

# HEATSENSE®

## CABLES

Specialist High-Performance Solutions

### HEATSENSE THERMOCOUPLE CABLES

#### THERMOCOUPLE CABLES

The Thermocouple Junction

#### EXTENSION CABLES

Suffixed X, Extension cables are the same materials as the Thermocouple but not required to be calibrated with the same stringency or to the same temperatures as the Thermocouple.

#### COMPENSATING CABLES

Suffixed C, Compensating cables are different materials, not the same as the original Thermocouple, but up to certain temperature range have the same thermoelectric properties. Generally used in conjunction with precious metal thermocouples where the high cost is a major factor.

Thermocouple Max. +1250°C	Extension and Compensating -25°C to +200°C	Control point/Instrument
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Thermocouple Type	Extension Cable	Compensating Cable	IEC	English	ANSI/ASTM	DIN	French	Japanese
K	KX							
		KCA						
		KCB						
T	TX							
J	JX							
N	NX							
		NC						
E	EX							
R	RX	RCA						
		RCB						
S	SX	SCA						
		SCB						
B	BX	BC						
L	LX							
U	UX							
			IEC60584	BS1843 BS4937	ANSI MC96.1 ASTM E230	DIN 43710	NF C 42-324	JIS C 1610

#### General Cable Constructions

Twisted pairs	Screened and Jacketed	Composite Thermocouples	High Temperature, Armoured	Multi-pair Thermocouples	Flat twins	Single Shot	Twisted and Jacketed

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## TYPES, TEMPERATURE AND TOLERANCE OF THERMOCOUPLE, EXTENSION AND COMPENSATING CABLES

Thermocouple Types	Material		Temperature Range	Tolerance	Temperature Range	Tolerance
	+ve	-ve	IEC 60584-2	IEC 60584-2	ANSI/ASTM	ANSI/ASTM
K	NICR	NIAL	-40°C to +1000°C	±1.5°C or 0.4%	0°C to +1260°C	±1.1°C or 0.4%
KX	NICR	NIAL	-25°C to +200°C	±1.5°C	0°C to +200°C	±1.1°C
KCA	Fe	CON	0°C to +150°C	±2.5°C	-	-
KCB	Cu	CON	0°C to +100°C	±2.5°C	-	-
T	Cu	CON	-40°C to +350°C	±1.5°C or 0.4%	0°C to +370°C	±0.5°C or 0.4%
TX	Cu	CON	-25°C to +100°C	±0.5°C	-60°C to +100°C	±0.5°C
J	Fe	CON	-40°C to +750°C	±1.5°C or 0.4%	0°C to +760°C	±1.1°C or 0.4%
JX	Fe	CON	-25°C to +200°C	±1.5°C	0°C to +200°C	±1.1°C
N	NICS	NIS	-40°C to +1000°C	±1.5°C or 0.4%	0°C to +1260°C	±1.1°C or 0.4%
NX	NICS	NIS	-25°C to +200°C	±1.5°C	0°C to +200°C	±1.1°C
NC	NICS	NIS	0°C to +150°C	±2.5°C	-	-
E	NICR	CON	-40°C to +800°C	±1.5°C or 0.4%	0°C to +870°C	±1.0°C or 0.4%
EX	NICR	CON	-25°C to +200°C	±1.5°C	0°C to +200°C	±1.0°C
R	PTRH13%	PT	0°C to +1600°C	±1.0°C or *	0°C to +1480°C	±0.6°C or 0.1%
RX	Cu	CUPRON	-	-	0°C to +200°C	±5.0°C
RCA	Cu	CUPRON	0°C to +100°C	±2.5°C	-	-
RCB	Cu	CUPRON	0°C to +200°C	±5.0°C	-	-
S	PTRH10%	PT	0°C to +1600°C	±1.0°C or *	0°C to +1480°C	±0.6°C or 0.1%
SX	Cu	CUPRON	-	-	0°C to +200°C	±5.0°C
SCA	Cu	CUPRON	0°C to +100°C	±2.5°C	-	-
SCB	Cu	CUPRON	0°C to +200°C	±5.0°C	-	-
B	PTRH30%	PTRH6%	-600°C to +1700°C	0.25%	870°C to +1700°C	±0.25%
BX	-	-	-	-	0°C to +200°C	±4.2°C
BC	Cu	Cu	0°C to +100°C	±4.2°C	-	-
L	Fe	CON	0°C to +900°C	±3.0°C or 0.75%	-	-
LX	Fe	CON	0°C to +200°C	±3.0°C	-	-
U	Cu	CON	0°C to +600°C	±3.0°C or 0.75%	-	-
UX	Cu	CON	0°C to +200°C	±3.0°C	-	-

*	± [1 + 0.003 (t - 1100)]°C
CON	Constantan (Copper-Nickel)
Cu	Copper, either Plain, or Silver/Tin/Nickel plated
CUPRON	Cupronic or Cupronic 12 (Copper alloy – low nickel content)
Fe	Iron (Thermocouple grade)
NIAL	Nickel Aluminium (Aluminium-Nickel, Alumel)
NICR	Nickel Chromium (Nichrome, Chromium-Nickel, Chromel)
NICS	Nicrosil (Nickel-Chromium-Silicon)
NIS	Nisil (Nickel-Silicon-Magnesium)
PT	Platinum
PTRH6%	Platinum + 6% Rhodium
PTRH10%	Platinum + 10% Rhodium
PTRH13%	Platinum + 13% Rhodium
PTRH30%	Platinum + 30% Rhodium

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