

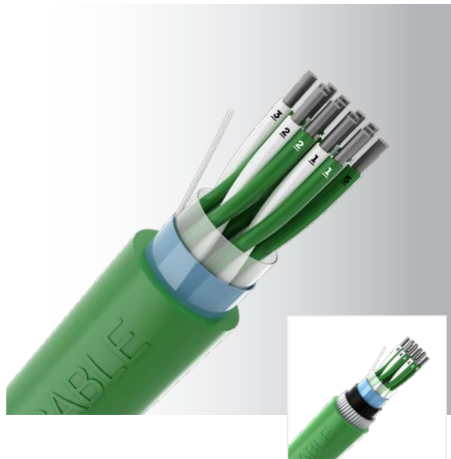
Thermocouple Compensating Cables

500V Pair(s), Type KCA

XLPE Insulated, Overall Screen, Unarmoured or Armoured, PVC Sheathed Cable

Description: Type KCA-XLPE/OS/PVC-UV or Type KCA-XLPE/OS/PVC/SWA/PVC-UV

Model Code: Type KCA-XOP-UV or Type KCA-XOPSP-UV



Application :	This cable is used in temperature measurement to convey information from a thermocouple sensor, to the measuring instrument.
Voltage rating :	500V
Construction :	Solid conductor (Positive: Iron / Negative: Copper Nickel), XLPE insulated, twisted pair(s), overall screen (aluminium/polyester tape with tinned copper drain wire), unarmoured or galvanized steel wire armoured, UV resistant PVC* sheathed cable
Insulation colour :	(+) Green, (-) White (or with numbering)
Sheath colour :	Green
Specification :	BS EN 50288-7, IEC 60584-3, IEC 60332-1-2 IEC 60332-3 (upon request)
Operating temperature :	90°C

*LSZH sheath (upon request), comply with IEC 60332-3, IEC 60754, IEC 61034-2

No. of Pair(s)	Conductor		Insulation Thickness (mm)	Unarmoured Cable			Armoured Cable		
	Nominal Area (mm ²)	No./Diam. of Strand (no./mm)		Part No.	Approx. Overall Diam. (mm)	Approx. Weight (kg/km)	Part No.	Approx. Overall Diam. (mm)	Approx. Weight (kg/km)
1P	0.5	1/0.80	0.6	041P6261	7.1	55	041P6262	9.3	265
2P				042P6261	9.9	100	042P6262	12.2	380
4P				044P6261	11.9	150	044P6262	13.8	455
6P				046P6261	14.2	200	046P6262	16.1	575
8P				048P6261	15.7	250	048P6262	17.6	655
10P				040P6261	17.8	310	040P6262	20.4	890
12P				04BP6261	18.5	340	04BP6262	21.0	960
16P				04FP6261	20.3	415	04FP6262	22.8	1090
20P				04KP6261	22.7	505	04KP6262	25.3	1270
24P				04RP6261	25.3	610	04RP6262	28.4	1635
36P				04P26261	28.9	830	04P26262	32.1	2015
1P				1	1/1.13	0.6	061P6261	7.8	75
2P	062P6261	11.3	135				062P6262	13.5	440
4P	064P6261	13.1	200				064P6262	15.2	540
6P	066P6261	15.8	285				066P6262	17.7	685
8P	068P6261	17.9	360				068P6262	20.4	940
10P	060P6261	20.1	435				060P6262	22.6	1105
12P	06BP6261	20.9	495				06BP6262	23.4	1195
16P	06FP6261	23.1	615				06FP6262	25.6	1395
20P	06KP6261	25.8	755				06KP6262	29.1	1715
24P	06RP6261	28.6	910				06RP6262	31.9	2095
36P	06P26261	32.9	1260				06P26262	36.1	2630

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XLPE Insulated, Overall Screen, Unarmoured or Armoured, PVC Sheathed Cable

Description: Type KCA-XLPE/OS/PVC-UV or Type KCA-XLPE/OS/PVC/SWA/PVC-UV

Model Code: Type KCA-XOP-UV or Type KCA-XOPSP-UV

No. of Pair(s)	Conductor		Insulation Thickness (mm)	Unarmoured Cable			Armoured Cable		
	Nominal Area (mm ²)	No./Diam. of Strand (no./mm)		Part No.	Approx. Overall Diam. (mm)	Approx. Weight (kg/km)	Part No.	Approx. Overall Diam. (mm)	Approx. Weight (kg/km)
	1P	1.3		1/1.29	0.6	411P6261	8.1	85	411P6262
2P				412P6261	12.0	155	412P6262	14.0	470
4P				414P6261	14.2	240	414P6262	16.0	610
6P				416P6261	16.8	435	416P6262	19.4	890
8P				418P6261	18.8	420	418P6262	21.3	1050
10P				410P6261	21.4	520	410P6262	23.9	1230
12P				41BP6261	22.0	585	41BP6262	24.5	1315
16P				41FP6261	24.5	740	41FP6262	27.7	1750
20P				41KP6261	27.4	910	41KP6262	30.6	2045
24P				41RP6261	30.4	1095	41RP6262	33.6	2345
36P				41P26261	35.2	1540	41P26262	39.2	3300
1P	1.5	1/1.38	0.6	071P6261	8.3	85	071P6262	10.7	320
2P				072P6261	12.2	170	072P6262	14.3	485
4P				074P6261	14.6	260	074P6262	16.4	630
6P				076P6261	17.4	365	076P6262	19.9	930
8P				078P6261	19.4	455	078P6262	21.8	1100
10P				070P6261	21.9	565	070P6262	24.4	1300
12P				07BP6261	22.7	635	07BP6262	25.2	1390
16P				07FP6261	25.2	810	07FP6262	28.4	1845
20P				07KP6261	28.3	1000	07KP6262	31.4	2155
24P				07RP6261	31.4	1195	07RP6262	34.5	2500
36P				07P26261	36.2	1690	07P26262	40.2	3510

Table 4 : Code, Colour Code and Properties














Sensors	Types	Conductor Composition		Colours (IEC 60584-3-2007)	Nominal e.m.f. (microvolts 0°C/100°C)	Limits of Error		Temperature of Connected Point with Thermocouple	Measuring Junction Temperature	
		Positive (PX)	Negative (NX)			Class 1	Class 2			
										(°C)
Extension Cables :										
K	KX	Nickel Chromium	Nickel Aluminium		Green (+) White (-) Green (Sheath)	4,10	±1.5	±2.5	-25 ~ +200	900
J	JX	Iron	Copper Nickel (Constantan)		Black (+) White (-) Black (Sheath)	5,27	±1.5	±2.5	-25 ~ +200	500
T	TX	Copper	Copper Nickel (Constantan)		Brown (+) White (-) Brown (Sheath)	4,28	±0.5	±1.0	-25 ~ +100	300
E	EX	Nickel Chromium	Copper Nickel (Constantan)		Violet (+) White (-) Violet (Sheath)	6,32	±1.5	±2.5	-25 ~ +200	500
N	NX	Nickel Chromium Silicon	Nickel Silicon		Pink (+) White (-) Pink (Sheath)	2,77	±1.5	±2.5	-25 ~ +200	900
Compensating Cables :										
K	KCA	Iron	Copper Nickel Alloy		Green (+) White (-) Green (Sheath)	4,10	-	±2.5	0 ~ +150	900
	KCB	Copper	Copper Nickel (Constantan)		Green (+) White (-) Green (Sheath)	4,10	-	±2.5	0 ~ +100	900
R	RCA	Copper	Copper Low Nickel Alloy		Orange (+) White (-) Orange (Sheath)	0,65	-	±2.5	0 ~ +100	1000
	RCB	Copper	Copper Nickel Mo Alloy		Orange (+) White (-) Orange (Sheath)	0,65	-	±5.0	0 ~ +200	1000
S	SCA	Copper	Copper Low Nickel Alloy		Orange (+) White (-) Orange (Sheath)	0,65	-	±2.5	0 ~ +100	1000
	SCB	Copper	Copper Nickel Mo Alloy		Orange (+) White (-) Orange (Sheath)	0,65	-	±5.0	0 ~ +200	1000
B	BC	Copper	Copper		Grey (+) White (-) Grey (Sheath)	0,03	-	±3.5	0 ~ +100	1400
N	NC	Copper Nickel Mg	Copper Nickel Mg		Pink (+) White (-) Pink (Sheath)	2,77	-	±2.5	0 ~ +150	900

Table 5 : Code and Notes

Sensors	Types	Conductor Composition		Notes
		Positive (PX)	Negative (NX)	
K	KX	Nickel Chromium	Nickel Aluminium	Type KX thermocouple extension cable conductors are made from the same constituent elements as the Type K thermocouple combination and therefore minimises potential errors when connecting to a sensor.
	KCA	Iron	Copper Nickel Alloy	This compensating cable conductor combination is little known and generally not available. It should not be confused with the more popular Type KCB as shown below.
	KCB	Copper	Copper Nickel (Constantan)	This popular compensating cable conductor combination (previously known as Type V) is made with Copper vs Copper-Nickel conductors, and should only be used when the ambient temperature of the interconnection point between the cable and its Type K sensor is below 100°C. If suitable to your requirements it can save money where long runs are necessary.
J	JX	Iron	Copper Nickel (Constantan)	Type JX extension cable conductors are made from the same constituent elements as Type J thermocouples. There is no compensating cable available for Type J, however the extension cable is relatively inexpensive.
T	TX	Copper	Copper Nickel (Constantan)	Type TX extension cable conductors are made from the same constituent elements as Type T thermocouples. There is no compensating cable available for Type T, however the extension cable is relatively inexpensive.
E	EX	Nickel Chromium	Copper Nickel (Constantan)	Type EX extension cable conductors are made from the same constituent elements as Type E thermocouples. There is no compensating cable available for Type E.
R	RCA	Copper	Copper Low Nickel Alloy	Type RCA compensating cable is suitable for connecting to Type R thermocouples where the ambient temperature of the interconnection point between the cable and its Type R sensor is below 100°C.
	RCB		Copper Nickel Mo Alloy	Type RCB compensating cable is suitable for connecting to Type R thermocouples where the ambient temperature of the interconnection point between the cable and its Type R sensor is below 200°C, however this increased range is achieved with a lesser degree of accuracy than Type RCA as shown above.
S	SCA	Copper	Copper Low Nickel Alloy	Type SCA compensating cable is suitable for connecting to Type S thermocouples where the ambient temperature of the interconnection point between the cable and its Type S sensor is below 100°C. SCA is in fact the same material as Type RCA.
	SCB		Copper Nickel Mo Alloy	Type SCB compensating cable is suitable for connecting to Type S thermocouples where the ambient temperature of the interconnection point between the cable and its Type S sensor is below 200°C, however this increased range is achieved with a lesser degree of accuracy than Type SCA as shown above. SCB is in fact the same material as Type RCB.
B	BC	Copper	Copper	This compensating cable is made from Copper vs Copper conductors. The expected maximum additional deviation when the ambient interconnection point is between 0 and 100°C would be approximately 3.5°C when the measuring junction is at 1400°C.
N	NX	Nickel Chromium Silicon	Nickel Silicon	Type NX extension cable conductors are made from the same constituent elements as Type N thermocouples. Although there is a designated compensating cable for Type N, it is not readily available at the present.
	NC	Copper Nickel Mg	Copper Nickel Mg	Type NC compensating cable is not readily available at the present. It can be assumed that as Type N thermocouples become more popular the compensating cable will start to be produced.