

## Datasheet

# IEC Miniature Thermocouple Connector In-Line Plugs

Types K, J, T, E, N, R/S, B & Copper  
(IEC Colour Code)

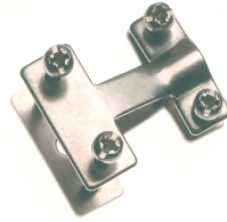


- Range of miniature thermocouple connectors with flat pins to suit thermocouple type
- Ideal for general purpose use
- All contacts are polarised to ensure correct connection
- Connectors will accept thermocouple cable up to 4mm in diameter
- Cable clamp available for securing cable to plugs
- Available in Thermocouple Types K, J, T, E, N, R/S, B & Copper
- For Types K, J, T, E & N contacts are made from true Thermocouple alloys
- R/S type has compensating copper/copper nickel alloy contacts (for R or S Type Thermocouples)
- B type has compensating copper/copper contacts (for B Type Thermocouples)
- Colour coded in accordance with IEC specification
- Maximum continuous operating temperature 220°C

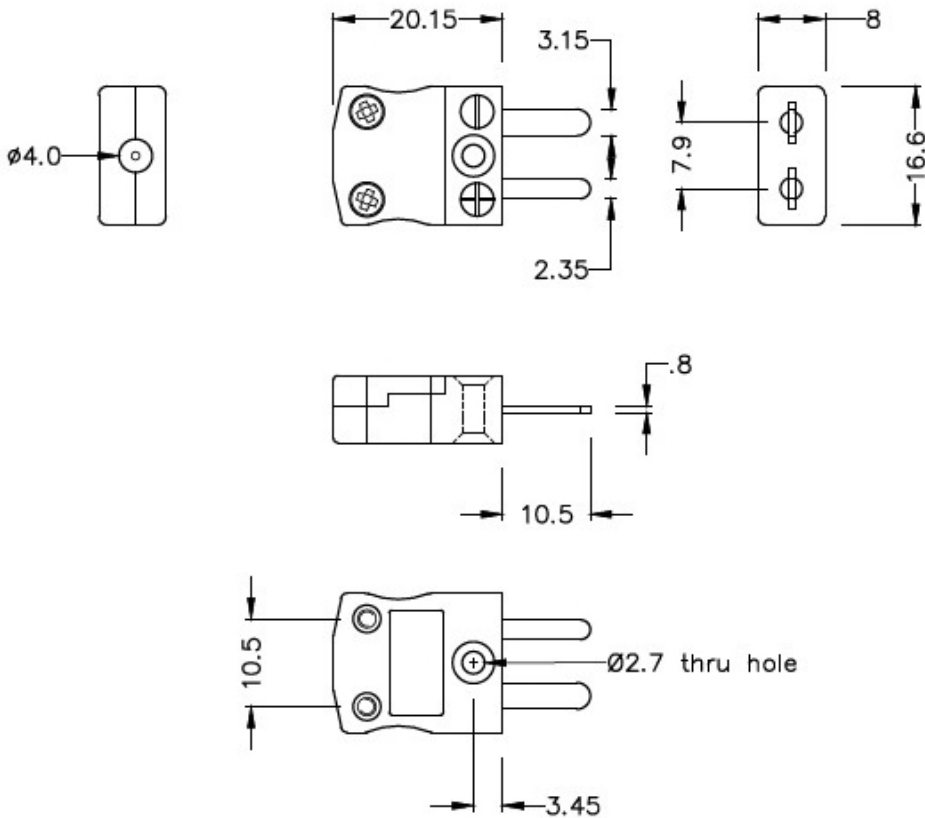
T/C Type	Colour Code (IEC)	+Positive Contact (alloy type)	-Negative Contact (alloy type)	Allied Code	RS order Code
K	Green	+Nickel Chromium	-Nickel Alloy	70644391	<b>455-9764</b>
J	Black	+Iron	-Copper Nickel	70644387	<b>455-9714</b>
T	Brown	+Copper	-Copper Nickel	70644402	<b>455-9922</b>
E	Violet	+Nickel Chromium	-Copper Nickel	70652488	<b>774-7185</b>
N	Pink	+Nickel/Chro/Silicon	-Nickel Silicon	70644396	<b>455-9843</b>
R/S	Orange	+Copper	-Copper Alloy	70644399	<b>455-9887</b>
B	Grey	+Copper	-Copper	70652487	<b>774-7181</b>
Copper	White	+Copper	-Copper	70644384	<b>455-9679</b>

## Accessories

- Cable clamp for miniature connectors –  
Allied code 70641746  
RS order number **236-4104**



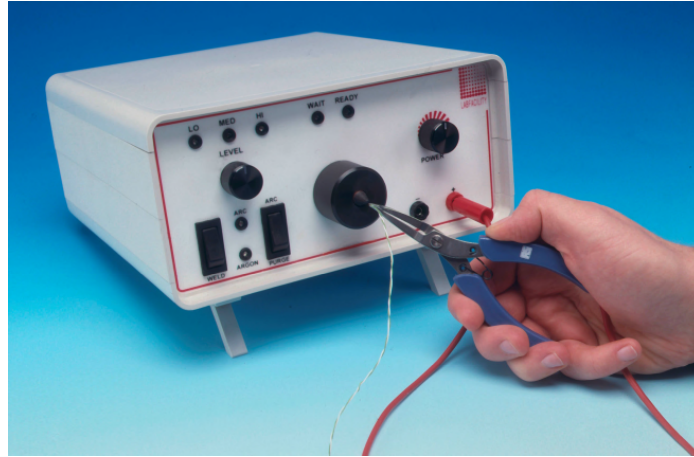
- Rubber grommet for miniature connectors –  
Allied code 70646835  
RS order number **666-7365** (25 per pack)



**Miniature in-line Plug**  
(dimensions in mm)

## Making your own Thermocouples?

# L60 Thermocouple & Fine Wire Welder



The Thermocouple Welder is a compact, simple-to-use instrument designed for thermocouple and fine wire welding

It is primarily designed for use by sensor manufacturers to produce commercial grade thermocouple junctions; it is ideal for producing large numbers of exposed junction thermocouples for test and development laboratories. The L60 Thermocouple Welder is ideally suited to transducer and RTD extension lead attachment

Use of the Thermocouple Welder does not require special skills and most operatives will be capable of producing quality work with little practice. The instrument is supplied with a full range of user accessories including a footswitch

Suitable for use with wires of up to 1.1mm diameter an argon gas shield facility is included but a satisfactory thermocouple junction is produced without the need for argon. The output energy of the L60 Thermocouple Welder can be varied up to 60 Joules

- Simple to use Thermocouple Welder
- Designed for the production of commercial grade thermocouple junctions (See below for range of thermocouple cables)
- Also suitable for other fine wire work
- Front panel or footswitch operation
- Argon gas shield facility

## **Supplied complete with the following accessories:**

- Wire Holding Pliers & Lead
- Safety Glasses
- Magnifying Eyeglass
- Carbon Electrodes
- Spare 2A Fuse
- Argon Hose
- Mains Lead
- Footswitch for greater ease of use



Carbon Electrode

## **ORDERING INFORMATION**

**MODEL**  
FINE WIRE WELDER  
Spare Carbon Electrodes (x5) for 1.1mm 250V Fine Wire Welder

Allied Code	RS ORDER NUMBER
70825788	363-0351
70656473	814-0184

## SPECIFICATIONS

### General

Energy Output 0-60 Joules  
Welding Capacity Wires up to 1.1mm diameter  
Duty Cycle Minimum 5-10 welds/min

### MECHANICAL

Physical Dimensions 220mm Wide x 120mm High x 250mm Depth  
Weight 4kg

### ELECTRICAL

Power Supply 110-120 Vac or 220-250 Vac, 50-60Hz  
Power Consumption Max 170VA dropping to 20VA during charging

### MAINTENANCE

Apart from keeping the electrode in good order, no other maintenance is required

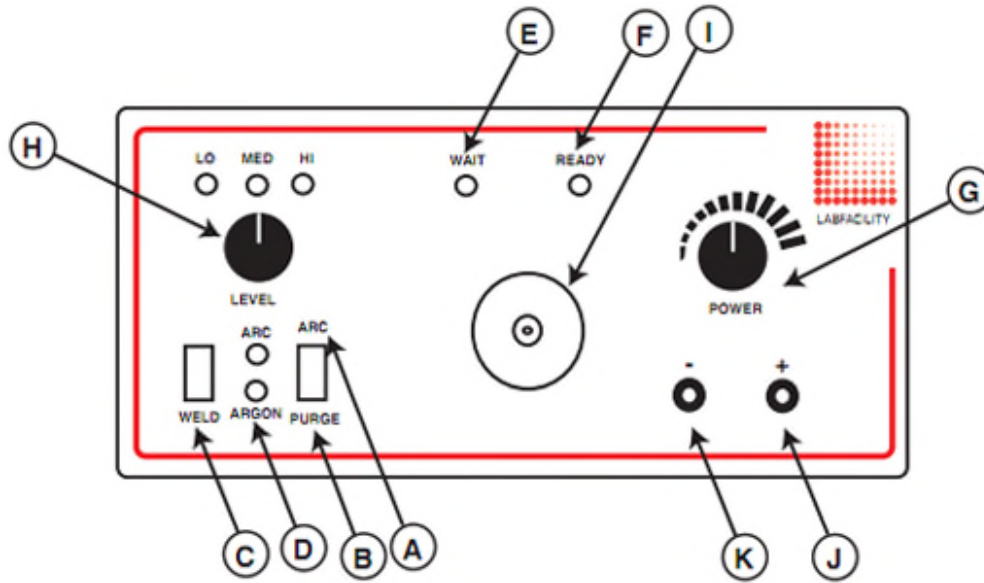
(Front View)



(Rear View)



**Thermocouple Welder Controls**



- A Arc Argon gas and weld current controlled by the "Weld" switch. LED indication
- B Purge Allows the gas line and electrode shield to be purged of air prior to a new welding period
- C Weld Switch Initiates a welding operation (in "arc" mode also opens the Argon valve)
- D Argon LED Indicates when the Argon control valve is open and gas is flowing
- E Wait LED Glows when weld charge is building
- F Ready LED "Ready to Weld" indication
- G Power Rotary control of the capacitor charge voltage
- H Level Selector Selects the total capacitance available giving the following values with LED indication  
  - "LO" = 0 to 6 Joules
  - "MED" = 0 to 28 Joules
  - "HI" = 0 to 64 Joules

- I Electrode Holder Holds the replaceable carbon electrode which is accessible by removing the outer Argon Shield
- J Red Socket Output socket for using the pliers supplied
- K Black Socket Output socket, this provides an additional earth

**IEC PTFE Insulated Twin Twisted Pair Thermocouple Cable**

Available in Thermocouple Types K, J T & N



Type 'K'



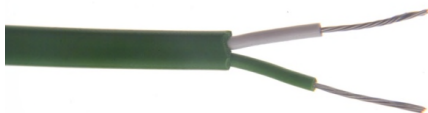
Type 'T'

- PTFE twin twisted pair for extending or making simple thermocouples
- Single pair of PTFE insulated conductors twisted together
- Good mechanical strength and flexibility, resistant to oils, acids and other adverse fluids
- Suitable for steam & pressure applications, autoclaves, sterilizers etc.
- 25 & 50 metre reel lengths
- Tolerance Class 1 for optimum accuracy
- Insulation rating -75°C to 260°C
- Colour coded to IEC-584-3

T/C Type	Conductors	Cores	Reel Length	Allied code	RS order code
J	1/0.2mm	+Black/-White	25 metres	70657194	<b>827-5980</b>
J	1/0.2mm	+Black/-White	50 metres	70657195	<b>827-5984</b>
J	1/0.315mm	+Black/-White	25 metres	70657198	<b>827-5993</b>
J	1/0.315mm	+Black/-White	50 metres	70657199	<b>827-5996</b>
K	1/0.315mm	+Green/-White	25 metres	70657200	<b>827-6000</b>
K	1/0.315mm	+Green/-White	50 metres	70657205	<b>827-6019</b>
T	1/0.315mm	+Brown/-White	25 metres	70657208	<b>827-6028</b>
T	1/0.315mm	+Brown/-White	50 metres	70657206	<b>827-6022</b>
J	1/0.508mm	+Black/-White	25 metres	70657197	<b>827-5990</b>
J	1/0.508mm	+Black/-White	50 metres	70657201	<b>827-6003</b>
K	1/0.508mm	+Green/-White	25 metres	70657203	<b>827-6012</b>
K	1/0.508mm	+Green/-White	50 metres	70657204	<b>827-6016</b>
J	7/0.2mm	+Black/-White	25 metres	70657202	<b>827-6006</b>
K	7/0.2mm	+Green/-White	25 metres	70657207	<b>827-6025</b>
T	7/0.2mm	+Brown/-White	25 metres	70657209	<b>827-6031</b>
N	7/0.2mm	+Pink/-White	25 metres	70657210	<b>827-6034</b>

## IEC PVC Insulated Flat Pair Thermocouple Extension & Compensating Cable

PVC Insulated Flat Pair (to IEC-584)



- PVC insulated flat pair construction
- Conductors laid flat PVC insulated with overall PVC sheath
- All round general purpose cable, both waterproof and very flexible
- Thermocouple extension types for K, J, T & N

- Compensating types VX (KCB) & U (RCA) for types K & R/S Thermocouples respectively
- Stranded conductors available, either 7/0.2mm or 13/0.2mm
- Available in 10, 25, 100 & 200 metre lengths
- Tolerance Class 2
- Insulation rating -10°C to 105°C
- Colour code (cores & jacket) to IEC-584-3

	<b>Conductors</b>	<b>Cores</b>	<b>Jacket</b>	<b>Reel Length</b>	<b>Allied Code</b>	<b>RS order code</b>
<b>Extension:</b>						
KX	7/0.2mm	+Green/-White	Green	10 metres	70657084	<b>827-5615</b>
KX	7/0.2mm	+Green/-White	Green	25 metres	70641729	<b>236-3820</b>
KX	7/0.2mm	+Green/-White	Green	50 metres	70657085	<b>827-5619</b>
KX	7/0.2mm	+Green/-White	Green	100 metres	70646156	<b>611-7889</b>
KX	7/0.2mm	+Green/-White	Green	200 metres	70657088	<b>827-5628</b>
JX	7/0.2mm	+Black/-White	Black	10 metres	70641640	<b>219-4753</b>
JX	7/0.2mm	+Black/-White	Black	25 metres	70657078	<b>827-5592</b>
JX	7/0.2mm	+Black/-White	Black	50 metres	70657079	<b>827-5596</b>
JX	7/0.2mm	+Black/-White	Black	100 metres	70641737	<b>236-3915</b>
JX	7/0.2mm	+Black/-White	Black	200 metres	70657081	<b>827-5606</b>
TX	7/0.2mm	+Brown/-White	Brown	10 metres	70641637	<b>219-4703</b>
TX	7/0.2mm	+Brown/-White	Brown	25 metres	70641734	<b>236-3870</b>
TX	7/0.2mm	+Brown/-White	Brown	50 metres	70657095	<b>827-5653</b>
TX	7/0.2mm	+Brown/-White	Brown	100 metres	70651749	<b>762-1146</b>
TX	7/0.2mm	+Brown/-White	Brown	200 metres	70657098	<b>827-5662</b>
NX	7/0.2mm	+Pink/-White	Pink	10 metres	70641635	<b>219-4668</b>
NX	7/0.2mm	+Pink/-White	Pink	25 metres	70657091	<b>827-5637</b>
NX	7/0.2mm	+Pink/-White	Pink	50 metres	70657089	<b>827-5631</b>
NX	7/0.2mm	+Pink/-White	Pink	100 metres	70657092	<b>827-5640</b>
	<b>Conductors</b>	<b>Cores</b>	<b>Jacket</b>	<b>Reel Length</b>	<b>Allied Code</b>	<b>RS order code</b>
<b>Compensating:</b>						
VX (KCB)	7/0.2mm	+Green/-White	Green	10 metres	70657082	<b>827-5609</b>
VX (KCB)	7/0.2mm	+Green/-White	Green	25 metres	70641629	<b>219-4551</b>
VX (KCB)	7/0.2mm	+Green/-White	Green	50 metres	70657080	<b>827-5603</b>
VX (KCB)	7/0.2mm	+Green/-White	Green	100 metres	70641630	<b>219-4573</b>
VX (KCB)	7/0.2mm	+Green/-White	Green	200 metres	70657083	<b>827-5612</b>
VX (KCB)	13/0.2mm	+Green/-White	Green	10 metres	70657086	<b>827-5621</b>
VX (KCB)	13/0.2mm	+Green/-White	Green	25 metres	70657087	<b>827-5625</b>
VX (KCB)	13/0.2mm	+Green/-White	Green	50 metres	70657090	<b>827-5634</b>
VX (KCB)	13/0.2mm	+Green/-White	Green	100 metres	70651750	<b>762-1152</b>
U (RCA)	7/0.2mm	+Orange/-White	Orange	10 metres	70657096	<b>827-5656</b>
U (RCA)	7/0.2mm	+Orange/-White	Orange	25 metres	70646158	<b>611-7902</b>
U (RCA)	7/0.2mm	+Orange/-White	Orange	50 metres	70657097	<b>827-5659</b>
U (RCA)	13/0.2mm	+Orange/-White	Orange	10 metres	70641641	<b>219-4769</b>
U (RCA)	13/0.2mm	+Orange/-White	Orange	25 metres	70657093	<b>827-5643</b>
U (RCA)	13/0.2mm	+Orange/-White	Orange	50 metres	70657094	<b>827-5647</b>

RS139/0816

# IEC PTFE Single Shot Thermocouple Cable

Type K, 10 metre reel

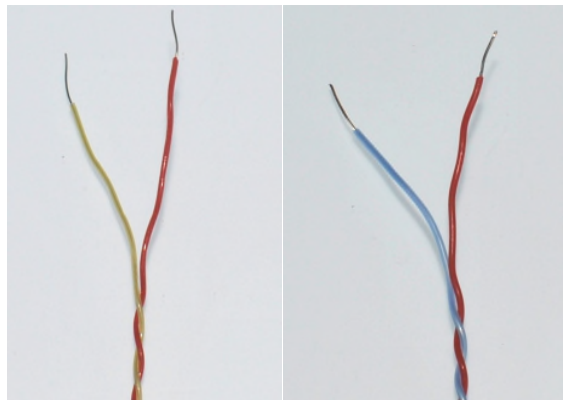


- Thermocouple type K
- 10 metre spool length
- 7/0.2mm diameter conductor
- Operating range: -75°C to +250°C
- Teflon insulated single shot construction
- Resistant to chemicals, oils and fluids
- Suitable for aerospace applications and is widely used in autoclaves
- Colour coded to IEC-584-3

Type	Outer	Length	Allied code	RS Code
K	Green/White	10 metres	70657216	<b>827-6053</b>

# ANSI PFA Insulated Twin Twisted Pair Thermocouple Cable

Available in Thermocouple Types K & T (ANSI MC96.1)



Type KX

Type TX

- PFA Teflon® twin twisted pair for extending or making simple thermocouples
- Single pair of PFA insulated conductors twisted together
- Good mechanical strength and flexibility, resistant to oils, acids and other adverse fluids, gasses, steam etc.
- Thermocouple types K & T with 1/0.2mm OR 1/0.3 conductors. 7/0.2mm option available for type K
- 25, 50 & 100 metre reel lengths

RS139/0816

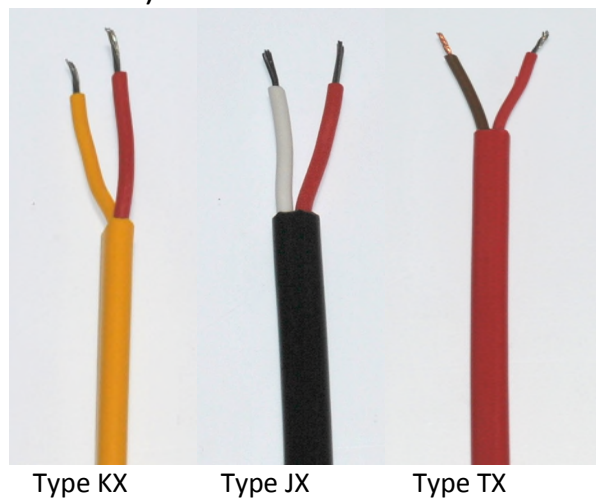


- Tolerance Class 1 for optimum accuracy
- Insulation rating -75°C to 260°C
- Colour coded to ANSI MC96.1

T/C Type	Conductors	Cores	Reel Length	Allied code	RS order code
KX	1/0.2mm	+Yellow/-Red	25 metres	70656106	<b>814-0030</b>
KX	1/0.2mm	+Yellow/-Red	50 metres	70656111	<b>814-0049</b>
KX	1/0.2mm	+Yellow/-Red	100 metres	70656109	<b>814-0042</b>
KX	7/0.2mm	+Yellow/-Red	25 metres	70656110	<b>814-0046</b>
KX	7/0.2mm	+Yellow/-Red	50 metres	70656113	<b>814-0055</b>
KX	7/0.2mm	+Yellow/-Red	100 metres	70656114	<b>814-0058</b>
KX	1/0.3mm	+Yellow/-Red	25 metres	70656104	<b>814-0024</b>
KX	1/0.3mm	+Yellow/-Red	50 metres	70656107	<b>814-0033</b>
KX	1/0.3mm	+Yellow/-Red	100 metres	70656108	<b>814-0036</b>
TX	1/0.3mm	+Blue/-Red	25 metres	70656121	<b>814-0080</b>
TX	1/0.3mm	+Blue/-Red	50 metres	70656126	<b>814-0099</b>
TX	1/0.3mm	+Blue/-Red	100 metres	70656124	<b>814-0092</b>
TX	1/0.2mm	+Blue/-Red	25 metres	70656125	<b>814-0096</b>
TX	1/0.2mm	+Blue/-Red	50 metres	70656128	<b>814-0106</b>
TX	1/0.2mm	+Blue/-Red	100 metres	70656129	<b>814-0109</b>

## ANSI PVC Thermocouple Extension & Compensating Cable

PVC Insulated Flat Pair (ANSI MC96.1)



- PVC insulated flat pair construction
- Conductors laid flat PVC insulated with overall PVC sheath
- All round general purpose cable, both waterproof and very flexible
- Thermocouple extension types for K, J, & T

- Compensating types VX (KCB) for types K Thermocouples
- Stranded conductors available, 7/0.2mm
- Available in 25, 100 & 200 metre lengths
- Tolerance Class 2
- Insulation rating -10°C to 105°C
- Colour code (cores & jacket) to ANSI MC96.1

T/C Type	Conductors	Cores	Jacket	Reel Length	Allied code	RS order code
<b>Extension:</b>						
KX	7/0.2mm	+Yellow/-Red	Yellow	25 m	70656102	<b>814-0018</b>
KX	7/0.2mm	+Yellow/-Red	Yellow	100 m	70656105	<b>814-0027</b>
KX	7/0.2mm	+Yellow/-Red	Yellow	200 m	70656103	<b>814-0020</b>
JX	7/0.2mm	+ White/-Red	Black	25 m	70656096	<b>813-9995</b>
JX	7/0.2mm	+ White/-Red	Black	100 m	70656098	<b>814-0005</b>
JX	7/0.2mm	+ White/-Red	Black	200 m	70656099	<b>814-0008</b>
TX	7/0.2mm	+Blue/-Red	Blue	25 m	70656119	<b>814-0074</b>
TX	7/0.2mm	+Blue/-Red	Blue	100 m	70656122	<b>814-0083</b>
TX	7/0.2mm	+Blue/-Red	Blue	200 m	70656123	<b>814-0086</b>
<b>Compensating:</b>						
VX (KCB)	7/0.2mm	+Yellow/-Red	Yellow	25 m	70656127	<b>814-0103</b>
VX (KCB)	7/0.2mm	+Yellow/-Red	Yellow	100 m	70656130	<b>814-0112</b>
VX (KCB)	7/0.2mm	+Yellow/-Red	Yellow	200 m	70656131	<b>814-0115</b>