TYPE · ROUND MV REELING CABLE | 8.7/15 kV | 9 VARIANTS | EQUIVALENT TO PROTOLON SMRT

# FC-SMRT 8.7/15 kV

## Round Medium-Voltage Reeling Cable

Medium-duty round medium-voltage reeling cable for moderate mechanical loads — the same screened EPR core design as XPRT with a lighter 5GM5 sheath and no reinforcement braid.

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## 01 Application and product overview

Medium-duty reeling cable for mobile equipment with moderate mechanical load: mobile crushing and screening plants, gantry and portal cranes, shiploaders and spooling systems.

Same screened EPR phase core design as the XPRT series, with a lighter 5GM5 rubber outer sheath and without reinforcement braid.

### Typical applications

- Mobile crushing and screening plants
- Gantry and portal cranes
- Shiploaders
- Spooling systems
- Equipment with moderate mechanical load where a lighter, more economical construction is sufficient

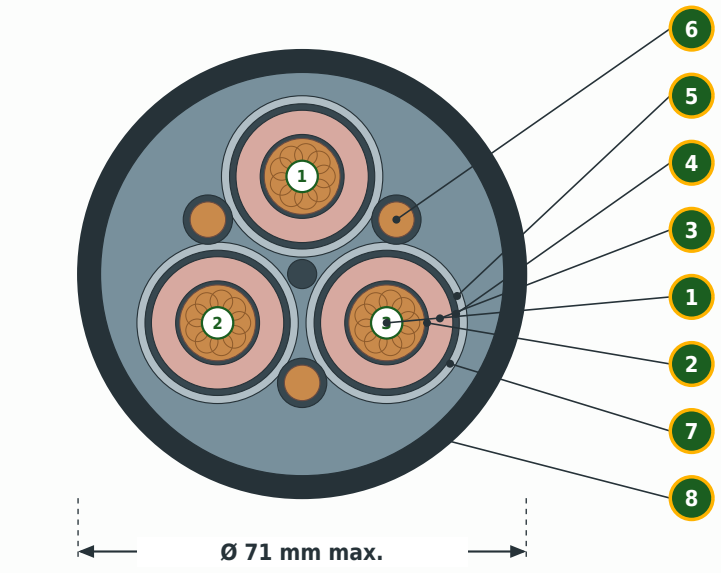
| 9 variants | 8.7/15 kV | 10 × d | EPR · 5GM5 |
|---|---|---|---|
| Phase conductor 25 – 240 mm² | Rated voltage $U_0/U$ | Min. bending radius, reeling | Insulation 3GI3 · rubber sheath |

### Equivalent reference type

| REFERENCE TYPE | | FEICHUN EQUIVALENT |
|---|---|---|
| **PROTOLON SMRT (N)TSCGEWOEU 8,7/15kV** | ⇄ | **FC-SMRT 8.7/15 kV** |

Designed as a functional equivalent of the named reference type. The type code follows the reference designation; refer to the relevant DIN VDE part for its meaning.

## 02 Construction




Section A–A · FC-SMRT 8.7/15 kV · ref. 3x70/3E
Schematic, 1st-angle, not to scale; other sizes scale proportionally.

| No. | Element | Material |
|---|---|---|
| 1 | **Conductor** | Fine-wire tinned copper conductor, class 5 (IEC 60228) |
| 2 | **Conductor screen** | Semi-conductive rubber compound |
| 3 | **Core insulation** | EPR insulation, compound 3GI3 (DIN VDE 0207-20) |
| 4 | **Insulation screen** | Semi-conductive rubber compound |
| 5 | **Core screen** | Braid of tinned copper wires over each phase core |
| 6 | **Earth conductor** | Fine-wire tinned copper earth conductor with semi-conductive covering |
| 7 | **Inner sheath** | Rubber inner sheath, pressure-extruded, filling the interstices |
| 8 | **Outer sheath** | Heavy-duty rubber compound 5GM5 (DIN VDE 0207-21), black, oil- and weather-resistant |

**Core structure:** Three phase cores laid up around a central filler; three earth conductors laid in the interstices; phase cores identified by numbers. Earth conductors: total cross-section approx. equal to one phase conductor.

## 03 Electrical, thermal and mechanical characteristics

### Electrical

| | |
|---|---|
| **Rated voltage $U_0/U$** | 8.7/15 kV |
| **Max. operating voltage $U_m$** | 17.5 kV |
| **Test voltage (AC, 5 min)** | 22 kV (2.5 × $U_0$) |
| **Max. conductor temperature** | +90 °C |
| **Semi-conductive layers** | Conductor screen and insulation screen on every phase core |
| **Earth conductors** | 3 conductors, total cross-section approx. equal to one phase conductor |

### Thermal, mechanical and environmental

| | |
|---|---|
| **Temperature, flexing / reeling** | −30 °C to +90 °C |
| **Temperature, fixed installation** | −40 °C to +90 °C |
| **Bending radius, reeling operation** | min. 10 × d |
| **Tensile load** | max. 15 N/mm² (sum of copper cross-sections) |
| **Flame retardance** | IEC 60332-1-2 |
| **Oil / weather resistance** | Oil-resistant; resistant to UV, ozone and weathering |
| **Halogen-free** | No (chlorine-containing rubber sheath) |
| **Lead-free / REACH** | RoHS II (2011/65/EU); REACH (EC) No. 1907/2006 |

## 04 Dimensions, weights and ratings — 8.7/15 kV (9 variants)

| Cores × cross-section mm² | FeiChun part no. | Earth conductors mm² | Outer diameter max. mm | Copper index kg/km | Weight approx. kg/km | Max. tensile load kN | Min. bending radius mm |
|---|---|---|---|---|---|---|---|
| **3×25/3E** | FC-SMRT-8715-001 | 3×10 | 60 | 933 | 4,272 | 1.6 | 575 |
| **3×35/3E** | FC-SMRT-8715-002 | 3×10 | 62 | 1,200 | 4,796 | 2.0 | 600 |
| **3×50/3E** | FC-SMRT-8715-003 | 3×16 | 66 | 1,760 | 5,752 | 3.0 | 640 |
| **3×70/3E** | FC-SMRT-8715-004 | 3×25 | 71 | 2,534 | 6,945 | 4.3 | 685 |
| **3×95/3E** | FC-SMRT-8715-005 | 3×35 | 76 | 3,467 | 8,427 | 5.8 | 735 |
| **3×120/3E** | FC-SMRT-8715-006 | 3×35 | 80 | 4,134 | 9,560 | 7.0 | 770 |
| **3×150/3E** | FC-SMRT-8715-007 | 3×50 | 84 | 5,334 | 11,184 | 9.0 | 815 |
| **3×185/3E** | FC-SMRT-8715-008 | 3×70 | 89 | 6,801 | 13,173 | 11.5 | 860 |
| **3×240/3E** | FC-SMRT-8715-009 | 3×70 | 96 | 8,268 | 15,623 | 13.9 | 930 |

Dimensions, copper index, weight, tensile load and bending radius are calculated reference values (tensile load 15 N/mm² of total copper cross-section; bending radius for reeling operation); final values are confirmed in the product data sheet at order.

Max. phase conductor resistance at 20 °C (Ω/km): 25: 0.795; 35: 0.565; 50: 0.393; 70: 0.277; 95: 0.21; 120: 0.164; 150: 0.132; 185: 0.108; 240: 0.0817.

## 05 Standards and testing

| Standard | Scope |
|---|---|
| **DIN VDE 0250 series** | Design basis of the cable |
| **DIN VDE 0207-20** | EPR insulation compound 3GI3 |
| **DIN VDE 0207-21** | Rubber sheath compound 5GM5 |
| **IEC 60228** | Conductors, class 5 |
| **IEC 60332-1-2** | Flame propagation, single cable |
| **2011/65/EU · (EC) 1907/2006** | RoHS II · REACH |

### Routine and type tests

- AC voltage test, 22 kV for 5 min (2.5 × $U_0$)
- Conductor resistance and dimensional check
- Continuity of earth conductors
- Winding, bending and torsion tests (type test)
- Flame retardance (IEC 60332-1-2)

**Test documentation:** every delivery is accompanied by a FeiChun in-house laboratory inspection certificate. Third-party witnessed tests can be arranged at the buyer's cost.

## 06 Installation and supply

### Installation notes

- Observe the minimum bending radius of 10 × d in reeling operation; the drum core should not be smaller than this radius allows.
- Keep tensile load within 15 N/mm² of the total copper cross-section.
- Pay off from the shipping drum tangentially — never pull it over the flange; avoid loops and kinks.
- Protect against machine run-over and crushing; inspect the sheath regularly.
- Connect the earth conductors at both ends.

### Packaging and supply

| | |
|---|---|
| **Drum** | Steel or fumigated wooden drums; ends sealed with heat-shrink caps |
| **Delivery lengths** | To order, in one continuous length (no joints) |
| **Lead time** | 2–3 weeks after technical approval |
| **Warranty** | At least 3 years against manufacturing defects |
| **Drum label** | Type, size, length, gross/net weight, batch no., drum no. |

## 07 Certification and quality

### CE — LVD 2014/35/EU

Certificate No. M.2025.206.C116598 · EN 50525-1:2011+A1:2022 · UDEM International Certification · valid until 01.04.2030

### EAC — TR CU 004/2011

Certificate No. ЕАЭС KG417/052.CN.02.15390 · GOST 31996-2012, GOST 31565-2012 · valid 24.10.2025–23.10.2030

### UKCA — Verification

No. ICR/VC/HS2508110 · BS EN 50525-1:2011+A1:2022 · ICR Polska · valid until 17.08.2030

FeiChun also holds confirmation of documentation review for ATEX (Directive 2014/34/EU) and IECEx / VDE approvals for certain product groups. Approvals for specific mines are arranged with the end user or local distributor where required. Certificate copies are available on request.

## 08 Trademark notice and intellectual property

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### Document control

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