Subsea umbilical cables

# RJIT 1.8/3 (3.6) kV

## Dynamic Subsea Electro-Optical Cable

Dynamic wave and tidal 3-core TPE-E power plus 12-fibre PUR cable

IEC 60502-1 | 1.8/3 (3.6) kV | 3-Core + 12F Optical




## Application

Dynamic 1.8/3 (3.6) kV marine electro-optical power cable with Class 6 tinned copper, TPE-E insulation, central 12-fibre telemetry unit, polyaramid braid and yellow PUR sheath.

**Typical uses:** Wave Energy Converters (WEC), Tidal Stream Turbines (TEC), Floating Offshore Research Buoys, Dynamic Subsea Marine Risers

## Construction






Cross-section, not to scale

| | | |
|---|---|---|
| 1 | **Power conductors** | IEC 60228 Class 6 extra-flexible annealed tinned copper · IEC 60228 Class 6 |
| 2 | **Core insulation** | 90 °C thermoplastic polyester elastomer (TPE-E), Brown, Black & Grey · HD 308 S2 |
| 3 | **12-fibre optical subunit** | Central 12-fibre ITU-T G.652D nano optical unit with 3 black fillers · ITU-T G.652D |
| 4 | **Tensile reinforcement** | High-modulus braided polyaramid yarn tensile strength layer |
| 5 | **Outer sheath** | Yellow dynamic marine-grade polyurethane (PUR) outer sheath |

## Technical data

Typical values

| | | | |
|---|---|---|---|
| Rated voltage U0/U | 1.8/3 (3.6) kV AC | AC test voltage | 6.5 kV AC (5 min) |
| Conductor resistance (50 mm²) | ≤ 0.393 Ω/km at 20 °C | Insulation system | 90 °C TPE-E dielectric |
| Temperature, flexing | -20 °C to +90 °C (dynamic subsea) | Temperature, fixed installation | -40 °C to +90 °C |
| Max. conductor temperature | +90 °C | Short-circuit temperature | +250 °C (max. 5 s) |
| Min. bending radius, moving | 10 × OD (dynamic wave/tidal) | Min. bending radius, fixed | 6 × OD |
| Tensile reinforcement | Braided polyaramid yarn layer | Fibre type | Single-mode ITU-T G.652D (9/125 µm) |
| Fibre count | 12 fibres (nano optical unit) | Attenuation | ≤ 0.38 dB/km @ 1310 nm · ≤ 0.25 @ 1550 nm |
| Water | Permanent dynamic seawater immersion | Abrasion | High-tear marine PUR outer sheath |
| UV & ozone | UV-, ozone- & microbe-resistant PUR | Oil resistance | Resistant to marine & hydraulic oils |
| Standards | IEC 60502-1 (applicable parts) | | |

## Sizes

5 standard constructions

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

| Order designation | Configuration | Outer Ø ≈ mm | Max. DCR 20 °C Ω/km | Weight in air ≈ kg/km | Dynamic bend R mm |
|---|---|---|---|---|---|
| **1.8/3 (3.6) kV 3-core + 12F optical** 5 sizes | | | | | |
| ☐ RJIT 1.8/3 kV 3×25 + 12F | 3 × 25 mm² + 12F SM | 33.5 | 0.795 | 1,480 | 335 |
| ☐ RJIT 1.8/3 kV 3×35 + 12F | 3 × 35 mm² + 12F SM | 36.8 | 0.565 | 1,890 | 368 |
| ☐ RJIT 1.8/3 kV 3×50 + 12F | 3 × 50 mm² + 12F SM | 40.0 | 0.393 | 2,420 | 400 |
| ☐ RJIT 1.8/3 kV 3×70 + 12F | 3 × 70 mm² + 12F SM | 44.5 | 0.277 | 3,180 | 445 |
| ☐ RJIT 1.8/3 kV 3×95 + 12F | 3 × 95 mm² + 12F SM | 49.2 | 0.210 | 4,120 | 492 |

– Representative 3×50 mm² + 12F build has nominal outer diameter 40.0 mm. Wet weight and tensile break load confirmed with project quotation.

## Standards and approvals

- IEC 60502-1 (applicable parts) & IEC 60228 Class 6 design compliance
- EN 10204 3.1 Factory Electrical & OTDR Test Certificate
- 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/rjit-1-8-3-3-6-kv-iec-60502-1**

Typical values for this cable type, based on IEC 60502-1 (applicable parts) & IEC 60228 Class 6. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.