



ESCC 3901/018 spacecraft equipment wire

ESCC 3901-018

Space-Grade Polyimide/Fluoropolymer Equipment Wire

ESA ESCC 3901/018 600 Vrms -200...+200 °C polyimide/fluoropolymer low-outgassing spacecraft



ESA ESCC 3901/018

-200 °C to +200 °C

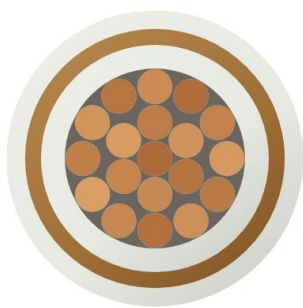
TML < 1.0 % / CVCM < 0.1 %

Application

Space-grade ultra-lightweight equipment wire, twisted pair and shielded harness cable (ESCC 3901-018) built to European Space Agency ESCC Detail Specification 3901/018, rated 600 Vrms from -200 °C to +200 °C with silver-plated copper or high-strength.

Typical uses: LEO / MEO / GEO Communications & Earth-Observation Satellites, Deep-Space Scientific Probes & Optical Telescope Payloads, Expendable & Reusable Launch-Vehicle Upper-Stage Avionics, Space-Station Pressurised & Unpressurised External Harnesses, Ultra-High-Vacuum (UHV) Synchrotron & Cryogenic Chambers

Construction



Cross-section, not to scale

- 1 Silver-plated copper (SPC) or high-strength copper alloy (SPCA)
- 2 Wrapped polyimide film primary dielectric
- 3 Sintered PTFE fluoropolymer outer barrier
- 4 Silver-plated copper (SPC) flat/round braid (Shielded variants)
- 5 Sintered polyimide/PTFE outer jacket (Shielded variants)

Technical data

Typical values

Rated voltage	600 Vrms (up to 2,500 Hz)	Spark test / dielectric proof	5.0 kVrms in-line spark test · 2.5 kVrms immersion test
Insulation resistance	≥ 5,000 MΩ·km at +20 °C	Arc-tracking resistance	Pass 7-wire dry & wet arc-tracking per ESCC 3901
Operating temperature	–200 °C to +200 °C (continuous in vacuum or air)	Thermal shock	100 cycles –196 °C (LN2) to +200 °C with zero cracking
Conductor size range	28, 26, 24 AWG (Cu-Alloy) · 22, 20, 18, 16, 14, 12 AWG (Cu)	Silver plating thickness	≥ 2.0 µm (up to 5.0 µm anti-red-plague option)
Min. bend radius	5 × OD (single core) · 6 × OD (shielded multiconductor)	Vacuum outgassing (ECSS / ASTM E595)	TML < 1.0 % (typ. 0.08 %) · CVCM < 0.10 % (typ. 0.01 %)
Radiation resistance	≥ 100 Mrad (10 ⁶ Gy) gamma / electron fluence	Flammability	Non-flammable in 30 % O ₂ spacecraft cabin test (ECSS-Q-ST-70-21)
Standards	ESA ESCC Detail Spec 3901/018 & Generic Spec 3901		

Sizes

12 standard constructions

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

ESCC Designation	Configuration & AWG	Stranding (mm) & Material	Cond. OD mm	Max OD mm	Max R20 Ω/km	Max Mass g/m (kg/km)
ESCC 3901/018 Unshielded Single Hook-Up Wire & Twisted Pairs (600 Vrms) 8 sizes						
☐ ESCC 390101801B (1×28)	1 × 28 AWG Single	19 × 0.079 SPCA Alloy	0.38	0.68	236.0	1.15
☐ ESCC 390101802B (1×26)	1 × 26 AWG Single	19 × 0.100 SPCA Alloy	0.48	0.78	148.0	1.70
☐ ESCC 390101803B (1×24)	1 × 24 AWG Single	19 × 0.120 SPCA Alloy	0.60	0.90	102.0	2.40
☐ ESCC 390101804B (1×22)	1 × 22 AWG Single	19 × 0.150 SPC Copper	0.76	1.06	54.5	3.65
☐ ESCC 390101805B (1×20)	1 × 20 AWG Single	19 × 0.200 SPC Copper	0.98	1.29	30.8	6.10
☐ ESCC 390101806B (1×16)	1 × 16 AWG Single	19 × 0.300 SPC Copper	1.48	1.82	13.7	13.20
☐ ESCC 390101808B (1×12)	1 × 12 AWG Power	37 × 0.320 SPC Copper	2.24	2.65	6.2	29.50
☐ ESCC 390101811B (2×24)	2 × 24 AWG Twisted Pair	19 × 0.120 SPCA Alloy	0.60	1.80	107.0	4.95
ESCC 3901/018 SPC Braided & PTFE/Polyimide Jacketed Shielded Space Cables 4 sizes						
☐ ESCC 390101831B (1×24S)	1 × 24 AWG Shielded	19 × 0.120 SPCA + SPC Braid	0.60	1.38	102.0	5.80
☐ ESCC 390101839B (2×26S)	2 × 26 AWG Shielded Pair	19 × 0.100 SPCA + SPC Braid	0.48	2.04	155.0	7.60
☐ ESCC 390101841B (2×22S)	2 × 22 AWG Shielded Pair	19 × 0.150 SPC + SPC Braid	0.76	2.60	57.2	12.80
☐ ESCC 390101855B (4×24S)	4 × 24 AWG Shielded Quad	19 × 0.120 SPCA + SPC Braid	0.60	2.68	107.0	15.40

– Full ESCC 3901/018 range includes 1, 2, 3 and 4 cores unshielded and shielded from 28 AWG to 12 AWG.

Standards and approvals

- ✓ ESA ESCC Detail Specification 3901/018 Compliant
- ✓ ECSS-Q-ST-70-02C / ASTM E595 Low Outgassing Certified

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/escc-3901-018-space-grade-polyimide-fluoropolymer-equipment-wire



Typical values for this cable type, based on ESA ESCC Detail Specification 3901/018 & ESCC Generic Specification 3901. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.