



Triboelectric low-noise sensor cable

Low-Noise Cable for Piezoelectric Sensors

Conductive-carbon/PTFE triboelectric-treated low-noise charge accelerometer cable



≤ 5–15 fC Triboelectric Noise

–70...+260 °C PTFE / FEP / PFA

Coax, Triax & Differential Pair

Application

Ultra-low-noise coaxial, triaxial and differential twisted-pair cable for high-impedance charge-mode piezoelectric accelerometers and pressure sensors, featuring a conductive carbon-PTFE anti-triboelectric layer that suppresses flex noise below ≤ 5–15 fC.

Typical uses: Aero-Engine & Gas Turbine Vibration Monitoring, Automotive NVH, Crash & Shaker Table Testing, High-Temperature Dynamic Pressure & Combustion, Nuclear & Steam Turbine Bearing Diagnostics, Underwater Acoustics & Piezo Hydrophones

Construction



Cross-section, not to scale

- 1 Fine-stranded silver-plated copper (SPC / SPCCS)
- 2 Virgin extruded PTFE dielectric
- 3 Semi-conductive carbon/graphite-PTFE triboelectric layer
- 4 High-density silver-plated copper braid screen
- 5 High-temperature FEP, PFA or flexible PUR jacket

Technical data

Typical values

Max. triboelectric charge noise	≤ 5 fC to ≤ 15 fC (0.005–0.015 pC) peak-to-peak	Insulation resistance	≥ 10,000 GΩ·m (10 ¹³ Ω·m) at +20 °C
Characteristic impedance (coax / triax)	50 Ω ± 2 Ω	Nominal capacitance	95–100 pF/m (50 Ω coax) · ~85 pF/m (differential pair)
Operating & test voltage	250 V rms working · 1000 V rms AC dielectric test	Operating temperature (PFA jacket)	–70 °C to +260 °C
Operating temperature (FEP jacket)	–65 °C to +200 °C	Operating temperature (PUR jacket)	–40 °C to +105 °C
Min. bending radius	5 × OD (dynamic vibration) · 3 × OD (static routing)	Connector compatibility	10-32 UNF Microdot, M5, BNC, TNC, LEMO 00/0B, MIL-C-5015
Fluid & chemical resistance	Resistant to Jet-A1, Skydrol, synthetic lubricants & solvents	Flame retardance	UL 94 V-0 / IEC 60332-1-2 (FEP & PFA fluoropolymer jackets)
Standards	IEST-RP-DTE011 & Perls / ISA S37.10 shaker whip test		

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	Construction	Dielectric / Jacket	Noise & temp. rating	Outer Ø ≈ mm	Weight ≈ kg/km	Min. bend R mm
50 Ω Low-Noise Coaxial Charge-Mode Cables (10-32 UNF / BNC) 5 sizes						
☐ PIEZO-LN-50-195	50 Ω Coax · AWG 28 (7×36 SPC)	PTFE + Carbon / FEP	≤ 15 fC · –65...+200 °C	1.95	8.5	10
☐ PIEZO-LN-50-250	50 Ω Coax · AWG 26 (7×34 SPC)	PTFE + Carbon / FEP	≤ 10 fC · –65...+200 °C	2.50	13.0	12
☐ PIEZO-LN-50-280 (RG-174 LN)	50 Ω Coax · AWG 26 (7×34 SPC)	PTFE + Carbon / PFA	≤ 5 fC · –70...+260 °C	2.80	16.5	14
☐ PIEZO-LN-50-320	50 Ω Coax · AWG 24 (19×36 SPC)	PTFE + Carbon / FEP	≤ 10 fC · –65...+200 °C	3.20	21.0	16
☐ PIEZO-LN-PUR-300	50 Ω Coax · AWG 26 (19×38 Cu)	PE + Carbon / PUR	≤ 25 fC · –40...+105 °C	3.00	14.5	15
Differential Twisted-Pair Low-Noise Charge-Mode Cables (Turbine / Industrial) 4 sizes						
☐ PIEZO-LN-TP 1×2×AWG26	1 Pair × AWG 26 (19×38 SPC)	PTFE + Carbon / FEP	Diff. Charge · –65...+200 °C	3.40	19.5	17
☐ PIEZO-LN-TP 1×2×AWG24	1 Pair × AWG 24 (19×36 SPC)	PTFE + Carbon / FEP	Diff. Charge · –65...+200 °C	4.10	28.0	20
☐ PIEZO-LN-TP 1×2×AWG22	1 Pair × AWG 22 (19×34 SPC)	PTFE + Carbon / PFA	Diff. Charge · –70...+260 °C	4.80	39.0	24
☐ PIEZO-LN-TP 2×2×AWG24	2 Pairs × AWG 24 (19×36 SPC)	PTFE + Carbon / FEP	Dual-Axis · –65...+200 °C	6.40	62.0	32
Concentric Triaxial & 4-Wire Triaxial IEPE Sensor Cables 3 sizes						
☐ PIEZO-LN-TRIAx-280	50 Ω Triax · AWG 26 SPC	PTFE + Carbon / FEP	Driven Guard · –65...+200 °C	2.85	19.0	14
☐ PIEZO-LN-TRIAx-360	50 Ω Triax · AWG 24 SPC	PTFE + Carbon / PFA	Driven Guard · –70...+260 °C	3.60	29.0	18
☐ PIEZO-IEPE-4×AWG26	4-Core × AWG 26 SPC	FEP / FEP Braided	Triaxial IEPE · –65...+200 °C	3.50	23.0	18

– When terminating low-noise coaxial cable, strip back or clean any loose conductive carbon residue from the cut end of the PTFE dielectric so insulation resistance stays ≥ 10¹² Ω.

Electrical parameters by cable geometry

4 sizes

Geometry	Impedance Ω	Nom. C pF/m	Max. tribo noise fC pk-pk	Min. IR @ 20 °C GΩ·m
50 Ω Coax (PTFE + Carbon / FEP or PFA)	50 ± 2	96	10	10,000
50 Ω Coax (PE + Carbon / PUR)	50 ± 3	100	25	5,000
Differential Twisted Pair (PTFE + Carbon)	100 ± 10	85	15	10,000
50 Ω Concentric Triaxial (PTFE + Carbon)	50 ± 2	96	10	10,000

– 1 fC (femtocoulomb) = 0.001 pC (picocoulomb). Untreated RG-174 coaxial cable can generate > 5,000 fC (5 pC) under the same vibration.

Standards and approvals

- ✓ IEST-RP-DTE011 Low-Triboelectric-Noise Qualified
- ✓ MIL-DTL-17 Fluoropolymer Coaxial Basis
- ✓ 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/low-noise-cable-for-piezoelectric-sensors



Typical values for this cable type, based on IEST-RP-DTE011 / MIL-DTL-17 / ISO 16063. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.