



IEC 60584-3 Type JX thermocouple cable

JX / Type J extension Thermocouple Cable

True Fe / CuNi (Type J) Class 1 & Class 2 thermocouple extension cable



IEC 60584-3 / ANSI MC96.1

Fe (+) / CuNi (-) True JX

Class 1 ($\pm 1.5\text{ }^{\circ}\text{C}$) $\cdot$ $\sim 52\text{ }\mu\text{V}/^{\circ}\text{C}$

Application

Precision Type JX thermocouple extension cable built to IEC 60584-3 and ANSI MC96.1 with true Iron (+ Fe) and Copper-Nickel (- CuNi) conductors, Class 1 ($\pm 1.5\text{ }^{\circ}\text{C}$) EMF tolerance, Al/PET screen and PVC, XLPE/LSZH, FEP/PTFE or SWA construction.

Typical uses: Plastics Extrusion & Injection Moulding, Rubber Vulcanisation & Tyre Presses, Reducing & Inert-Atmosphere Furnaces, Refinery & Chemical Process Heating, Packaging & Food Processing Machinery

Construction



Cross-section, not to scale

- 1 True Type JX thermocouple alloy conductors
- 2 Colour-coded core insulation
- 3 Individual & collective Al/PET screens
- 4 Optional SWA or steel/copper wire braid
- 5 Outer jacket (Black RAL 9005 or Ex-i Blue)

IEC 60332-1-2 / IEC 60332-3-24 flame retardant

Technical data

Typical values

Positive conductor (+)	Thermocouple-grade Iron (Fe, strongly magnetic, ~10 µΩ·cm)	Negative conductor (-)	Copper-Nickel (CuNi ~55 % Cu / 45 % Ni, non-magnetic, ~49 µΩ·cm)
Tolerance Class 1 (IEC 60584-3)	±1.5 °C (±85 µV) over -25 °C to +200 °C junction range	Tolerance Class 2 (IEC 60584-3)	±2.5 °C (±140 µV) over -25 °C to +200 °C junction range
Nominal Seebeck coefficient	≈ 52.6 µV/°C (0 to +100 °C) · loop R ≈ 0.59 Ω/m at 1.0 mm ²	Thermoelectric calibration range	-25 °C to +200 °C (true extension grade JX)
Insulation rating (by jacket type)	-25...+105 °C (HR-PVC) · -40...+90 °C (XLPE/LSZH) · -60...+200 °C (FEP)	Conductor stranding	0.5 mm ² (7/0.30) · 1.0 mm ² (7/0.43) · 1.5 mm ² (7/0.53) or solid
Min. bending radius	7.5 × OD (unarmoured) · 10 × OD (SWA armoured)	Flame retardance	IEC 60332-1-2 & IEC 60332-3-24 Cat C
Moisture & oil protection	Hermetic extruded core insulation prevents Iron (+ Fe) rusting	Standards	IEC 60584-3, ANSI/ISA MC96.1 (ASTM E230) & DIN 43722

Sizes

16 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	Temp. range	Outer Ø ≈ mm	Weight ≈ kg/km	Min. bend R fixed mm
JX Heat-Resistant PVC / PVC Screened (-25...+105 °C) 10 sizes						
☐ JX-PVC-OS 1×2×0.5	1×2×0.5 mm ² (7/0.30)	PVC / PVC (OS)	-25...+105 °C	5.6	43	42
☐ JX-PVC-PiMF 2×2×0.5	2×2×0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	-25...+105 °C	8.6	82	64
☐ JX-PVC-PiMF 4×2×0.5	4×2×0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	-25...+105 °C	10.8	139	81
☐ JX-PVC-PiMF 8×2×0.5	8×2×0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	-25...+105 °C	14.1	242	106
☐ JX-PVC-PiMF 12×2×0.5	12×2×0.5 mm ² (7/0.30)	PVC / PVC (PiMF+OS)	-25...+105 °C	16.9	342	127
☐ JX-PVC-OS 1×2×1.0	1×2×1.0 mm ² (7/0.43)	PVC / PVC (OS)	-25...+105 °C	6.7	66	50
☐ JX-PVC-PiMF 4×2×1.0	4×2×1.0 mm ² (7/0.43)	PVC / PVC (PiMF+OS)	-25...+105 °C	12.8	208	96
☐ JX-PVC-OS 1×2×1.5	1×2×1.5 mm ² (7/0.53)	PVC / PVC (OS)	-25...+105 °C	7.5	90	56
☐ JX-PVC-PiMF 4×2×1.5	4×2×1.5 mm ² (7/0.53)	PVC / PVC (PiMF+OS)	-25...+105 °C	14.3	280	107
☐ JX-PVC-PiMF 12×2×1.5	12×2×1.5 mm ² (7/0.53)	PVC / PVC (PiMF+OS)	-25...+105 °C	22.6	698	170
JX High-Temperature FEP / FEP Screened (-60...+200 °C) 3 sizes						
☐ JX-FEP-OS 1×2×0.5	1×2×0.5 mm ² (7/0.30)	FEP / FEP (OS)	-60...+200 °C	4.6	37	34
☐ JX-FEP-PiMF 4×2×0.5	4×2×0.5 mm ² (7/0.30)	FEP / FEP (PiMF+OS)	-60...+200 °C	9.2	125	69
☐ JX-FEP-OS 1×2×1.0	1×2×1.0 mm ² (7/0.43)	FEP / FEP (OS)	-60...+200 °C	5.6	57	42
JX XLPE / LSZH / SWA Armoured Direct-Burial (-40...+90 °C) 3 sizes						
☐ JX-XLPE-SWA 1×2×1.5	1×2×1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	-40...+90 °C	12.1	294	121
☐ JX-XLPE-SWA 4×2×1.5	4×2×1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	-40...+90 °C	19.8	738	198
☐ JX-XLPE-SWA 8×2×1.5	8×2×1.5 mm ² (7/0.53)	XLPE / SWA / LSZH	-40...+90 °C	25.0	1,168	250

- Specify 'IEC' (+ Black / - White) or 'ANSI' (+ White / - Red) colour coding when ordering.

Loop resistance & EMF parameters by conductor size

4 sizes

Conductor size	(+) Fe R ₂₀ Ω/m ≈	(-) CuNi R ₂₀ Ω/m ≈	Loop R ₂₀ / pair Ω/m ≈	Class 1 tol. (-25...+200 °C)
0.50 mm ² (7/0.30 mm · AWG 20)	0.20	0.98	1.18	±1.5 °C (±85 µV)
0.75 mm ² (7/0.37 mm · AWG 18)	0.13	0.65	0.78	±1.5 °C (±85 µV)
1.00 mm ² (7/0.43 mm · AWG 17)	0.10	0.49	0.59	±1.5 °C (±85 µV)
1.50 mm ² (7/0.53 mm · AWG 16)	0.07	0.33	0.40	±1.5 °C (±85 µV)

- Type JX has ~41 % lower loop resistance than Type KX (0.59 Ω/m vs 1.00 Ω/m at 1.0 mm²), permitting longer runs to high-impedance inputs.

Standards and approvals

- ✓ IEC 60584-3 Class 1 & Class 2 Certified
- ✓ ANSI/ISA MC96.1 & ASTM E230 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.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/jx-thermocouple-extension-cable



Typical values for this cable type, based on IEC 60584-3 / ANSI MC96.1 / ASTM E230. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.