TYPE · ROUND MV REELING CABLE | 18/30 kV | 10 VARIANTS | EQUIVALENT TO PROTOLON XPRT

FC-XPRT 18/30 kV

Round Medium-Voltage Reeling Cable

Heavy-duty round medium-voltage reeling and trailing cable for high tensile and mechanical loads — screened EPR phase cores, tensile reinforcement braid and a heavy-duty 5GM5 rubber sheath.

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01 Application and product overview

Heavy-duty reeling and trailing cable for mobile machines under high mechanical stress: ship-to-shore and rubber-tyred gantry cranes, stacker/reclaimers, mining shovels, tunnel boring machines and spreader or cable reels.

Screened EPR phase cores, a tensile reinforcement braid and a heavy-duty 5GM5 rubber outer sheath give high resistance to tensile load, abrasion, oil, ozone and weathering.

Typical applications

- Ship-to-shore and rubber-tyred gantry cranes in container terminals
- Stacker/reclaimers, shiploaders and bulk-handling machines
- Open-pit mining shovels and mobile crushing plants
- Tunnel boring machines
- Spreader and cable reels

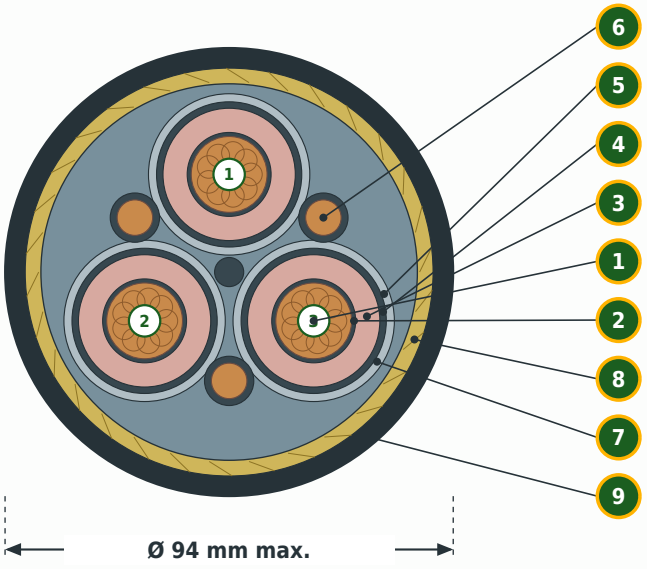
10 variants	18/30 kV	8 × d	EPR · 5GM5
Phase conductor 25 – 300 mm²	Rated voltage U_0/U	Min. bending radius, reeling	Insulation 3GI3 · rubber sheath

Equivalent reference type

REFERENCE TYPE	FEICHUN EQUIVALENT
PROTOLON XPRT (N)TSCGEWOEU 18/30kV	**FC-XPRT 18/30 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-XPRT 18/30 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	**Reinforcement**	Tensile-resistant textile reinforcement braid
9	**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	18/30 kV
Max. operating voltage U_m	36 kV
Test voltage (AC, 5 min)	45 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. 8 × 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 — 18/30 kV (10 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-XPRT-1830-001	3×10	82	933	7,288	1.6	640
3×35/3E	FC-XPRT-1830-002	3×10	85	1,200	7,937	2.0	660
3×50/3E	FC-XPRT-1830-003	3×16	89	1,760	9,083	3.0	690
3×70/3E	FC-XPRT-1830-004	3×25	94	2,534	10,478	4.3	725
3×95/3E	FC-XPRT-1830-005	3×35	99	3,467	12,201	5.8	770
3×120/3E	FC-XPRT-1830-006	3×35	103	4,134	13,516	7.0	800
3×150/3E	FC-XPRT-1830-007	3×50	107	5,334	15,336	9.0	830
3×185/3E	FC-XPRT-1830-008	3×70	112	6,801	17,559	11.5	870
3×240/3E	FC-XPRT-1830-009	3×70	120	8,268	20,358	13.9	925
3×300/3E	FC-XPRT-1830-010	3×95	126	10,535	23,707	17.8	980

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; 300: 0.0654.

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, 45 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 8 × 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. EAЭC 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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