 / 22°C ranged in 1 degree increments
905-701	23 / 31°C ranged in 1 degree increments
905-707	41 / 49°C ranged in 1 degree increments

### 7 Level Horizontal (miniature) 13x45mm (H x W)

Code No Description

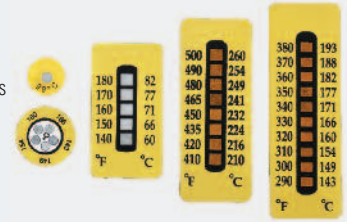
905-723	0 / 30°C ranged in 5 degree increments
905-726	30 / 60°C ranged in 5 degree increments
905-729	60 / 90°C ranged in 5 degree increments

## TC Direct for Instant Temperature Measurement and Control

- Ex stock for immediate overnight delivery
- No minimum order value!
- Instant account facilities or payment by most major debit or credit cards
- Full technical support available
- No quibble guarantee on most products
- We are Quality registered to ISO 9001

## Irreversible Colour Change Temperature Indicating Labels

These self adhesive irreversible labels are ideal for applications requiring a permanent record of the temperature reached as each element changes colour to black and remains so, as the temperature is exceeded. Their performance is not affected by transient contact with oil, water or steam. A variety of temperature ranges is available up to a maximum of 10 levels per strip. They are accurate to  $\pm 2\%$  of their stated reading. Dimensions are shown below.



### Single Level - 9mm dia Circular

Code No Description

906-202	40°C
906-205	46°C
906-208	54°C
906-211	60°C
906-214	66°C
906-217	71°C
906-220	82°C
906-223	93°C
906-226	99°C
906-229	110°C
906-232	121°C
906-235	132°C
906-238	143°C
906-241	160°C
906-244	182°C
906-247	199°C
906-250	224°C
906-253	249°C
906-256	260°C

### Five Level Clock - 15mm dia Circular

Code No Description

906-259	40 43 46 49 54°C
906-262	60 66 71 77 82°C
906-265	88 93 99 104 110°C
906-268	116 121 127 132 138°C
906-271	143 149 154 160 166°C
906-274	171 177 182 188 193°C
906-277	199 204 210 216 224°C
906-280	232 241 249 254 260°C

### Eight Level Vertical 46x18mm (H x W)

Code No Description

906-408	40 43 46 49 54 60 66 71°C
906-411	77 82 88 93 99 104 110 116°C
906-414	121 127 132 138 143 149 154 160°C
906-417	166 171 177 182 188 193 199 204°C
906-420	210 216 224 232 241 249 254 260°C

### Ten Level Vertical 54x18mm (H x W)

Code No Description

906-460	40 43 46 49 54 60 66 71 77 82°C
906-463	88 93 99 104 110 116 121 127 132 138°C
906-466	143 149 154 160 166 171 177 182 188 193°C
906-469	199 204 210 216 224 232 241 249 254 260°C

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# Notes

For advice, call one of our experienced engineers on:



**01895 855555**



# Terms and Conditions

## Prices

We will endeavour to maintain all prices for the duration of this catalogue (ie. until at least 31 December 2016). However, certain products, especially those that contain precious metals, can fluctuate in price dramatically. For current pricing information, please refer to our website at [www.tcdirect.co.uk](http://www.tcdirect.co.uk).

## Price Promise

This offer is open to UK and Republic of Ireland customers only for products which are within this catalogue although we will consider claims for other products or from customers outside of this territory both of which are at our discretion. The price promise offer means we will sell to you at 10% less than what you have been offered from another supplier. We will also send you a free gift. In order to make a claim for this offer, we require you to give us a bona fide copy of the quotation you wish us to beat which should be from an established UK supplier of temperature and/or process control products. The quotation should be no more than three months old and should be on a like for like basis to the product you wish to buy from TC Direct. For example, dimensionally, same technical description and/or with a similar delivery. We reserve the right to limit this offer to one occasion only per customer. Products containing any precious metals whatsoever are excluded from this offer but again, may be considered at our discretion.

We must of course have this eligibility clause and our decision as to accepting orders or not with this offer is final. We want you to be able to make this claim, so we will do all we can to help you. We do of course believe that we have great prices to start with, but we will never be beaten on price! On top of that, you will get great quality products as well as any advice or support that you need.

## VAT

VAT is payable on all products at the rate ruling on the date of the invoice.

## Descriptions

We give as much detail as is possible on all products and further details can be obtained from us promptly where necessary. Whilst we do not accept any liability for errors or omissions, our copywriters have done a good job to check this catalogue carefully. If there are any problems though, we will try our hardest to sort them out between us. We want you to come back.

## Suitability

The suitability of any of the products shown in this catalogue is entirely at your discretion, as the purchaser must be the best judge for any particular application. However, in the unlikely event of there being a problem, we will try our hardest to find a speedy resolution to the benefit of all concerned. We want your continuing business!

## Liability and guarantee

All our products are guaranteed to be free from defect or faulty workmanship. We will promptly replace or repair, at our cost, any product which we consider is faulty and our limitation of liability is limited to the value of the product in question. Remember that some products such as temperature sensors are consumable items and may, depending on your process, have a limited life. All of our controller products have either a 3 or 5 year warranty period! We are that confident that we won't see them again!

## Product improvement

Product improvement is a continuing goal at TC Direct. We reserve the right to change, vary or alter the product specification without prior notification.

## Delivery

All shipments within the UK are sent by TNT for next day delivery for which we charge just £12.00 except orders above £100.00 (excluding VAT) which are sent free! Whilst we cannot accept responsibility for late delivery, TNT, who are our official carriers, have a proven track record with us and very few parcels are delayed. An AM delivery can be arranged at a cost of £15.50 per shipment (depending on location) if you so wish, or if you require same day delivery, let us know so we can see if it is physically possible and we will advise you of the cost.

## Returns

Due to the specific nature of our products some items may be non returnable.

## Payment

This can be arranged by Visa Debit, Visa Credit or Mastercard or alternatively by 30 days nett monthly account, which means that payment is due by the last day of the month following the month of delivery ie. between 30 and 60 days credit. Please don't abuse this privilege as we hate sending nasty letters!

## Damage in transit or shortages

All our products are checked and packed with care, but if you do have a problem, call us as soon as you know, but no later than seven days following receipt of goods. We will look to resolve the problem to everyone's satisfaction.

## Ownership

Goods remain our property until they are paid for in full.

## Copyright

Reproduction in part or whole of this catalogue without written prior consent is prohibited.

## Promise

We promise to give you the best possible service. If you think that you have not been dealt with to your satisfaction, speak to our Customer Services Manager who will do all that is possible to rectify the matter.

## Waste Electrical and Electronic Equipment (WEEE) Directive

### TC Direct can now recycle your old electrical products for you.

If you're buying a new electrical item, we will recycle your old one for free

### Why recycle?

Unwanted electrical equipment is the UK's fastest growing type of waste.

Many electrical items can be repaired or recycled, saving natural resources and the environment. If you do not recycle, electrical equipment will end up in landfill where hazardous substances will leak out and cause soil and water contamination – harming wildlife and also human health.

### We can help

We are pleased to offer our customers the chance to recycle their old electrical items.

All returned items will be put into our segregated waste area. They will then be periodically collected by a certified waste recycling body that will take the appropriate course of action and issue the correct certificate for approved disposal.

To remind you that old electrical equipment can be recycled, it is now marked with a crossed-out wheeled bin symbol. Please do not throw any electrical equipment (including those marked with this symbol) in your bin

If you have any questions about this scheme, just ask a member of staff or get in touch.

### What is WEEE?

The Waste Electrical or Electronic Equipment (WEEE) Directive requires countries to maximise separate collection and environmentally friendly processing of these items. In the UK, distributors (including retailers) must provide a system which allows all customers buying new electrical equipment the opportunity to recycle their old items free of charge. Those establishing their own take-back scheme must as a minimum offer all customers buying new electrical equipment free take back of their old electricals on a like-for-like basis.

**Fax: 01895 857777**

**Email: [sales@tcdirect.co.uk](mailto:sales@tcdirect.co.uk) Web: [www.tcdirect.co.uk](http://www.tcdirect.co.uk)**



# Low Cost Temperature Measurement and Control

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