

Insertion probe: Tapered tip suitable for general purpose temperature measurement, immersion in liquids and penetration of semi-solids and solids including frozen food, grain etc. Maximum temperature 400°C.

Choice of **surface probes:** 'Disc' type features a spring-loaded thermocouple with copper 4mm diameter disc tip, operates up to 850°C. 'Coil' type features a ceramic tip and coiled element for fast response, improved accuracy and maximum temperature of 900°C. Diameter of coiled element is 5.5mm.

Air probes: Thermocouple junction protected by perforated sheath allowing the free passage of gases, for fast response measurement up to 750°C.

SEN6

Type	Mftrs. List No.	Order Code	Price Each		
			1+	10+	25+
Insertion	Q-K (IEC)	708-1170			
Surface, disc	A-K (IEC)	708-1182			
Surface, coil	C-K (IEC)	708-1194			
Air	L-K (IEC)	708-1200			

Handheld Probes – Type K Exchangeable Probes



Probes:-
 Gen. Purpose: $\varnothing = 4.8$, L = 150,
 Surface: $\varnothing = 4.7$, L = 80
 Air/gas: $\varnothing = 4$, L = 90, Insertion: $\varnothing = 3.2$,
 L = 100, High temp.: $\varnothing = 3$, L = 200

- A range of probes for general purpose, insertion, air/gas, surface, and high temperature measurement
- An economical solution to multi-application temperature measurement
- Universal handle suits range of plug-in probes

The stainless steel probes are terminated directly with miniature thermocouple plugs allowing direct connection to thermocouple instruments and circuits or plugging in to the universal handle.

The universal handle has a miniature socket allowing any plug-in probe to be fitted to form a complete hand-held sensor and also has an extendible coiled lead with miniature plug for connection to instruments.

Probe	Temperature	Features
General purpose	350°C max.	Spring loaded copper disc tip
Surface	850°C max.	Fast response
Air/gas	750°C max.	Chisel type tip
Insertion	350°C max.	Bendable mineral insulated probe
High temperature Handle	1100°C max.	Nylon, with 1.5m coiled lead and miniature plug

SEN294

	Mftrs. List No.	Order Code	Price Each		
			1+	10+	25+
Handle	HH-PL-K (IEC)	708-1595			
Surface probe	A-PL-K (IEC)	708-1601			
General purpose probe	M-PL-K (IEC)	708-1613			
Air/gas probe	L-PL-K (IEC)	708-1625			
Insertion probe	F2-PL-K (IEC)	708-1637			
High temperature probe	E2-PL-K (IEC)	708-1649			

Thermocouple Accessories

General Data

Thermocouple Extension and Compensation Cable

Extension cable has a temperature v e.m.f. relationship to the 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 a limited ambient temperature, generally not higher than 80°C.

Ordinary copper wires and connectors should never be used to join thermocouples to instruments – substantial errors can result. Use only thermocouples compensating or extension cable and thermocouple connectors.

Guide to Wire and Cable Insulation

Insulation Material	Usable Temperature Range	Application Guide
PVC	-10°C to 105°C	Good general-purpose insulation for 'light' environments. Waterproof and very flexible.
PTFE	-75°C to 250/300°C	Resistant to oils, acids, other adverse agents and fluids. Good mechanical strength and flexibility.
Glass-fibre (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.
Glass-fibre (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.

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 thermocouple 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.

Source: LABFACILITY TEMPERATURE HANDBOOK – Order Code 656-069.

SAT60

Extension Cable and Compensating Cable, PVC Types J, K, T and Vx



Colour coded to **BS4937 Part 30:1993**.

Extension Cable

Extension cable suitable for thermocouples. The cable is 7/0.2 twin flat with PVC covered conductors with an overall sheath of PVC. The cable is ideally suited for extending thermocouples away from the heat source via the connectors listed below.

Compensating Cable (Type K)

The Vx cable is type K compensating at ambient temperatures up to 80°C.

Mftrs. List No.	WJ-200/10M (IEC) = 708-2289	WV-100/100M (IEC) = 708-2381
	WJ-200/50M (IEC) = 708-2290	WT-009/10M (IEC) = 708-2356
	WK-150/10M (IEC) = 708-2307	WT-009/50M (IEC) = 708-2368
	WK-150/50M (IEC) = 708-2319	WV-009/25M (IEC) = 708-2393
	WN-001/10M (IEC) = 708-2320	WV-009/100M (IEC) = 708-2400
	WT-200/10M (IEC) = 708-2332	WU-009/25M (IEC) = 708-2411
	WT-200/50M (IEC) = 708-2344	WU-009/100M (IEC) = 708-2423
	WV-100/25M (IEC) = 708-2370	

SEN4

	Order Code	Price Each			
		1+	5+	10+	25+
Extension Cable					
Type J, 7/0.2 10m	708-2289				
Type J, 7/0.2 50m	708-2290				
Type K, 7/0.2 10m	708-2307				
Type K, 7/0.2 50m	708-2319				
Type N, 7/0.2 10m	708-2320				
Type T, 7/0.2 10m	708-2332				
Type T, 7/0.2 50m	708-2344				
Type T, 13/0.2, 10m	708-2356				
Type T, 13/0.2, 50m	708-2368				
Compensating Cable					
Type Vx (K), 7/0.2 25m	708-2370				
Type Vx (K), 7/0.2 100m	708-2381				
Type Vx (K), 13/0.2, 25m	708-2393				
Type Vx (K), 13/0.2, 100m	708-2400				
Type RC/SC, 13/0.2, 25m	708-2411				
Type RC/SC, 13/0.2, 100m	708-2423				

Extension Cable, PTFE Types K and T



- Flexible extension cable for types K and T thermocouples
- Comprises pair of PTFE-insulated flexible conductors with overall flat PTFE sheath
- Good chemical resistance

Conductor size	7/0.2mm
Approx. overall size	2.4 2.0mm
Maximum continuous temperature	250°C

SEN295

	Mftrs. List No.	Order Code	Price Each		
			1+	10+	25+
Type K, 25m	WK-302/25M (IEC)	708-5904			
Type T, 25m	WT-046/25M (IEC)	708-5916			

Extension Cable, Glass Fibre Insulated Types J, K and T



- Suitable for high ambient temperature applications
- Each conductor insulated with silicon varnish-impregnated fibre glass
- Overall fibre glass sheath impregnated with silicon varnish

	Type J	Type K
Wire diameter	1/0.315	1/0.315
Overall diameter	1.5mm	1.5mm
Max continuous temperature	350°C	350°C
Positive conductor	Iron	Nickel chromium
Negative conductor	Constantan	Nickel aluminium

SEN5

	Mftrs. List No.	Order Code	Price Each		
			1+	10+	25+
Type J, 10m coil	WJ-032/10M (IEC)	708-5928			
Type K, 10m coil	WK-041/10M (IEC)	708-5930			
Type K, 50m reel	WK-041/50M (IEC)	708-5941			
Type T, 10m coil	WT-056/10M (IEC)	708-5953			