Cleanroom 3D torsion robot cable

RT 793 D

Cleanroom Torsion-Resistant Robot Control & Power Cable

ISO Class 1 cleanroom ±360°/m torsion robot cable with spiral D-shield

ISO 14644-1 Class 1 | **±360°/m / ±180°/m Torsion** | **Spiral Cu D-Shield**

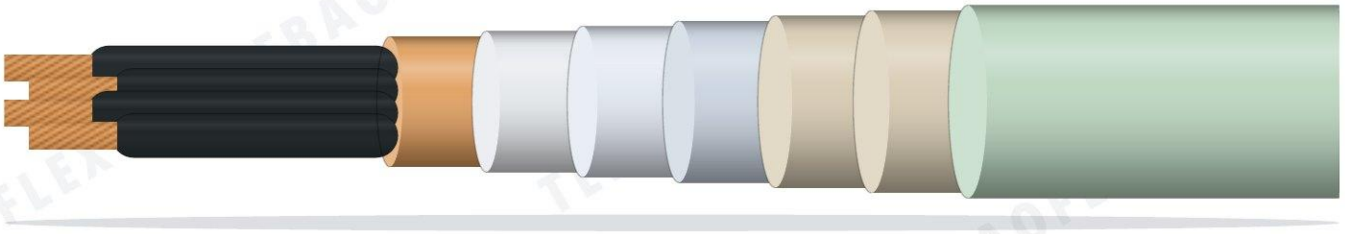


Application

RT 793 D is an ISO 14644-1 Class 1 cleanroom 3D torsion robot control and power cable featuring extra-fine Class 6+ copper strands, low-outgassing TPE insulation, helical tinned copper D-shield and non-particulating matte PUR jacket.

Typical uses: Semiconductor Wafer-Handling Robots, EUV & DUV Lithography Track Cells, OLED / Flat-Panel Display Cleanrooms, Aseptic Pharmaceutical Filling Lines, Aerospace Satellite Assembly Rooms

Construction





Cross-section, not to scale

1. Torsion-relieved copper conductor
2. Low-outgassing TPE insulation
3. Inner PTFE anti-friction wrap
4. Outer PTFE separating wrap
5. Separator / barrier tape
6. Separator / barrier tape
7. Non-particulating cleanroom PUR sheath

Technical data

Typical values

Rated voltage U0/U	300/500 V (0.6/1 kV on 1.5–2.5 mm² · UL 600 V)	**AC test voltage**	2000 V AC (0.25 mm²) · 3000 V AC (≥ 0.5 mm²)
Screen / Field control	Helical tinned copper D-shield ≥ 85 % coverage	**Mutual capacitance**	≈ 65 pF/m (core/core) · ≈ 115 pF/m (core/screen)
Temperature, flexing	−40 °C to +80 °C	**Temperature, fixed installation**	−50 °C to +90 °C
Max. conductor temperature	+90 °C (+80 °C UL AWM)	**Torsional stress**	Up to ±360°/m (±180°/m continuous high-speed)
Torsion endurance	≥ 5,000,000 torsion cycles	**Min. bending radius, moving**	7.5 × OD (3D robot & drag chain)
Min. bending radius, fixed	4 × OD	**Cleanroom classification**	ISO 14644-1 Class 1 · US Fed. Std. 209E Class 1
Outgassing (AMC / VOC)	Ultra-low VOC/SVOC outgassing per ISO 14644-8	**Sterilisation & wipe-down**	Resists IPA alcohol, H2O2 VHP & cleanroom detergents
Halogen-free & LABS-free	IEC 60754-1/2 halogen-free & 100 % silicone-free	**Flame retardance**	IEC 60332-1-2 · UL 1581 FT1 / VW-1
Standards	ISO 14644-1 Class 1 & VDI 2083 cleanroom 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	Cross-section	Outer Ø ≈ mm	Total Cu kg/km	Weight ≈ kg/km	Min. bend R moving mm
0.25 mm² D-screened cleanroom robot sensor & gripper cables 5 sizes						
☐ RT 793 D 4×0.25	4×0.25 D	0.25 mm²	5.2	19	39	39
☐ RT 793 D 8×0.25	8×0.25 D	0.25 mm²	6.6	33	62	50
☐ RT 793 D 12×0.25	12×0.25 D	0.25 mm²	7.6	46	84	57
☐ RT 793 D 18×0.25	18×0.25 D	0.25 mm²	8.9	66	116	67
☐ RT 793 D 25×0.25	25×0.25 D	0.25 mm²	10.4	89	156	78
0.50 mm² D-screened cleanroom robot control cables 4 sizes						
☐ RT 793 D 4G0.5	4G0.5 D	0.50 mm²	6.1	31	55	46
☐ RT 793 D 7G0.5	7G0.5 D	0.50 mm²	7.4	50	84	56
☐ RT 793 D 12G0.5	12G0.5 D	0.50 mm²	9.5	82	134	71
☐ RT 793 D 18G0.5	18G0.5 D	0.50 mm²	11.2	118	188	84
0.75 mm² D-screened cleanroom robot control cables 3 sizes						
☐ RT 793 D 4G0.75	4G0.75 D	0.75 mm²	6.7	43	68	50
☐ RT 793 D 7G0.75	7G0.75 D	0.75 mm²	8.2	70	108	61
☐ RT 793 D 12G0.75	12G0.75 D	0.75 mm²	10.6	114	176	80
1.50–2.50 mm² D-screened cleanroom robot servo power cables 2 sizes						
☐ RT 793 D 4G1.5	4G1.5 D	1.50 mm²	8.4	79	122	63
☐ RT 793 D 4G2.5	4G2.5 D	2.50 mm²	10.1	124	182	76

– For linear cleanroom drag chains (unscreened, braided, or twisted-pair), see SD 776 / SD 780 C / SD 787 C TP.

Electrical & cleanroom parameters

5 sizes

Cross-section	ISO 14644-1 class	Max. DC R @ 20 °C Ω/km	Ampacity 3-loaded (A)	AC test V rms
0.25 mm² D	ISO Class 1 (≤ 10 particles ≥ 0.1 µm/m³)	79.00	4.5	2,000
0.50 mm² D	ISO Class 1 (≤ 10 particles ≥ 0.1 µm/m³)	39.00	9.0	3,000
0.75 mm² D	ISO Class 1 (≤ 10 particles ≥ 0.1 µm/m³)	26.00	12.0	3,000
1.50 mm² D	ISO Class 1 (≤ 10 particles ≥ 0.1 µm/m³)	13.30	18.0	3,000
2.50 mm² D	ISO Class 1 (≤ 10 particles ≥ 0.1 µm/m³)	7.98	26.0	3,000

– Shipped double-bagged in cleanroom polyethylene packaging on plastic spools upon request.

Standards and approvals

- ✓ ISO 14644-1 Air Cleanliness Class 1 Qualified
- ✓ UL AWM Style 21576 / 20939 (80 °C 600/1000 V) · CSA
- ✓ CE, RoHS 2 (2011/65/EU) & 100 % Silicone/Halogen-Free

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/sabclean-rt-793-d-cleanroom-torsion-resistant-robot-control-power-cable

Typical values for this cable type, based on ISO 14644-1 Class 1 / DIN VDE 0285 / UL AWM. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.