



IEC 60519-3 low-reactance induction cable

Water-Cooled Two-Conductor Coaxial Cable

50 Hz–50 kHz (1.5–11.5 kA) low-reactance 2-conductor water-cooled induction furnace



IEC 60519-3 · 50 Hz to 50 kHz

2-Conductor Go/Return in 1 Hose

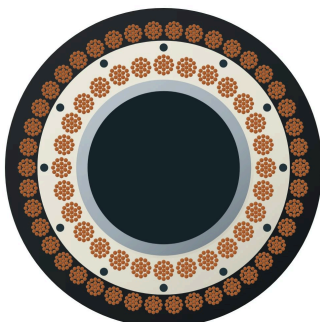
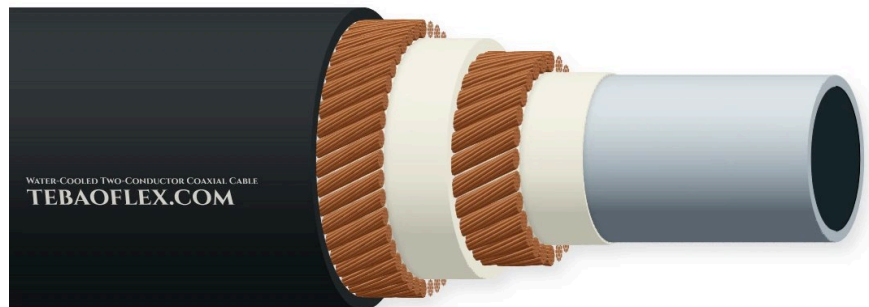
Ultra-Low Inductive Reactance (X_L)

Application

Low-reactance two-conductor coaxial and interleaved water-cooled flexible power cable (Water-Cooled Two-Conductor Coaxial Cable) built to IEC 60519-3 for medium- and high-frequency (50 Hz to 50 kHz, up to 3,000 V and 12 kA) coreless induction melting.

Typical uses: Coreless Induction Melting Furnaces (Foundry Iron, Steel, Al, Cu), Vacuum Induction Melting (VIM) & Cold-Crucible Furnaces, MF/HF Forging Billet Heaters & Seam-Welded Tube Mills, Induction Hardening, Brazing & Crystal-Pulling Coils

Construction



Cross-section, not to scale

- 1 Concentric / interleaved outer Return conductor (–I)
- 2 Inner cooling channel & central Go conductor (+I)
- 3 High-dielectric inter-conductor barrier hose
- 4 Cord-reinforced slag-resistant EPDM outer cooling hose

Technical data

Typical values

Operating frequency & voltage range	50 Hz to 50 kHz · 800 V to 3,000 V AC rms (6–10 kV AC dielectric test)	Loop inductance per unit length (L')	0.04 to 0.08 µH/m (75–85 % lower than two separate single-core cables)
Continuous MF/HF current rating	1,500 A (2×95 mm ²) to 11,500 A (2×630 mm ²)	Cooling water flow & temperature	12 to 52 L/min deionised water (≤ 50 µS/cm) · Inlet ≤ 35 °C, Outlet ≤ 55 °C
Thermal cycling & overload stability	Verified thermal ageing and short-circuit withstand per standard	Working & test hydrostatic pressure	0.4–0.6 MPa working · 1.0–1.2 MPa routine hydrostatic proof test
Minimum dynamic bending radius	8.5 × outer hose diameter during hydraulic furnace pour tilting	Inter-conductor dielectric strength	6.0 kV to 10.0 kV AC rms (50 Hz, 1 min) between Go and Return conductors
Environmental & chemical durability	Resistant to moisture, industrial fluids and service ageing	Standards	IEC 60519-3 (Safety in induction heating), VDE 0721 & JB/T 6314

Sizes

7 standard constructions

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

Order designation	Go + Return area	Voltage · Freq.	Hose OD ≈ mm	Rated current kA	Water flow L/min	Min. bend R mm
High- & Medium-Frequency Coaxial Induction Leads (1–50 kHz · 2×95 to 2×240 mm ²) 3 sizes						
☐ WC-2C-LR-2×95	2×95 mm ² (Go & Return)	1.5 kV · 1–10 kHz	38.0	1.6	12	320
☐ WC-2C-LR-2×150	2×150 mm ² (Go & Return)	1.5 kV · 1–10 kHz	45.0	2.5	16	380
☐ WC-2C-LR-2×240	2×240 mm ² (Go & Return)	2.0 kV · 0.5–10 kHz	54.0	4.0	22	460
High-Current Melting Furnace Interleaved/Coaxial Leads (50 Hz–4 kHz · 2×320 to 2×630 mm ²) 4 sizes						
☐ WC-2C-LR-2×320	2×320 mm ² (Go & Return)	2.5 kV · 0.25–4 kHz	62.0	5.5	28	530
☐ WC-2C-LR-2×400	2×400 mm ² (Go & Return)	3.0 kV · 0.1–3 kHz	68.0	7.0	34	580
☐ WC-2C-LR-2×500	2×500 mm ² (Go & Return)	3.0 kV · 0.05–2 kHz	75.0	9.0	42	650
☐ WC-2C-LR-2×630	2×630 mm ² (Go & Return)	3.0 kV · 0.05–1 kHz	84.0	11.5	52	720

– Manufactured to exact pin-to-pin length (1.5 m to 12 m) with customer-specified copper palm hole patterns and water fittings.

Standards and approvals

- ✓ IEC 60519-3 Induction Heating Safety Compliant
- ✓ 100 % 6–10 kV Dielectric & 1.0 MPa Hydrostatic Tested
- ✓ CE & ISO 9001 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/water-cooled-low-reactance-two-conductor-coaxial-high-frequency-induction-heating-feeder-cable



Typical values for this cable type, based on IEC 60519-3 / JB/T 6314 / VDE 0721. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.