



Hybrid servo power & brake cable

Servo Power Cable with Brake Pair

0.6/1 kV servo power cores + individually shielded brake/thermal pairs



0.6/1 kV + 24 V Brake

Double EMC Screened

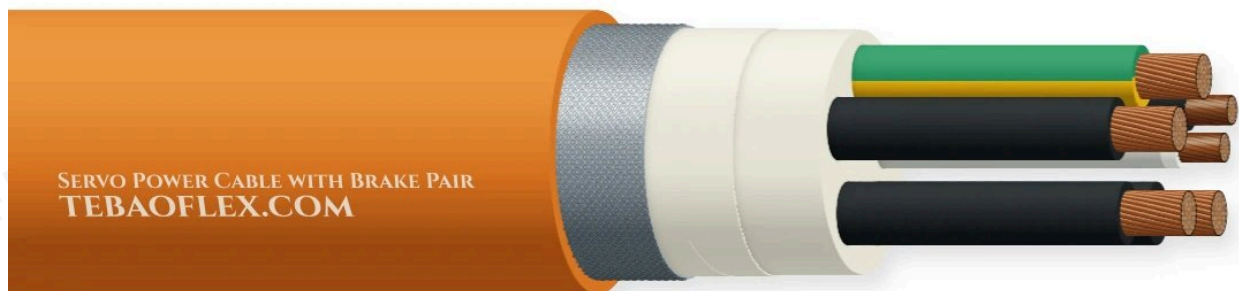
DESINA RAL 2003

Application

Single-jacket drag-chain servo hybrid cable combining four 0.6/1 kV low-capacitance PP power cores (U, V, W, PE) with one or two individually screened control pairs for 24 V DC spring-applied holding brakes and PTC/KTY84 motor temperature sensors.

Typical uses: Vertical Z-Axis CNC Spindles, Gantry Pick-and-Place Robots, Injection Moulding & Press Servos, Automated Palletisers & Stackers, Machine-Tool Tool Changers

Construction



Cross-section, not to scale

- | | | |
|---|----------------------------|---|
| 1 | Power & brake conductors | IEC 60228 Class 6 |
| 2 | Low-capacitance insulation | Low permittivity $\epsilon_r \approx 2.2$ |
| 3 | Individual pair screen (C) | |
| 4 | Bundle sliding wrap | |
| 5 | Overall EMC braid screen | 360° cabinet-to-motor frame EMC grounding |
| 6 | Outer motion jacket | |

Technical data

Typical values

Rated voltage U0/U	Power: 0.6/1 kV · Control pairs: 300/500 V
Screen / Field control	Individual foil+braid on pairs + overall braid ≥ 85 %
Insulation resistance	≥ 500 MΩ·km at 20 °C
Temperature, fixed installation	–50 °C to +80 °C
Short-circuit temperature	+250 °C (max. 5 s)
Min. bending radius, fixed	4 × OD
Max. acceleration	Up to 50 m/s ²
Oil resistance	DIN EN 50363-10-2 · UL Oil Res I & II
Halogen-free / Smoke density	IEC 60754-1/2 halogen-free
Standards	Siemens 6FX8008 / Bosch Rexroth / SEW compatible

AC test voltage	Power: 4000 V AC · Control pairs: 2000 V AC
Capacitance	Power ≈ 60 pF/m · Brake pair ≈ 85 pF/m
Temperature, flexing	–40 °C to +80 °C
Max. conductor temperature	+90 °C (VDE) · +80 °C (UL AWM)
Min. bending radius, moving	7.5 × OD (≤ 16 mm ²) · 10 × OD (≥ 25 mm ²)
Max. travel speed	5 m/s gliding · 10 m/s unsupported
Torsional stress	±30°/m in linear carrier
Flame retardance	IEC 60332-1-2 · UL 1581 FT1 / VW-1
Hydrolysis & microbes	Hydrolysis- and microbe-resistant polyether PUR

Sizes

12 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	Outer Ø ≈ mm	Total Cu kg/km	Weight ≈ kg/km	Min. bend R chain mm
4G Power + 1 Screened Pair (24 V Holding Brake) 8 sizes						
☐ SERVO-FD-BRK 4G1.5+(2×1.0)	4G1.5 + (2×1.0)C	1.5 mm ²	11.4	118	192	86
☐ SERVO-FD-BRK 4G2.5+(2×1.0)	4G2.5 + (2×1.0)C	2.5 mm ²	12.8	165	252	96
☐ SERVO-FD-BRK 4G4.0+(2×1.0)	4G4.0 + (2×1.0)C	4.0 mm ²	14.3	236	342	107
☐ SERVO-FD-BRK 4G6.0+(2×1.5)	4G6.0 + (2×1.5)C	6.0 mm ²	16.4	338	468	123
☐ SERVO-FD-BRK 4G10+(2×1.5)	4G10 + (2×1.5)C	10 mm ²	19.2	522	695	144
☐ SERVO-FD-BRK 4G16+(2×1.5)	4G16 + (2×1.5)C	16 mm ²	22.8	785	1,015	171
☐ SERVO-FD-BRK 4G25+(2×1.5)	4G25 + (2×1.5)C	25 mm ²	26.9	1,180	1,475	202
☐ SERVO-FD-BRK 4G35+(2×1.5)	4G35 + (2×1.5)C	35 mm ²	30.5	1,610	1,980	229
4G Power + 2 Screened Pairs (Brake + Thermal Sensor) 4 sizes						
☐ SERVO-FD-BRK 4G1.5+2×(2×0.75)	4G1.5 + 2×(2×0.75)C	1.5 mm ²	12.2	136	218	92
☐ SERVO-FD-BRK 4G2.5+2×(2×0.75)	4G2.5 + 2×(2×0.75)C	2.5 mm ²	13.5	184	278	101
☐ SERVO-FD-BRK 4G4.0+(2×0.75)+(2×1.0)	4G4.0 + (2×0.75)C + (2×1.0)C	4.0 mm ²	15.1	258	375	113
☐ SERVO-FD-BRK 4G6.0+(2×0.75)+(2×1.5)	4G6.0 + (2×0.75)C + (2×1.5)C	6.0 mm ²	17.2	362	505	129

– Parentheses with 'C' — e.g. (2×1.0)C — denote an individually foil- and braid-screened twisted pair inside the overall braided cable.

Electrical ratings (power & brake pairs)

12 sizes

Configuration	Phase DC R @ 20 °C Ω/km	Brake pair DC R Ω/km	Phase current at +30 °C (A)	Brake pair max. current (A)	Phase AC test V _{rms}
4G1.5 + (2×1.0)C	13.30	19.5	18	10	4,000
4G2.5 + (2×1.0)C	7.98	19.5	26	10	4,000
4G4.0 + (2×1.0)C	4.95	19.5	34	10	4,000
4G6.0 + (2×1.5)C	3.30	13.3	44	14	4,000
4G10 + (2×1.5)C	1.91	13.3	61	14	4,000

Configuration	Phase DC R @ 20 °C Ω/km	Brake pair DC R Ω/km	Phase current at +30 °C (A)	Brake pair max. current (A)	Phase AC test Vrms
4G16 + (2×1.5)C	1.21	13.3	82	14	4,000
4G25 + (2×1.5)C	0.78	13.3	108	14	4,000
4G35 + (2×1.5)C	0.55	13.3	135	14	4,000
4G1.5 + 2×(2×0.75)C	13.30	26.0	18	7	4,000
4G2.5 + 2×(2×0.75)C	7.98	26.0	26	7	4,000
4G4.0 + (2×0.75)C + (2×1.0)C	4.95	19.5	34	10	4,000
4G6.0 + (2×0.75)C + (2×1.5)C	3.30	13.3	44	14	4,000

– 1.0 mm² and 1.5 mm² brake pairs ensure < 5 % voltage drop on 24 V DC holding-brake coils over 25 m to 50 m cable runs.

Standards and approvals

- ✓ CE (2014/35/EU LVD & 2014/30/EU EMC)
- ✓ UL AWM Style 21223 (80 °C 1000 V Dual-Rating)
- ✓ DESINA Colour-Coding Compliant (RAL 2003)

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

info@tebaoflex.com

Web

tebaoflex.com/cables/servo-power-cable-with-brake-pair



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.