instrumentation cable series

Piezoelectric Coaxial Sensing Cable

Solid-Dielectric Piezoelectric Coaxial Vibration Sensing Cable



Solid compressed piezoceramic-mineral coaxial WIM, impact & perimeter sensing cable

Seamless Copper MIMS Tube **Compressed Piezoceramic Core**

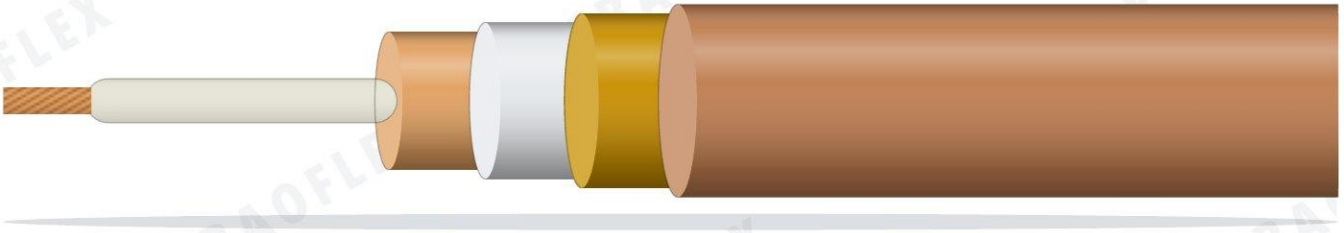
Class I WIM & Perimeter

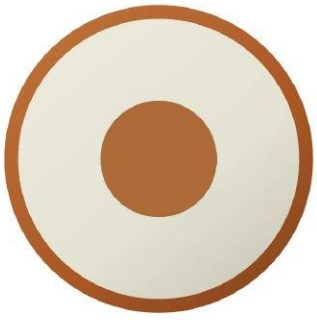
Application

Piezoelectric Coaxial Sensing Cable Solid-Dielectric Piezoelectric Coaxial Sensing Cable (3.0 mm copper tube / 3.9 mm PU-jacketed) manufactured by compacting radially polarized piezoelectric mineral/ceramic powder between a solid copper centre conductor and a.

Typical uses: High-Speed Highway Weigh-In-Motion (Class I WIM), Military Base, Airport & Prison Perimeter Fences, Bank Vault Wall, Roof & Buried Ground Intrusion, Ballistic Acoustic Target Scoring & Impact Gauges, Rail Wheel-Flat & Bogie Hunting Trackside Detectors

Construction





Cross-section, not to scale

1. Solid annealed copper centre electrode
2. Compacted radially poled piezoceramic mineral powder
3. Seamless cold-drawn copper outer tubular electrode
4. UV-stabilized Polyurethane (PU) / PE protective jacket

Technical data

Typical values

Piezoelectric sensitivity	≈ 15 to 22 pC/N (calibrated to ±5 % or ±10 % uniformity class)	**Linear capacitance @ 1 kHz**	820 ± 80 pF/m (@ 20 °C)
Insulation resistance	≥ 10^{11} Ω·m @ 100 V DC (hermetically sealed)	**Transfer impedance**	< 1 mΩ/m (solid seamless copper outer tube)
Operating temp. (Bare Cu)	-55 °C to +125 °C continuous (up to +150 °C peak)	**Operating temp. (PU Jacket)**	-40 °C to +90 °C continuous
Sensitivity temp. stability	≤ ±5 % variation across -20 °C to +70 °C	**Outer diameter**	3.00 ± 0.05 mm (Bare Cu) · 3.90 ± 0.10 mm (PU Jacketed)
Min. cold bend radius	20 mm (hand-formable annealed copper tube)	**Hydrostatic crush strength**	> 100 MPa radial compression without short-circuit
Dynamic axle fatigue life	> 100,000,000 axle passes (inorganic mineral-ceramic core)	**Moisture permeability**	Zero (100 % seamless metallic copper tube barrier)
EMI / lightning immunity	Solid copper tube shields inner conductor from 50/60 Hz & RF	**Standards**	ASTM E1318 & COST 323 Class I Weigh-In-Motion

Sizes

3 standard constructions

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

Order designation	Jacket & uniformity class	Outer Ø mm	Weight ≈ kg/km	Capacitance pF/m	Uniformity ±%
Solid-Dielectric Copper-Sheathed Piezoelectric Coaxial Cables 3 sizes					
☐ **Piezoelectric Coaxial Sensing Cable 3.0-CU-CL1**	**Bare Copper Tube · Class I WIM (±5 % Uniformity)**	**3.00**	**42**	**820**	**5**
☐ **Piezoelectric Coaxial Sensing Cable 3.9-PU-CL1**	**PU Jacketed · Class I WIM (±5 % Uniformity)**	**3.90**	**49**	**820**	**5**
☐ **Piezoelectric Coaxial Sensing Cable 3.9-PU-SEC**	**PU Jacketed · Perimeter Fence & Intrusion (±10 %)**	**3.90**	**49**	**820**	**10**

– Can be supplied as custom cut-to-lane WIM sensor bars (1.8 m to 4.0 m) or up to 300 m perimeter security zones.

Standards and approvals

- ✓ COST 323 Class I WIM
- ✓ ASTM E1318 Compliant
- ✓ EN 50131-1 Security Grade

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/vibracoax-solid-dielectric-piezoelectric-coaxial-vibration-impact-sensing-cable

Typical values for this cable type, based on ASTM E1318 / COST 323 / EN 50131-1. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.