

**3D torsion robot power cable**

Torsion-Resistant Robot Power Cable

0.6/1 kV $\pm 180^\circ/\text{m}$ to $\pm 360^\circ/\text{m}$ 3D torsion robot motor & welding power cable



0.6/1 kV (UL 1000 V)

$\pm 180^\circ/\text{m}$ to $\pm 360^\circ/\text{m}$

Spiral Cu D-Shield

Application

Heavy-duty 0.6/1 kV (UL 1000 V) 3D torsion-resistant robot power cable (1.5 mm² to 50 mm²) featuring superfine reverse-bundled copper conductors, low-capacitance TPE-E/PP core insulation, helical tinned copper D-shield and weld-spatter-proof PUR jacket.

Typical uses: Automotive Spot-Welding Guns, 6-Axis Robot Base & Wrist Motors, Robotic Milling & Composite Trimming, Laser Cladding & Friction Stir Welding, Heavy Foundry & Forging Manipulators

Construction



Cross-section, not to scale

- 1 Torsion-relieved phase conductors
- 2 0.6/1 kV low-cap insulation
- 3 Central star-profile filler
- 4 Dual PTFE sliding wraps
- 5 Helical tinned copper D-shield
- 6 Weld-spatter PUR jacket

Technical data

Typical values

Rated voltage U0/U	0.6/1 kV (UL/CSA 1000 V)	AC test voltage	4000 V AC (50 Hz, 5 min)
Screen / Field control	Helical tinned Cu D-shield ≥ 85 % (or unscreened P)	Capacitance	≈ 62 pF/m (core/core) · ≈ 110 pF/m (core/screen)
Insulation resistance	≥ 500 MΩ·km at 20 °C	Temperature, flexing	−40 °C to +80 °C
Temperature, fixed installation	−50 °C to +80 °C	Max. conductor temperature	+90 °C (VDE) · +80 °C (UL AWM)
Short-circuit temperature	+250 °C (max. 5 s)	Torsional stress	±180°/m (screened D) · ±360°/m (unscreened P)
Torsion endurance	≥ 5,000,000 torsion cycles	Min. bending radius, moving	7.5 × OD (≤ 16 mm²) · 10 × OD (≥ 25 mm²)
Min. bending radius, fixed	4 × OD	Max. acceleration	Up to 30 m/s² (3D wrist) · 50 m/s² (linear)
Oil resistance	DIN EN 50363-10-2 · UL Oil Res I & II	Flame retardance	IEC 60332-1-2 · UL 1581 VW-1 / FT1
Halogen-free / Smoke density	IEC 60754-1/2 halogen-free PUR	Weld-spatter & LABS	Weld-slag resistant & LABS-free (VW PV 3.10.7)
Standards	DIN VDE 0250 & ISO 10218 robot power spec		

Sizes

14 standard constructions

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

Order designation	Configuration	Phase size	Torsion rating	Outer Ø ≈ mm	Total Cu kg/km	Weight ≈ kg/km	Min. bend R moving mm
4G (3+PE) 3D Torsion Robot Power Cables (1.5–50 mm²) 9 sizes							
☐ ROBOT-PWR 4G1.5 D	4G1.5	1.5 mm²	±180°/m	8.9	81	132	67
☐ ROBOT-PWR 4G2.5 D	4G2.5	2.5 mm²	±180°/m	10.5	126	190	79
☐ ROBOT-PWR 4G4.0 D	4G4.0	4.0 mm²	±180°/m	12.2	196	276	92
☐ ROBOT-PWR 4G6.0 D	4G6.0	6.0 mm²	±180°/m	14.1	286	388	106
☐ ROBOT-PWR 4G10 D	4G10	10 mm²	±180°/m	17.3	464	612	130
☐ ROBOT-PWR 4G16 D	4G16	16 mm²	±180°/m	20.9	722	920	157
☐ ROBOT-PWR 4G25 D	4G25	25 mm²	±180°/m	25.4	1,115	1,380	190
☐ ROBOT-PWR 4G35 D	4G35	35 mm²	±180°/m	28.9	1,540	1,875	217
☐ ROBOT-PWR 4G50 D	4G50	50 mm²	±180°/m	34.2	2,180	2,620	256
3+3G Symmetric-Earth 3D Torsion Spindle & Servo Power Cables 5 sizes							
☐ ROBOT-PWR 3×1.5+3G0.25 D	3×1.5 + 3G0.25	1.5 mm²	±180°/m	9.2	84	138	69
☐ ROBOT-PWR 3×2.5+3G0.5 D	3×2.5 + 3G0.5	2.5 mm²	±180°/m	10.8	130	198	81
☐ ROBOT-PWR 3×4.0+3G0.75 D	3×4.0 + 3G0.75	4.0 mm²	±180°/m	12.6	202	286	94
☐ ROBOT-PWR 3×6.0+3G1.0 D	3×6.0 + 3G1.0	6.0 mm²	±180°/m	14.6	294	402	110
☐ ROBOT-PWR 3×10+3G1.5 D	3×10 + 3G1.5	10 mm²	±180°/m	17.8	475	632	134

– For composite power + brake + signal cores in a single robot dress-pack cable, see Robot Hybrid Power and Signal Cable.

Electrical & ampacity data

14 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Current rating at +30 °C (A)	C core/core pF/m ≈	AC test V _{rms}
4G1.5	13.30	18	62	4,000
4G2.5	7.98	26	62	4,000
4G4.0	4.95	34	72	4,000

Configuration	Max. DC R @ 20 °C Ω/km	Current rating at +30 °C (A)	C core/core pF/m≈	AC test V _{rms}
4G6.0	3.30	44	72	4,000
4G10	1.91	61	72	4,000
4G16	1.21	82	72	4,000
4G25	0.78	108	72	4,000
4G35	0.55	135	72	4,000
4G50	0.39	168	72	4,000
3×1.5 + 3G0.25	13.30	18	62	4,000
3×2.5 + 3G0.5	7.98	26	62	4,000
3×4.0 + 3G0.75	4.95	34	72	4,000
3×6.0 + 3G1.0	3.30	44	72	4,000
3×10 + 3G1.5	1.91	61	72	4,000

– Apply standard derating when routing inside enclosed corrugated robot dress-pack conduits at elevated ambient temperatures.

Standards and approvals

- ✓ CE (2014/35/EU LVD & 2014/30/EU EMC)
- ✓ UL AWM Style 21223 (80 °C 1000 V)
- ✓ VW PV 3.10.7 LABS-Free (Automotive Approved)

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

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Email

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Web

tebaoflex.com/cables/torsion-resistant-robot-power-cable



Typical values for this cable type, based on DIN VDE 0250 / UL AWM Style 21223. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.