



power connection cable series

MLE / Motor Lead Extension

ESP Motor Lead Extension Cable

Ultra-low-profile flat 3–5 kV +204/+232 °C ESP pothead motor lead extension



ESP Motor Lead Extension

+204 °C / +232 °C Pothead

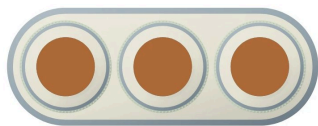
Polyimide-FEP + Lead / Monel

Application

MLE / Motor Lead Extension ESP Cable (3 kV, 4 kV & 5 kV) engineered per IEEE Std 1018, IEEE Std 1019 and API RP 11S5 to bridge the tight annulus between the main downhole ESP cable splice and the submersible motor pothead—combining.

Typical uses: Downhole Oil & Gas ESP Motor Completions, SAGD Steam-Assisted Heavy Oil Wells (+232 °C), Sour Crude (High H₂S / CO₂) Artificial Lift, Deep Geothermal Brine Production Wells, Offshore Platform Subsea ESP Boosters

Construction



Cross-section, not to scale

- 1 3 × Parallel solid annealed/tinned copper conductors
- 2 Sintered Polyimide-FEP fluoropolymer dielectric barrier
- 3 High-temperature oil-resistant EPDM (or PEEK) insulation
- 4 Seamless extruded Lead alloy (or PVDF/Tedlar) gas barrier
- 5 Ultra-low-profile Monel 400 / 316L / Galvanized flat armour

Technical data

Typical values

Voltage ratings	3.0 kV · 4.0 kV · 5.0 kV AC phase-to-phase	Factory DC hi-pot test	25 kV DC (3 kV) · 30 kV DC (4 kV) · 35 kV DC (5 kV) for 5 min
Max. DC resistance @ 20 °C	2.10 Ω/km (#8 AWG) · 1.32 Ω/km (#6 AWG) · 0.83 Ω/km (#4 AWG)	Insulation resistance	≥ 5,000 MΩ·km @ 20 °C (polyimide-FEP + EPDM hybrid)
Conductor temp. rating	+204 °C continuous (EPDM/TF) · +232 °C continuous (Lead/SAGD)	Motor annulus heat transfer	Cooled by high-velocity produced fluid flowing past the ESP motor
Cold spooling limit	-40 °C minimum rig-floor installation temperature	Radial thickness × width	8.6 × 21.8 mm (#8) · 9.8 × 25.4 mm (#6) · 11.4 × 29.5 mm (#4 Lead)
Min. bend radius	7 × radial thickness over flat axis	Hydrostatic pressure	Up to 35 MPa (5,000 psi) bottomhole wellbore pressure
Sour gas (H ₂ S) immunity	Seamless lead barrier prevents H ₂ S copper attack and sulfide stress cracking	Decompression resistance	Polyimide-FEP film + lead sheath + flat armour prevents gas blistering
Armour corrosion grade	Galvanized steel, 316L stainless steel, or Monel 400 nickel-copper	Standards	IEEE Std 1018 & API RP 1155 / API RP 11S6

Sizes

6 standard constructions

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

Order designation	AWG, voltage & barrier	Height × Width mm	Weight ≈ kg/km	Max. DC R Ω/km	Max. current A
4–5 kV +204 °C Polyimide-FEP + EPDM Non-Leaded MLE 3 sizes					
☐ MLE-TF 4kV #8 Solid	3 × #8 AWG (8.37 mm ²) · 4 kV PI-FEP/EPDM	8.6 × 21.8	640	2.100	58
☐ MLE-TF 5kV #6 Solid	3 × #6 AWG (13.3 mm ²) · 5 kV PI-FEP/EPDM	9.7 × 24.9	890	1.320	78
☐ MLE-TF 5kV #4 Solid	3 × #4 AWG (21.2 mm ²) · 5 kV PI-FEP/EPDM	11.2 × 28.7	1,240	0.830	105
4–5 kV +232 °C Polyimide-FEP + EPDM + Lead MLE 3 sizes					
☐ MLE-PB 5kV #8 Lead/Monel	3 × #8 AWG · 5 kV PI-FEP/EPDM/Lead	9.6 × 24.4	1,180	2.100	58
☐ MLE-PB 5kV #6 Lead/Monel	3 × #6 AWG · 5 kV PI-FEP/EPDM/Lead	10.8 × 27.9	1,560	1.320	78
☐ MLE-PB 5kV #4 Lead/Monel	3 × #4 AWG · 5 kV PI-FEP/EPDM/Lead	12.2 × 31.8	2,090	0.830	105

– MLE is intentionally 1–2 AWG sizes smaller than the main ESP cable because high-velocity fluid in the narrow pump annulus cools the MLE efficiently.

Standards and approvals

- ✓ IEEE Std 1018 & IEEE Std 1019
- ✓ API RP 11S5 & API RP 11S6
- ✓ ISO 9001 Oilfield QA

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/esp-motor-lead-extension-cable



Typical values for this cable type, based on IEEE Std 1018 / IEEE Std 1019 / API RP 11S5 / 11S6. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.