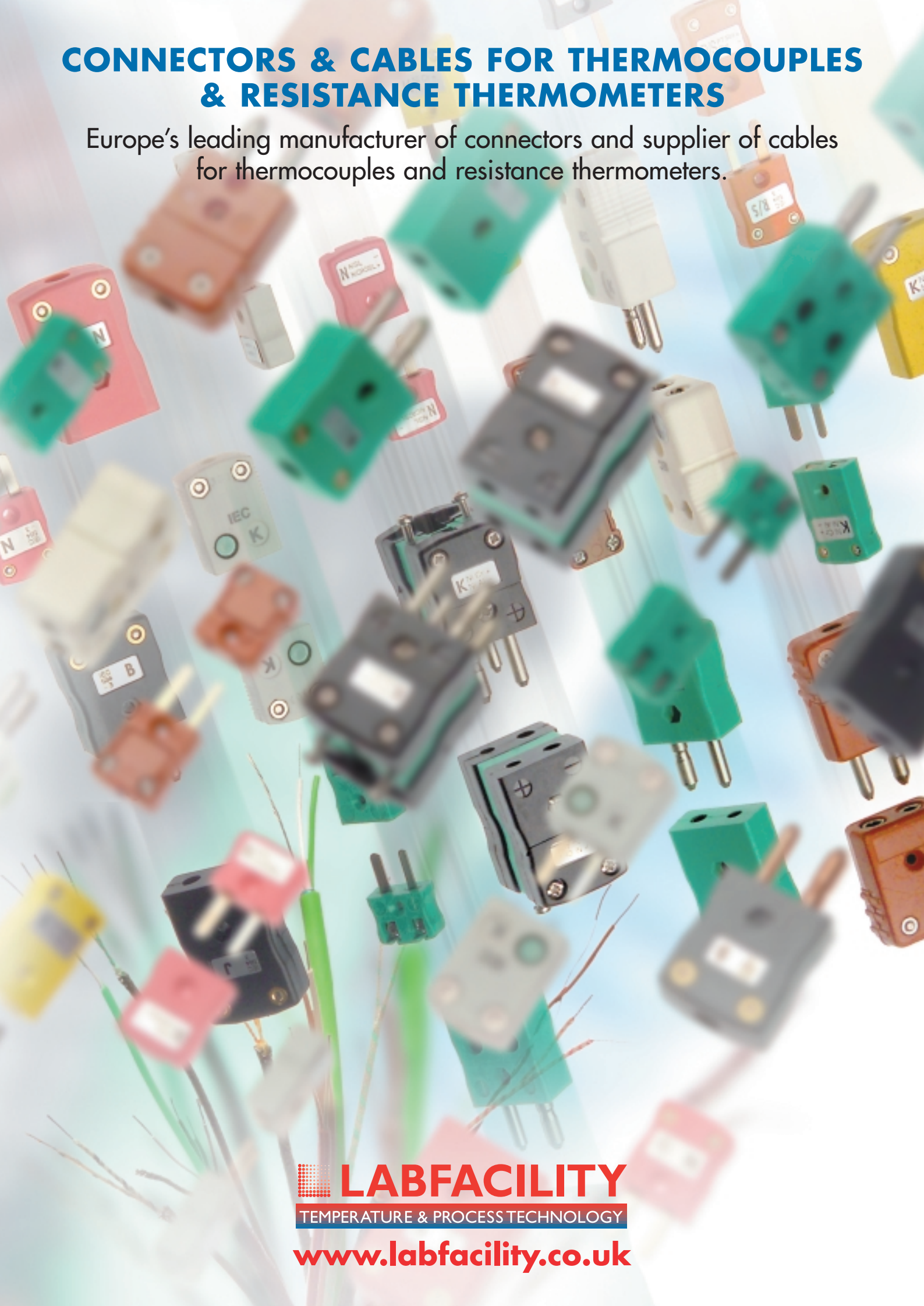
CONNECTORS & CABLES FOR THERMOCOUPLES & RESISTANCE THERMOMETERS

Europe's leading manufacturer of connectors and supplier of cables for thermocouples and resistance thermometers.



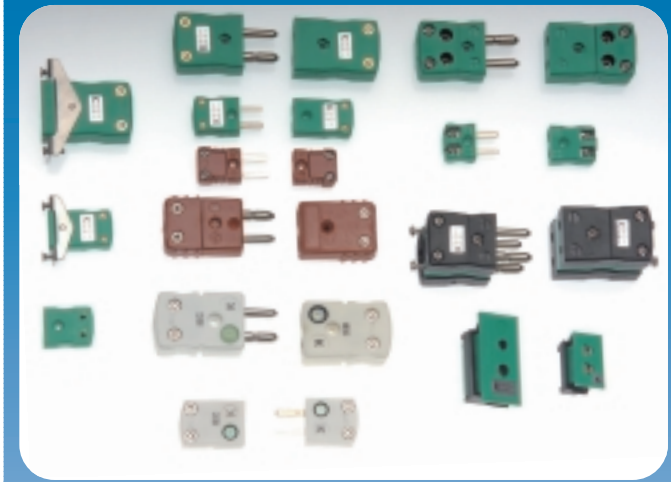
LABFACILITY

TEMPERATURE & PROCESS TECHNOLOGY

www.labfacility.co.uk

THERMOCOUPLE & RESISTANCE THERMOMETER CONNECTORS

THERMOCOUPLE & RESISTANCE THERMOMETER CONNECTORS

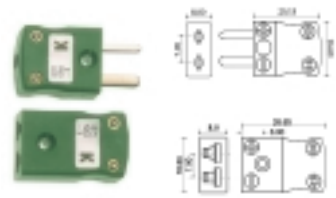


- Designed and manufactured under strict ISO EN 9000:2000 disciplines
- Full compliance to IEC & CENELEC specifications
- ANSI, DIN, JIS colour coding available on request
- Contacts made from thermocouple material or copper
- Calibration type J,K,T,N,E,R & S
- Uncompensated connectors B (grey) & Cu (white) for use additionally with resistance thermometers
- Terminal cable clamping plates
- Polarised pins guarantee correct polarity
- Compatibility with other makes of connectors
- 3 pin versions available
- 4 pin miniature suitable for thermocouples and resistance thermometers
- Wide range of accessories
- Custom labelling on request
- Unassembled line connectors for ease of termination available in packs of 100

CONTENTS

Miniature Plugs and Sockets.....2
Standard Plugs and Sockets 4
Connector Accessories 5
Cables 6
Thermocouple Wire Welder.....8
Fine Wire Thermocouples.....8
Thermocouple Cable Colour Codes 9
Cable Tidy, Spade Terminals & Solder ...9
Thermocouple Cable Accuracies 9
Other Labfacility Products 10

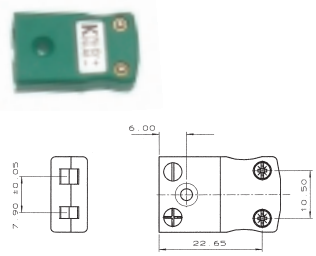
MINIATURE PLUGS & SOCKETS
Types J,K,T,N,E,R/S & Copper



TYPE	PLUG	SOCKET
J	IM-J-M	IM-J-LCF
K	IM-K-M	IM-K-LCF
T	IM-T-M	IM-T-LCF
N	IM-N-M	IM-N-LCF
E	IM-E-M	IM-E-LCF
R/S	IM-R-M	IM-R-LCF
Copper	FMTC-CU-M	FMTC-CU-LCF

- Range of miniature thermocouple connectors with flat pins having terminal and contact material to suit the thermocouple type
- Socket ideal for general purpose use
- All contacts are polarized to ensure correct connection
- Connectors will accept thermocouple cable up to 4mm diameter
- Cable clamps available for securing cable to plugs and sockets
- Uncompensated copper connectors also available
- Maximum continuous operating temperature 220°C
- Wide range of accessories available, see page 5

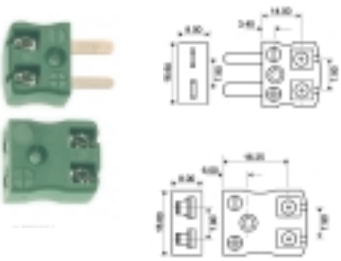
MINIATURE TWIN CONTACT SOCKET
Types J,K,T,N,E,R/S & Copper



TYPE	SOCKET
J	IM-J-F
K	IM-K-F
T	IM-T-F
N	IM-N-F
E	IM-E-F
R/S	IM-R-F
B	IM-B-F
Copper	FMTC-CU-F

- Range of miniature thermocouple sockets with "Twin Contacts" designed for applications requiring duty cycle use
- All contacts are polarized to ensure correct connection
- Connectors will accept thermocouple cable up to 4mm diameter
- Cable clamps available for securing cable to socket
- Uncompensated copper connectors also available
- Maximum continuous operating temperature 220°C
- Wide range of accessories available, see page 5

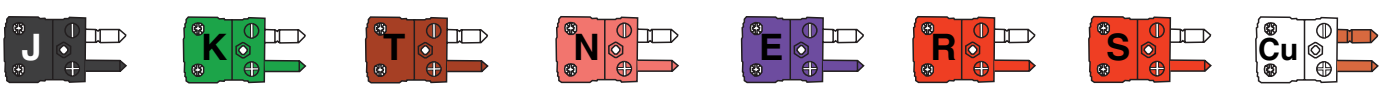
MINIATURE *QUICK WIRE* PLUGS & SOCKETS
Types J,K,T,N,E,R/S & Copper



TYPE	PLUG	SOCKET
J	IM-J-MQ	IM-J-FQ
K	IM-K-MQ	IM-K-FQ
T	IM-T-MQ	IM-T-FQ
N	IM-N-MQ	IM-N-FQ
E	IM-E-MQ	IM-E-FQ
R/S	IM-R-MQ	IM-R-FQ
Copper	FMTC-CU-MQ	FMTC-CU-FQ

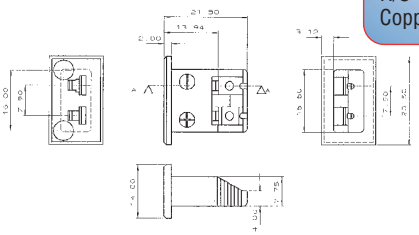
- These quick connect versions allow rapid termination
- Quick, easy "jab-in" connection, just push in wire and tighten screw
- Will accept wide range of wire sizes
- Maximum continuous operating temperature 220°C
- Compatible with the other miniature plugs and sockets

www.labfacility.co.uk



THERMOCOUPLE & RESISTANCE THERMOMETER CONNECTORS

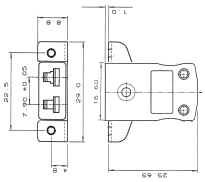
MINIATURE RECTANGLAR PANEL MOUNTING FASCIA SOCKETS Types J,K,T,N,E,R/S & Copper



TYPE	SOCKET
J	IM-J-FF
K	IM-K-FF
T	IM-T-FF
N	IM-N-FF
E	IM-E-FF
R/S	IM-R-FF
Copper	FMTC-CU-FF

- Clip mounting
- Quick, simple fixing to panel, see page 5
- Maximum continuous operating temperature 120°C

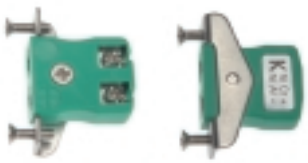
MINIATURE PANEL SOCKET WITH MOUNTING BRACKET Types J,K,T,N,E,R/S & Copper

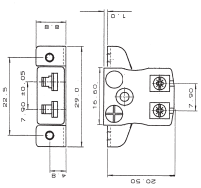


TYPE	SOCKET
J	IM-J-SSPF
K	IM-K-SSPF
T	IM-T-SSPF
N	IM-N-SSPF
E	IM-E-SSPF
R/S	IM-R-SSPF
Copper	FMTC-CU-SSPF

- Miniature socket fitted with stainless steel bracket
- Fully enclosed terminals with cable port seal
- Quick simple fixing to panel
- Maximum continuous operating temperature 220°C

MINIATURE *QUICK WIRE* PANEL SOCKET WITH MOUNTING BRACKET Types J,K,T,N,E,R/S & Copper

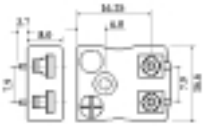




TYPE	
J	IM-J-SSPFQ
K	IM-K-SSPFQ
T	IM-T-SSPFQ
N	IM-N-SSPFQ
E	IM-E-SSPFQ
R/S	IM-R-SSPFQ
Copper	FMTC-CU-SSPFQ

- Miniature socket with quick wire facility – fitted with stainless steel mounting bracket
- Quick, easy "jab-in" connection, just push in wire and tighten screw
- These quick connect versions allow rapid termination
- Maximum continuous operating temperature 220°C

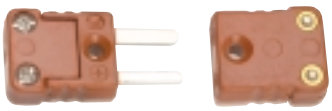
MINIATURE PCB MOUNTING SOCKET TYPES K,T & Copper



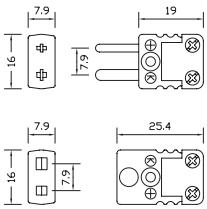
TYPE	SOCKET
K	IM-K-PCB
T	IM-T-PCB
COPPER	FMTC-CU-PCB

- Versatile, high quality, circuit board mounting miniature socket
- Specially designed for PCBs
- Solid pins for direct PCB mounting
- Provision for CJC sensor
- Compatible with flow soldering assembly
- Maximum continuous operating temperature 220°C

MINIATURE HIGH TEMPERATURE, PLASTIC PLUGS AND SOCKETS Types J & K



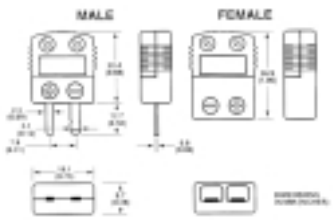
TYPE	PLUG	SOCKET
J	IM-J-M-HTP	IM-J-F-HTP
K	IM-K-M-HTP	IM-K-F-HTP



- All connectors have type identification on body
- High temperature polyester bodies for use up to 425°C
- All contacts are polarized to ensure correct connection
- For R,S & B compensating alloys limit the maximum usable temperature to 260°C

MINIATURE VERY HIGH TEMPERATURE, CERAMIC PLUGS & SOCKETS Types J,K & N

TYPE	PLUG	SOCKET
J	IM-J-M-HTC	IM-J-F-HTC
K	IM-K-M-HTC	IM-K-F-HTC
N	IM-N-M-HTC	IM-N-F-HTC

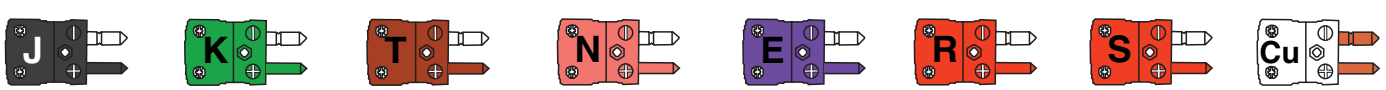


- Heavy duty ceramic body for use up to 560°C
- All connectors are coloured white with type identification on body
- For types R,S & B compensating alloys limit the maximum usable temperature to 260°C

CABLE TIDY THERMOCOUPLE WITH FITTED MINIATURE PLUG

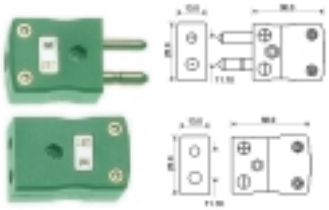
- A complete, precision fine wire, high sensitivity thermocouple

See page 9



THERMOCOUPLE & RESISTANCE THERMOMETER CONNECTORS

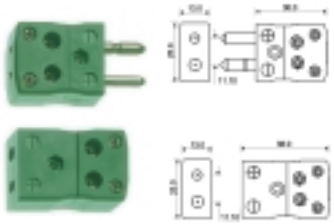
STANDARD PLUGS & SOCKETS
Types J,K,T,N,E,R/S & copper



TYPE	PLUG	SOCKET
J	IS-J-M	IS-J-F
K	IS-K-M	IS-K-F
T	IS-T-M	IS-T-F
N	IS-N-M	IS-N-F
E	IS-E-M	IS-E-F
R/S	IS-R-M	IS-R-F
COPPER	FSTC-CU-M	FSTC-CU-F

- A range of standard sized connectors with round pins to suit the thermocouple type being used
- Intended for use in more industrial applications
- Plugs fitted with solid thermocouple pins
- All contacts are polarized to ensure correct connection
- Cable clamps available for securing cable
- Maximum continuous operating temperature 220°C
- Wide range of accessories available, see page 5

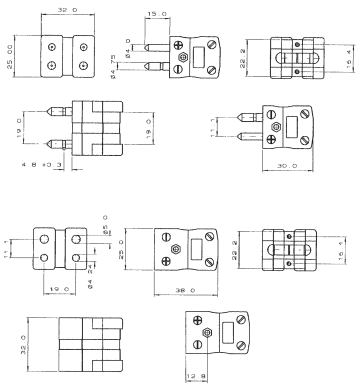
STANDARD *QUICK WIRE* PLUGS & SOCKETS
Types J,K,T,N,E,R/S & copper



TYPE	PLUG	SOCKET
J	IS-J-MQ	IS-J-FQ
K	IS-K-MQ	IS-K-FQ
T	IS-T-MQ	IS-T-FQ
N	IS-N-MQ	IS-N-FQ
E	IS-E-MQ	IS-E-FQ
R/S	IS-R-MQ	IS-R-FQ
COPPER	FSTC-CU-MQ	FSTC-CU-FQ

- Physically compatible with alternative standard, round pin connectors
- These quick connect versions allow rapid termination
- Quick easy "jab-in" connection, just push in wire and tighten screw
- Plugs fitted with solid thermocouple pins
- Suits wide range of wire sizes
- Maximum continuous operating temperature 220°C

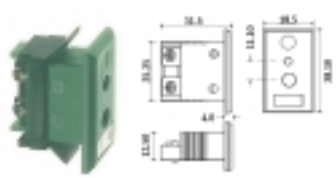
STANDARD DUPLEX PLUGS AND SOCKETS
Types J,K,T,N,E,R/S & copper



TYPE	PLUG	SOCKET
J	IS-J-MD	IS-J-FD
K	IS-K-MD	IS-K-FD
T	IS-T-MD	IS-T-FD
N	IS-N-MD	IS-N-FD
E	IS-E-MD	IS-E-FD
R/S	IS-R-MD	IS-R-FD
COPPER	FSTC-CU-MD	FSTC-CU-FD

- Duplex (Two channel) connectors using thermocouple material contacts and pins
- Bodies supplied coloured black with spacer in IEC thermocouple colour coding
- Plugs fitted with solid thermocouple pins
- Rugged glass filled polyester bodies
- All contacts are polarized to ensure correct connection
- Maximum continuous operating temperature 220°C
- Wide range of accessories available, see page 5

STANDARD RECTANGULAR PANEL MOUNTING FASCIA SOCKETS
Types J,K,T,N,E,R/S & copper

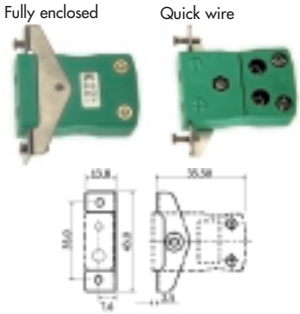


TYPE	SOCKET
J	IS-J-FF
K	IS-K-FF
T	IS-T-FF
N	IS-N-FF
E	IS-E-FF
R/S	IS-R-FF
COPPER	FSTC-CU-FF

- Quick, simple fixing to panel, see page 5
- Clip mounting
- Maximum continuous operating temperature 120°C

STANDARD PANEL OR *QUICK WIRE* SOCKET WITH MOUNTING BRACKET
Types J,K,T,N,E,R/S & copper

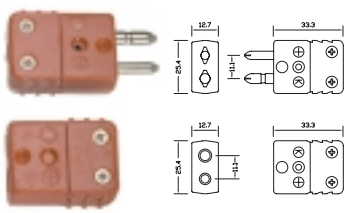
Fully enclosed Quick wire



TYPE	SOCKET	SOCKET (Quick Wire)
J	IS-J-SSPF	IS-J-SSPFQ
K	IS-K-SSPF	IS-K-SSPFQ
T	IS-T-SSPF	IS-T-SSPFQ
N	IS-N-SSPF	IS-N-SSPFQ
E	IS-E-SSPF	IS-E-SSPFQ
R/S	IS-R-SSPF	IS-R-SSPFQ
COPPER	FSTC-CU-SSPF	FSTC-CU-SSPFQ

- Standard sockets with fully enclosed terminals and cable port seal, fitted with stainless steel bracket
- Standard quick wire sockets fitted with stainless steel bracket
- Maximum continuous operating temperature 220°C

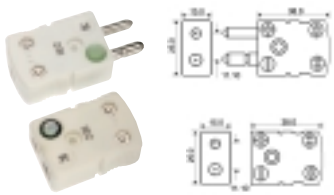
STANDARD HIGH TEMPERATURE PLASTIC PLUGS AND SOCKETS Types J & K



TYPE	PLUG	SOCKET
J	IS-J-M-HTP	IS-J-F-HTP
K	IS-K-M-HTP	IS-K-F-HTP

- High temperature polyester bodies for use up to 425°C
- All contacts are polarised to ensure correct connection
- For R,S & B compensating alloys limit the maximum usable temperature to 260°C
- Hollow pins in plug

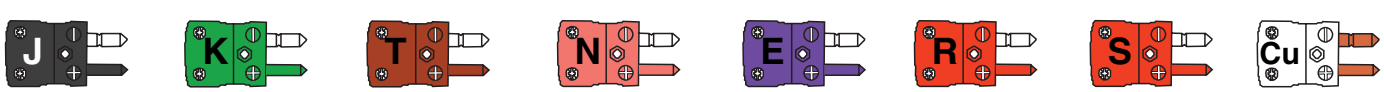
STANDARD VERY HIGH TEMPERATURE CERAMIC PLUGS & SOCKETS
Types J,K & N



TYPE	PLUG	SOCKET
J	IS-J-M-HTC	IS-J-F-HTC
K	IS-K-M-HTC	IS-K-F-HTC
N	IS-N-M-HTC	IS-N-F-HTC

- Heavy duty ceramic body for use up to 560°C
- All connectors supplied coloured white with coloured dot on body
- For types R,S & Cu compensating alloys limit the maximum usable temperature to 260°C

www.labfacility.co.uk



CONNECTOR ACCESSORIES

PLUG & SOCKET CRIMP ON BRASS PROBE SUPPORTS, MINIATURE & STANDARD

To suit 1.5mm & 3.0mm (Blank fittings available for other sizes)

SIZE	Miniature	Standard
0.5mm	CA-160	–
1.0mm	CA-161	CA-171
1.5mm	CA-162	CA-172
2.0mm	POA	CA-176
3.0mm	CA-163	CA-173
4.5mm	–	CA-175
6.0mm	–	CA-174
Blank	CA-033	CA-105

PLUG & SOCKET BRAZE ON BRASS PROBE SUPPORTS, STANDARD

SIZE	Standard
1.5mm	CA-062
3.0mm	CA-064

To suit 1.5mm & 3.0mm

PLUG & SOCKET COMPRESSION CABLE CLAMP, STANDARD

Standard
CA-075

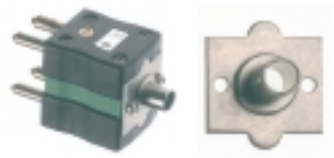
PLUG & SOCKET EXTERNAL CABLE CLAMPS MINIATURE AND STANDARD

Miniature	Standard
CA-087	CA-076

PLUG & SOCKET EXTERNAL CABLE CLAMP, DUPLEX

Standard
CA-077

PLUG & SOCKET BRAZE ON PROBE SUPPORT, DUPLEX



SIZE	Standard
3.0mm	CA-072
4.5mm	CA-073
6.0mm	CA-074

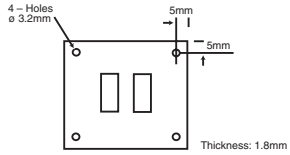
To suit 3.0mm, 4.5mm & 6.0mm

PLUG & SOCKET CABLE STRAIN RELIEF WASHER, MINIATURE & STANDARD

Miniature	Standard
CA-060	CA-061

Supplied in packs of 100
Material: Silicone rubber

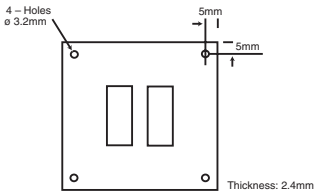
PANELS FOR MINIATURE FASCIA SOCKETS (Type FF)



WAY	PART NO
1	CA-001
2	CA-002
3	CA-003
4	CA-004
5	CA-005
6	CA-006
8	CA-007
10	CA-008
12	CA-009
16	CA-010
18	CA-011
20	CA-012
24	CA-013

Formula for dimension:
Length = (N x15) + 25mm (N= Number of ways per row)
Height = 45mm (single row), 75mm (Double row)
Up to 12 ways in a single row, 16 to 24 ways in two rows

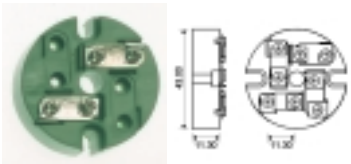
PANELS FOR STANDARD FASCIA SOCKETS (Type FF)



WAY	PART NO
1	CA-014
2	CA-015
3	CA-016
4	CA-017
5	CA-018
6	CA-019
8	CA-020
10	CA-021
12	CA-022
16	CA-023
18	CA-024
20	CA-025
24	CA-026

Formula for dimensions:
Length = (Nx19) + 31mm (N = number of ways per row)
Height = 66mm (single row), 111mm (Double row)
Up to 12 ways in a single row, 16 to 24 ways in two rows

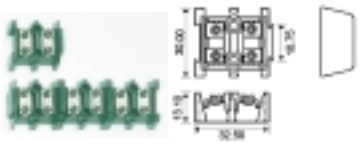
TERMINAL BLOCKS FOR IN-HEAD MOUNTING Types J,K,T & copper



TYPE	SIMPLEX	DUPLEX
J	HT-053	HT-056
K	HT-058	HT-059
T	HT-050	
COPPER	N/A	HT-054

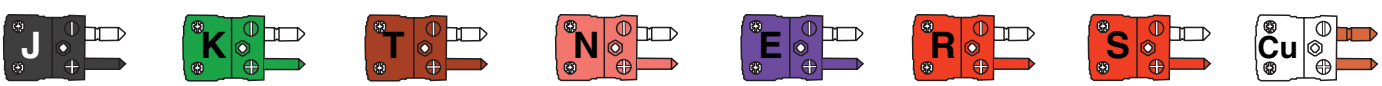
- Colour coded terminal blocks are for in-head mounting
- Connections made from thermocouple material
- Maximum continuous operating temperature 220°C
- Available as Simplex or Duplex

BARRIER TERMINAL BLOCKS Types J,K,T,R/S & copper

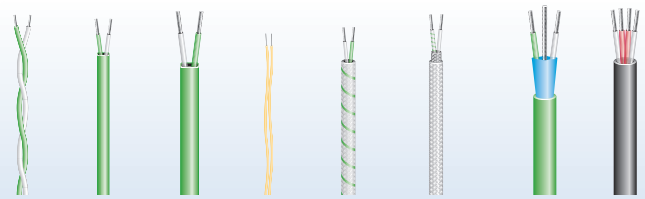


TYPES	
J	CA-151
K	CA-135
T	CA-136
R/S	CA-137
COPPER	CA-138

- Colour coded barrier terminal blocks
- Supplied in single interlocking pairs
- Connections in thermocouple material
- Maximum continuous operating temperature 220°C



THERMOCOUPLE & RESISTANCE THERMOMETER CABLES



- Types E,J,K,N,T,U and Vx
- Wide range of insulations & configurations
- Colour coded to IEC 584-3
- Alternative colours to BS1843, ANSI, DIN, JIS available
- Large stockholding

EXTENSION v COMPENSATING CABLE

Extension cable is designated X (e.g. KX for type K); compensating cable has a C designation (e.g. KC for Vx, type K) and consists of Vx and U types. Extension cable has a temperature vs e.m.f. relationship to an appropriate standard over the complete temperature range. It can, therefore, be used for producing a thermocouple junction and for joining thermocouples to their measuring instruments. It is limited in temperature only by the rating of its insulation.

Compensating cable is of different composition to extension cable but has a similar temperature v e.m.f. relationship over a limited range, and **should only be used for joining thermocouples to their measuring instruments**. It can only be used in limited ambient temperature, generally not higher than 80°C.

SELECTING YOUR CABLES

Guide to Cable Insulation and Coverings

Which insulation Material?	usable temperature range	Application Notes
PVC	-10°C to 105°C	Good general purpose insulation for "light" environments. Waterproof and very flexible.
PFA (extruded)	-75°C to 250°C	Resistant to oils, acids other adverse agents and fluids. Good mechanical strength and flexibility. PTFE better for steam/elevated pressure environments
PTFE (taped & wrapped)	-75°C to 250/300°C	Resistant to oils, acids other adverse agents and fluids. Good mechanical strength and flexibility.
Glassfibre (varnished)	-60°C to 350/400°C	Good temperature range but will not prevent ingress of fluids. Fairly flexible but does not provide good mechanical protection.
High temperature glass fibre	-60°C to 700°C	Will withstand temperature up to 700°C but will not prevent ingress of fluids. Fairly flexible, not good protection against physical disturbance.
Ceramic Fibre	0 to 1000°C	Will withstand high temperature, up to 1000°C. Will not protect against fluids or physical disturbance.
Glassfibre (varnished) stainless steel overbraid	-60°C to 350/400°C	Good resistance to physical disturbance and high temperature (up to 400°C). Will not prevent ingress of fluids.

Screened or unscreened?

With long cable runs, the cable may need to be screened and earthed at one end (at the instrument) to minimise noise pick-up (interference) on the measuring circuit. Alternative types of screened cable construction are available and these include the use of copper or mylar screening. Twisted pair configurations are offered and these can incorporate screening as required.

Single or multi-strand?

The choice is mainly determined by the application (e.g. termination considerations and internal diameter of associated sheath). Generally, single strand wires are used for hot junctions, and multi-strand or thicker single strand for extensions of the thermocouple. The greater the effective conductor diameter, the lower the value of thermocouple loop resistance, an important consideration with long cable runs.

All the above information is detailed in the Labfacility Temperature Handbook, available on request via our website.

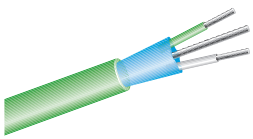
PVC INSULATED, FLAT PAIR
Types J,K,T,N,Vx,E & U

- Single pair of solid or stranded conductors
- PVC insulated
- Laid flat side by side & PVC sheathed
- Tolerance class 2
- Insulation Rating -10°C to 105°C
- IEC colour coded

T/C Type	Size (mm)	IEC PART No.
Type J	7/0.2	WJ-200
Type J	13/0.2	-
Type K	7/0.2	WK-150
Type K	13/0.2	WK-151
Type K	23/0.2	WK-152
Type T	7/0.2	WT-200
Type T	13/0.2	WT-201
Type T	23/0.2	-
Type N	7/0.2	WN-100
Type N	13/0.2	-
Type N	23/0.2	-
Type Vx	7/0.2	WV-100
Type Vx	13/0.2	WV-101
Type Vx	23/0.2	WV-103
Type U	7/0.2	WU-099
Type U	13/0.2	WU-100

Lengths of 10, 25, 50 & 100m

PVC INSULATED, MYLAR SCREENED
Types J,K,T,N & Vx

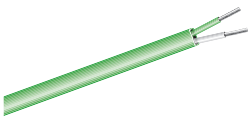


- Single pair of stranded conductors
- PVC insulated
- Screened with Mylar Tape and bare copper drain wire
- Overall PVC sheath
- Tolerance class 2
- Insulation Rating -10°C to 105°C
- IEC Colour coded

T/C Type	Size (mm)	IEC PART No.
Type J	7/0.2	WJ-241
Type K	7/0.2	WK-359
Type T	7/0.2	WT-202
Type N	7/0.2	WN-160
Type Vx	7/0.2	WV-102

Lengths of 10, 25, 50 & 100m

PFA/PTFE INSULATED, FLAT PAIR
Types J,K,T & N



- Single pair of solid or stranded conductors
- PFA or PTFE insulated
- Laid flat side by side
- PFA or PTFE Overall sheathed
- Tolerance Class 1
- Insulation Rating -75°C to 260°C
- IEC Colour coded

PTFE

T/C Type	Size (mm)	IEC PART No.
Type J	7/0.2	WJ-260
Type K	1/0.315	WK-300
Type K	7/0.2	WK-302
Type T	1/0.315	WT-328
Type T	1/0.508	WT-145
Type T	7/0.2	WT-330

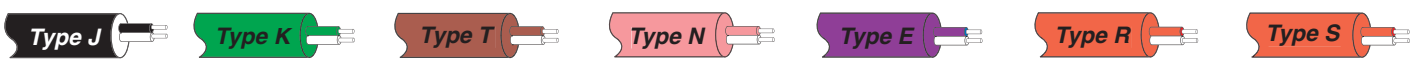
Lengths of 25 & 100m

PFA

T/C Type	Size (mm)	IEC PART No.
Type J	7/0.2	WJ-248
Type K	7/0.2	XS-751
Type T	7/0.2	WT-305
Type N	7/0.2	WN-121

Lengths of 25 & 100m

www.labfacility.co.uk



LABFACILITY
TEMPERATURE & PROCESS TECHNOLOGY

THERMOCOUPLE & RESISTANCE THERMOMETER CABLES

PFA/PTFE INSULATED, TWIN TWISTED PAIR
Types J,K,T & N

- Single pair of solid or stranded conductors
- PFA or PTFE Insulated
- Tolerance Class 1
- Insulation Rating -75°C to 260°C
- IEC Colour coded

PTFE

T/C Type	Size (mm)	IEC PART No.
Type J	1/0.2	WJ-244
Type J	1/0.508	WJ-246
Type J	7/0.2	WJ-243
Type K	1/0.2	WK-200
Type K	1/0.315	WK-201
Type K	1/0.508	WK-202
Type K	7/0.2	WK-303
Type K	10/0.12	XS-699
Type T	1/0.2	WT-300
Type T	1/0.315	WT-301
Type T	7/0.2	WT-303
Type N	1/0.2	WN-120
Type N	7/0.2	WN-140

Lengths of 25 & 100m

PFA

T/C Type	Size (mm)	IEC PART No.
Type K	1/0.2	WK-203
Type K	7/0.2	XS-752
Type K	1/0.3	WK-204
Type T	1/0.508	WT-302
Type T	1/0.3	WT-306
Type T	1/0.2	WT-304

Lengths of 25 & 100m

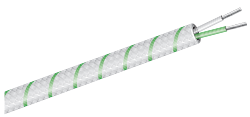
PTFE INSULATED, FINE GAUGE WIRE
Types J,K & T

- Single wire PTFE Insulated
- 15m spools of single strand
- Tolerance Class 2
- Insulation Rating -75°C to 260°C
- IEC & ANSI (C96) Colour coded

T/C Type	Size (mm)	ANSI PART No.
Type J Iron	1/0.08	WJ-100
Type J Con	1/0.08	WJ-101
Type K Ni Cr	1/0.08	WK-100
Type K Ni Al	1/0.08	WK-101
Type T Cu	1/0.08	WT-100
Type T CON	1/0.08	WT-101

Lengths of 15m

GLASSFIBRE INSULATED, FLAT PAIR
Types J,K,T,N & E



- Single pair of solid or stranded conductors
- Glassfibre Insulated
- Laid flat side by side & glassfibre braided overall
- Impregnated with silicone varnish
- Tolerance Class 2
- Insulation Rating -60°C to +350/400°C
- IEC Colour coded

T/C Type	Size (mm)	IEC PART No.
Type J	1/0.315	WJ-230
Type J	7/0.2	WJ-231
Type K	1/0.2	WK-363
Type K	1/0.315	WK-351
Type K	1/0.508	WK-352
Type K	7/0.2	WK-353
Type T	1/0.315	WT-356
Type T	7/0.2	WT-340
Type N	1/0.315	WN-130

Lengths of 10, 25 & 100m

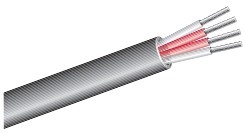
GLASSFIBRE INSULATED, FLAT PAIR, STAINLESS STEEL OVERBRAID
Types J,K,T & N

- Single & Duplex pair of stranded conductors
- Glassfibre insulated
- Laid flat side by side & glassfibre braided
- Impregnated with silicone varnish
- Stainless steel braided overall
- Tolerance Class 2
- Insulation Rating -60°C to +350/400°C
- IEC Colour coded

T/C Type	Size (mm)	IEC PART No.
Type J	7/0.2	WJ-240
Type J Duplex	7/0.2	WJ-242
Type K	7/0.2	WK-360
Type N	7/0.2	WN-150
Type T	7/0.2	WT-357

Lengths of 10, 25 & 100m

COPPER CABLES FOR USE WITH RESISTANCE THERMOMETER SENSORS



- Copper cables for use with platinum Resistance Thermometers & most process signals
- 1,2,3,4 & 6 cores available
- Screened and Unscreened
- Overall Stainless Steel Braided Available
- Core insulation colours red/white

Insulation & Construction	Overall Colour	Number of Cores	Number of Strands/Size mm	Part Number
PVC Screened	BLACK	4	7/ 0.20	WC-006
PTFE Single	RED	1	7/ 0.20	WC-046
PTFE Single	WHITE	1	7/ 0.20	WC-047
PTFE Twisted Pair	RED/WHITE	2	7/ 0.20	WC-044
PTFE Twisted	RED/WHITE	4	7/ 0.20	WC-043
PTFE Twisted	RED/WHITE	4	7/ 0.16	WC-045
PTFE Screened	BLACK	3	7/ 0.20	WC-004
PTFE Screened	BLACK	4	7/ 0.20	WC-014
PTFE Screened	BLACK	4	7/ 0.10	WC-042
PTFE Screened	BLACK	6	7/ 0.20	WC-029
F/G + SSOB	(BRAID)	2	7/ 0.20	WC-016
F/G + SSOB	(BRAID)	3	7/ 0.20	WC-023
F/G + SSOB	(BRAID)	4	7/ 0.20	WC-015
TEFZEL	BLACK	2	19/ 0.16	WC-012
Silicone Rubber	BROWN	2	7/ 0.20	WC-040
Silicone Rubber	BROWN	4	7/ 0.20	WC-041
PFA Screened	BLACK	4	7/0.20	WC-052
PFA Screened	BLACK	3	7/0.20	WC-053

POLYURETHANE EXTENDING, COILED
Types K & T

- Excellent coil retention
- Single pair of stranded conductors
- Polyurethane insulated
- Tolerance Class 2
- Insulation rating -25°C to +125°C
- IEC colour coded
- Other thermocouple types available

Available unterminated or with fitted miniature or standard plug &/or socket

Many other cables available – details on request

www.labfacility.co.uk

Type J | Type K | Type T | Type N | Type E | Type R | Type S

L60+ THERMOCOUPLE WIRE AND FINE WIRE WELDER

- Designed for producing thermocouple junctions
- Suitable for wires up to 1.1mm diameter
- Argon gas shield facility
- Can join wires to each other or metal surfaces
- Includes footswitch for convenient operation
- Comes with 1 electrode fitted & 1 spare
- 110/230Vac Power supply

Codes	
Welder	IL-070
Pkt 5 spare electrodes	IL-015

EXPOSED WELDED TIP THERMOCOUPLES

Also known as naked bead, fine-wire & exposed junction thermocouples

Welded tip, exposed junction, fast response thermocouples in types J,K &T

Specifications

Sensor Type	Thermocouple type J,K or T to IEC 60584. Exposed welded junction
Operating Temperature	PFA/PTFE insulated, 250°C. Fibreglass insulation, 350°C
Insulation	Glassfibre (silicone varnished) or PFA/PTFE
Termination	Bare wire tails

Specifications

Glassfibre Insulated	Type J	Type K	Type T
Wire diameter	1/0.315mm	1/0.315mm	1/0.315mm
Overall diameter	1.5mm	1.5mm	1.5mm
Temperature range	-50°C to +350°C	-50°C to +350°C	-50°C to +350°C
Positive leg	Iron	Nickel chromium	Copper
Negative leg	Constantan	Nickel aluminium	Constantan
PFA/PTFE Insulated			
Wire diameter		1/02mm	1/02mm
Overall diameter	-	1.3mm	1.3mm
Temperature range	-	-50°C to +250°C	-50°C to 250°C
Positive leg	-	Nickel Chromium	Copper
Negative leg	-	Nickel aluminium	Constantan

Welded tip thermocouple codes

Glassfibre Insulated	Code
Type J, 2m	Z3-J-2
Type K, 1m	Z3-K-1
Type K, 2m	Z3-K-2
Type T, 2m	Z3-T-2
PFA/PTFE Insulated	
Type K, 1m	Z2-K-1
Type K, 2m	Z2-K-2
Type T, 1m	Z2-T-1
Type T, 2m	Z2-T-2

EXPOSED, WELDED TIP THERMOCOUPLES WITH FITTED MINI-PLUGS PFA/PTFE

Types J,K & T, PFA/PTFE insulated thermocouple wire with welded junction and fitted miniature plug

Specifications

Sensor type	Thermocouple type J,K or T to IEC 60584. Exposed, Welded junction.
Tip temperature Rating	-75°C to 250°C (limited by PFA/PTFE insulation properties)
Wire type	Twin, twist pair, PFA/PTFE insulated over 1/0.2mm conductors
Termination	Colour coded miniature plug

Dimensions & Codes

Type	Code	Type	Code
Type J x 1m	Z2-J-1-MP	Type J x 2m	Z2-J-2-MP
Type K x 1m	Z2-K-1-MP	Type K x 2m	Z2-K-2-MP
Type T x 1m	Z2-T-1-MP	Type T x 2m	Z2-T-2-MP

EXPOSED, WELDED TIP THERMOCOUPLE WITH FITTED MINI-PLUGS, GLASSFIBRE

Types J & K, Glassfibre insulated thermocouple wire with welded junction and fitted miniature plug

Specifications

Sensor Type	Thermocouple type J or K to IEC60584. Exposed, welded junction.
Tip temperature Rating	-50°C to +350°C (limited by glassfibre insulation properties)
Wire type	Flat pair, silicone varnished glassfibre insulated over 1/0.315mm conductors
Termination	Colour coded miniature plug

Dimension & Codes

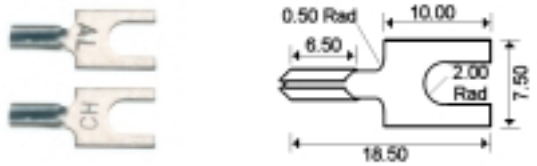
Type	Code	Type	Code
Type J x 1m	Z3-J-1-MP	Type J x 2m	Z3-J-2-MP
Type K x 1m	Z3-K-1-MP	Type K x 2m	Z3-K-2-MP

THERMOCOUPLE & RESISTANCE THERMOMETER CABLE PRODUCTS

CABLE TIDY THERMOCOUPLE WITH FITTED MINIATURE PLUG

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

THERMOCOUPLE SPADE TERMINALS Types J,K,T,R/S & copper



TYPE	POSITIVE	NEGATIVE
J	TST-IR	TST-CO
K	TST-CH	TST-AL
T	TST-CP	TST-CO
R/S	TST-II	TST-II
COPPER	TST-CP	TST-CP

These crimp-on spade terminals use compatible thermocouple material, with the identifying code stamped on, and are available in nickel-chromium, nickel-aluminium, iron, constantan, copper and copper-nickel. They will accommodate wire sizes between 0.5 and 1mm diameter (25-19 SWG, area 0.2 to 0.65mm2), and will fit the terminal barrier strips.

Note: Copper and copper Nickel (Alloy 11) are used as compensating materials for Platinum, Platinum/Rhodium, types R & S.

SOLDER FOR TYPE K THERMOCOUPLE WIRE

- Alloy 450 Tin / Lead Silver
- 0.5kg / 90mtrs

Availability subject to future legislation

Code
WX-004

LABFACILITY TEMPERATURE HANDBOOK

The Labfacility Temperature Handbook provides comprehensive data on thermocouple wire and cables, and thermocouple and PRT sensors. Temperature measurement and control techniques are also explained. **Can be requested via our website www.labfacility.co.uk**

Code
IL-001

COLOUR CODES

THERMOCOUPLE CONNECTORS, EXTENSION AND COMPENSATING WIRES AND CABLES

TYPE	CONDUCTORS +/-	INSULATION COLOUR CODES Extension & Compensating Leads — FORMER STANDARD: BRITISH BS1843: 1952	AMERICAN ANSI/MC 96.1	GERMAN DIN 43713 / 43714	IEC584-3: 1989 BS4937. Part 30. 1993	CABLE CODE
E	NICKEL CHROMIUM/CONSTANTAN (Nickel Chromium/Copper Nickel, Chromel/Constantan, T1/Advance, NiCr/Constantan)					EX
J	IRON*/CONSTANTAN (Iron/Copper Nickel, Fe/Konst Iron/Advance, Fe/Constantan I/C)					JX
K	NICKEL CHROMIUM/NICKEL ALUMINIUM* (NC/NA, Chromel/Alumel, C/A, T1/T2, NiCr/Ni, NiCr/NiAL)					KX
N	NICROSIL/NISIL					NX NC
T	COPPER/CONSTANTAN (Copper/Copper Nickel, Cu/Con, Copper/Advance)					TX
Vx	COPPER/CONSTANTAN (LOW NICKEL) (Cu/Constantan) Compensating for K (Cu/Constantan)					KCB
U	COPPER/COPPER NICKEL Compensating for Platinum 10% or 13% Rhodium/Platinum (Codes S & R respectively) (Copper/Cupronic Cu/CuNi, Copper/No. 11 Alloy)					RCA SCA
	* Magnetic, ( ) Alternative & Trade Name		FOR THERMOCOUPLE CONNECTORS body colours are similar to outer sheath colours		FOR THERMOCOUPLE CONNECTORS body colours are similar to outer sheath colours	

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

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

K – X – 1 = K EXTENSION CLASS 1
K – CA – 2 = K COMPENSATION CLASS 2

THERMOCOUPLE WIRE TOLERANCES

Type	Tolerance Class 1	Tolerance Class 2	Cable Temperature range	Measuring junction temperature
JX	±85µV(±1.5°C)	±140µV(±2.5°C)	-25°C to +200°C	500°C
TX	±30µV(±0.5°C)	± 60µV(±1.0°C)	-25°C to +100°C	300°C
EX	±120µV(±1.5°C)	±200µV(±2.5°C)	-25°C to +200°C	500°C
KX	±60µV(±1.5°C)	±100µV(±2.5°C)	-25°C to +200°C	900°C
NX	±60µV(±1.5°C)	±100µV(±2.5°C)	-25°C to +200°C	900°C
KCA	-	±100µV(±2.5°C)	0°C to +150°C	900°C
KCB	-	±100µV(±2.5°C)	0°C to +100°C	900°C
NC	-	±100µV(±2.5°C)	0°C to +150°C	900°C
RCA	-	± 30µV(±2.5°C)	0°C to +100°C	1000°C
RCB	-	±60µV(±5.0°C)	0°C to +200°C	1000°C
SCA	-	±30µV(±2.5°C)	0°C to +100°C	1000°C
SCB	-	±60µV(±5.0°C)	0°C to +200°C	1000°C

PRODUCT FOCUS – LABFACILITY RANGE AT A GLANCE

EUROPE'S LARGEST RANGE OF TEMPERATURE SENSORS

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

THE BEST IN THERMOCOUPLE CONNECTORS

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

All in this brochure

WIDE RANGE OF HIGH QUALITY THERMOCOUPLE & PRT CABLES

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

All in this brochure

MARKET LEADING TEMPERATURE & PROCESS INSTRUMENTATION

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

EQUIPMENT & COMPONENT PARTS FOR SENSOR MANUFACTURERS

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

VERSATILE DRY BLOCK CALIBRATORS

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

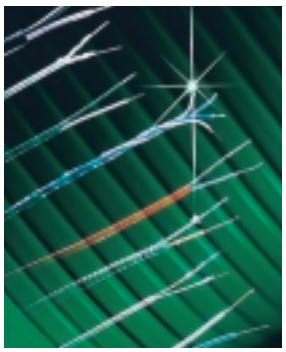
UKAS TRACEABLE CALIBRATIONS

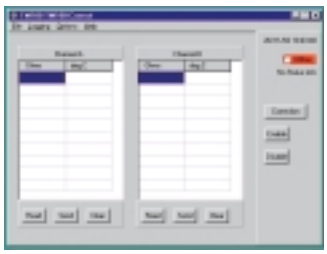
- Certified probe calibrations between –10°C and 1200°C

And our indispensable Temperature handbook









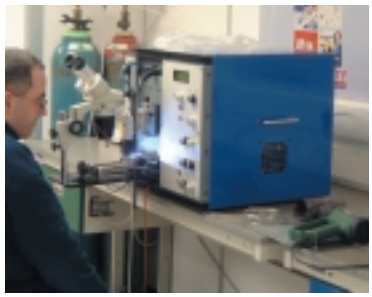
LABFACILITY – LEADERS IN TEMPERATURE MEASUREMENT

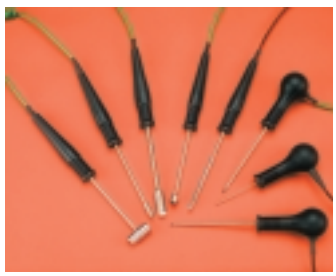
Labfacility market leading products represent **more than thirty years of design and applications experience** in industrial and laboratory, temperature and process measurement. Labfacility products and services are specified by leading UK and European distributors and manufacturers and are also exported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

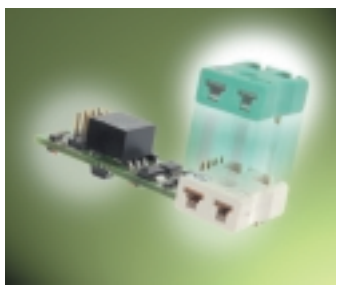
Quality and Service are key elements in the continued growth of Labfacility; technical support is always freely available from our experienced technical sales teams and the company has ISO9001 accreditation.

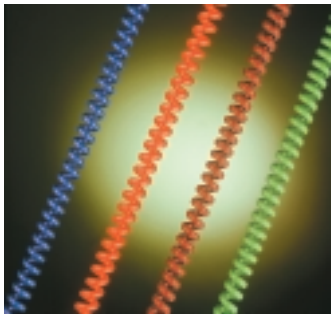
Not only do we manufacture temperature sensors and fittings, thermocouple connectors, precision electronic thermometers and thermocouple welders, we also supply thermocouple cables, temperature transmitters, hand held digital thermometers and test instruments, dry block calibrators, loggers, scanners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







LABFACILITY – MANUFACTURER AND STOCKIST

Applications and Industries include:

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

Product availability & specifications may be subject to change. E&OE.

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

www.labfacility.co.uk

LABFACILITY

TEMPERATURE & PROCESS TECHNOLOGY

www.labfacility.co.uk

INSTITUTE OF MEASUREMENT & CONTROL
COMPANION COMPANY

FARNELL in one

RS

NQA ISO 9001 REGISTERED COMPANY

UKAS QUALITY MANAGEMENT 015

Certificate No. 4746

SOUTHERN UK & EXPORT DIVISION: Units 5,6 & 7, Block K, Southern Cross Industrial Estate, Shripney Road, Bognor Regis, West Sussex PO22 9SD

Export Sales: tel: +44(0)1243 871287 fax: +44(0)1243 871281 email: exportsales@labfacility.co.uk
Southern UK Sales: tel: +44(0)1243 871280 fax: +44(0)1243 871281 email: southernsales@labfacility.co.uk

NORTHERN UK DIVISION: Units 7/8 Abbey Way, North Anston Trading Estate, Dinnington, Sheffield S25 4JL

Northern UK Sales: tel: +44(0)1909 569446 fax: +44(0)1909 550632 email: northernsales@labfacility.co.uk