



IEC 60584-3 Type KCB (VX) compensating cable

KCB

Thermocouple Compensating Cable

Cu / CuNi (VX) compensating cable for Type K thermocouples (0...+100 °C junctions)



IEC 60584-3 Type KCB (VX)

Cu (+) / CuNi (-) Non-Magnetic

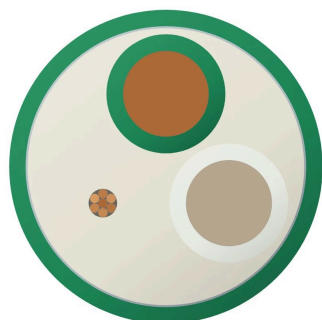
0...+100 °C Junction Range

Application

Economical, non-magnetic Type KCB (formerly British VX) thermocouple compensating cable built to IEC 60584-3 with Copper (+ Cu) and Copper-Nickel (- CuNi) conductors calibrated to match the Type K (NiCr-NiAl) EMF slope over 0 °C to +100 °C.

Typical uses: Oil Refineries, LNG & Petrochemical Complexes, Combined-Cycle & Biomass Power Stations, Chemical & Pharmaceutical Process Plants, Water, Waste-to-Energy & Incineration Plants, Industrial Boiler & HVAC Marshalling Trunks

Construction



Cross-section, not to scale

- 1 Matched Type KCB (VX) compensating conductors
- 2 Colour-coded core insulation
- 3 Individual & collective Al/PET screens
- 4 Optional SWA armour
- 5 Outer jacket (Green RAL 6018 or Blue RAL 5015 Ex-i)

Technical data

Typical values

Compensated thermocouple type	Type K (NiCr-NiAl) per IEC 60584-1 (legacy British code VX)	Positive conductor (+)	High-conductivity Copper (Cu, non-magnetic, $\sim 1.72 \mu\Omega\cdot\text{cm}$)
Negative conductor (-)	Calibrated Copper-Nickel (CuNi $\sim 55/45$, non-magnetic, $\sim 49 \mu\Omega\cdot\text{cm}$)	Tolerance Class 2 (IEC 60584-3)	$\pm 2.5^\circ\text{C}$ ($\pm 100 \mu\text{V}$) over 0°C to $+100^\circ\text{C}$ junction range
Loop resistance @ 20°C	$\approx 1.02 \Omega/\text{m}$ (0.5 mm^2) $\cdot 0.51 \Omega/\text{m}$ (1.0 mm^2) $\cdot 0.34 \Omega/\text{m}$ (1.5 mm^2)	Permissible junction temperature range	0°C to $+100^\circ\text{C}$ (use KCA or KX if head exceeds $+100^\circ\text{C}$)
Cable operating temperature	$-25\dots+100^\circ\text{C}$ (PVC) $\cdot -40\dots+90^\circ\text{C}$ (XLPE/LSZH)	Conductor stranding	0.5 mm^2 (7/0.30) $\cdot 1.0 \text{ mm}^2$ (7/0.43) $\cdot 1.5 \text{ mm}^2$ (7/0.53)
Min. bending radius	$7.5 \times \text{OD}$ (unarmoured) $\cdot 10 \times \text{OD}$ (SWA armoured)	Flame retardance	IEC 60332-1-2 & IEC 60332-3-24 Cat C
Corrosion resistance	100 % non-ferrous Cu/CuNi conductors (no rusting in marine/offshore air)	Standards	IEC 60584-3 & BS 4937-30 (legacy VX)

Sizes

15 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Configuration	Insulation / Sheath	Junction range	Outer $\varnothing \approx$ mm	Weight $\approx$ kg/km	Min. bend R fixed mm
KCB PVC / PVC Screened Process & Marshalling Trunks ($0\dots+100^\circ\text{C}$) 12 sizes						
☐ KCB-PVC-OS 1 $\times$ 2 $\times$ 0.5	1 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (OS)	$0\dots+100^\circ\text{C}$	5.6	44	42
☐ KCB-PVC-PIMF 2 $\times$ 2 $\times$ 0.5	2 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (PIMF+OS)	$0\dots+100^\circ\text{C}$	8.6	84	64
☐ KCB-PVC-PiMF 4 $\times$ 2 $\times$ 0.5	4 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	10.8	142	81
☐ KCB-PVC-PiMF 8 $\times$ 2 $\times$ 0.5	8 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	14.1	246	106
☐ KCB-PVC-PiMF 12 $\times$ 2 $\times$ 0.5	12 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	16.9	348	127
☐ KCB-PVC-PiMF 24 $\times$ 2 $\times$ 0.5	24 $\times$ 2 $\times$ 0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	23.2	642	174
☐ KCB-PVC-OS 1 $\times$ 2 $\times$ 1.0	1 $\times$ 2 $\times$ 1.0 mm ² (7/0.43)	PVC / PVC (OS)	$0\dots+100^\circ\text{C}$	6.7	68	50
☐ KCB-PVC-PiMF 4 $\times$ 2 $\times$ 1.0	4 $\times$ 2 $\times$ 1.0 mm ² (7/0.43)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	12.8	212	96
☐ KCB-PVC-PiMF 8 $\times$ 2 $\times$ 1.0	8 $\times$ 2 $\times$ 1.0 mm ² (7/0.43)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	16.9	378	127
☐ KCB-PVC-OS 1 $\times$ 2 $\times$ 1.5	1 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	PVC / PVC (OS)	$0\dots+100^\circ\text{C}$	7.5	92	56
☐ KCB-PVC-PiMF 4 $\times$ 2 $\times$ 1.5	4 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	14.3	286	107
☐ KCB-PVC-PiMF 8 $\times$ 2 $\times$ 1.5	8 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	PVC / PVC (PiMF+OS)	$0\dots+100^\circ\text{C}$	19.2	515	144
KCB XLPE / LSZH / SWA Armoured Direct-Burial Trunks ($0\dots+90^\circ\text{C}$) 3 sizes						
☐ KCB-XLPE-SWA 1 $\times$ 2 $\times$ 1.5	1 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	$0\dots+90^\circ\text{C}$	12.1	298	121
☐ KCB-XLPE-SWA 4 $\times$ 2 $\times$ 1.5	4 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	$0\dots+90^\circ\text{C}$	19.8	745	198
☐ KCB-XLPE-SWA 8 $\times$ 2 $\times$ 1.5	8 $\times$ 2 $\times$ 1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	$0\dots+90^\circ\text{C}$	25.4	1,210	254

– KCB is calibrated strictly for transition junctions between 0°C and $+100^\circ\text{C}$.

Loop resistance by conductor cross-section

4 sizes

Conductor size	(+) Cu R_{20} $\Omega/\text{m} \approx$	(-) CuNi R_{20} $\Omega/\text{m} \approx$	Loop R_{20} / pair $\Omega/\text{m} \approx$	Class 2 tol. ($0\dots+100^\circ\text{C}$)
0.50 mm ² (7/0.30 mm)	0.036	0.98	1.02	$\pm 2.5^\circ\text{C}$ ($\pm 100 \mu\text{V}$)
0.75 mm ² (7/0.37 mm)	0.025	0.65	0.68	$\pm 2.5^\circ\text{C}$ ($\pm 100 \mu\text{V}$)
1.00 mm ² (7/0.43 mm)	0.018	0.49	0.51	$\pm 2.5^\circ\text{C}$ ($\pm 100 \mu\text{V}$)
1.50 mm ² (7/0.53 mm)	0.012	0.33	0.34	$\pm 2.5^\circ\text{C}$ ($\pm 100 \mu\text{V}$)

– Compared with KX (1.00 Ω/m at 1.0 mm²), KCB cuts loop resistance nearly in half (0.51 Ω/m).

Standards and approvals

- ✓ IEC 60584-3 Class 2 (KCB) Certified
- ✓ BS EN 50288-7 & BS 5308 Compliant
- ✓ CE, RoHS 2 (2011/65/EU) & REACH

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

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Typical values for this cable type, based on IEC 60584-3 / BS 4937-30 / BS EN 50288-7. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.