TYPE · LV REELING · E-RTG | 0.6/1 kV | 18 Variants

CORDAFLEX XPRT E-RTG Equivalent

FC-CFX-ER (N)SHTÖU 0,6/1 kV

Low voltage power reeling cable for electrified rubber-tyred gantry cranes (E-RTG) — high current, optional integrated fibre optics for crane automation.

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01 Application & Product Overview

FC-CFX-ER is a heavy-duty low voltage power reeling cable designed for the cable reels of electrified rubber-tyred gantry cranes (E-RTG), which run on grid power instead of diesel generators.

Three large phase cores with a symmetrical split earth carry the full crane power, while an optional central fibre-optic element (12 × E9 single-mode) provides the data link for remote and automated operation — power and data on a single reel.

Typical applications

- E-RTG cable reel systems — conversion of diesel RTGs to grid power
- Automated and remote-controlled container yards
- RMG cranes and other gantries with motor-driven reels
- Frequent start / stop and direction changes along the container block
- Outdoor use in port climates — ozone, UV, salt spray, moisture

18 variants
9 power, 9 power + FO

35 – 300 mm²
Phase conductor range

30 N/mm²
Max. tensile load on conductor

12 × E9
Integrated single-mode fibres (FO versions)

Cross-reference

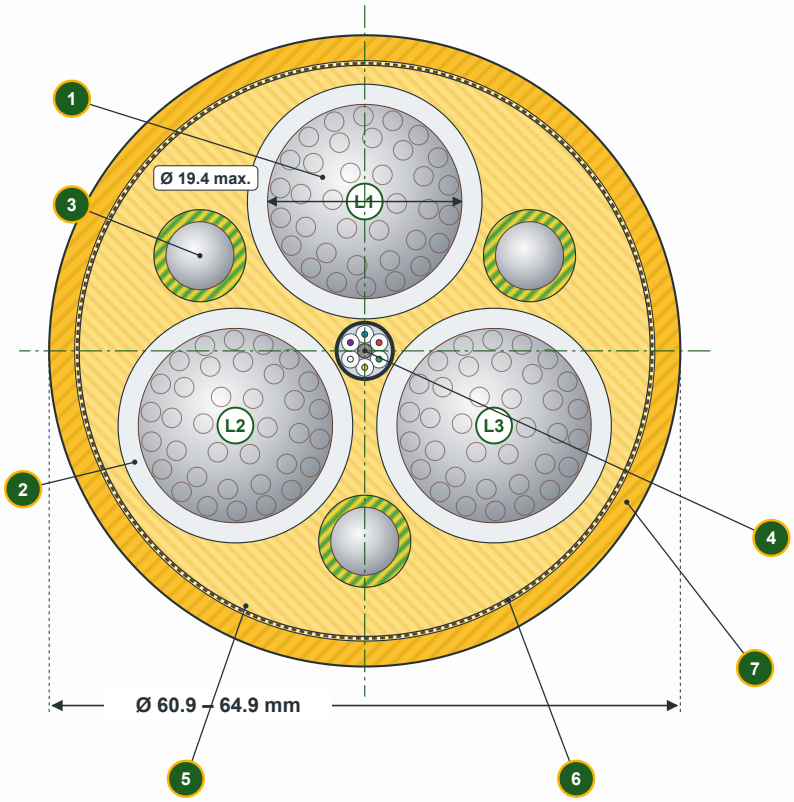
REFERENCE TYPE	FEICHUN EQUIVALENT

CORDAFLEX XPRT (N)SHTÖU 0,6/1 kV for E-RTG	FC-CFX-ER (N)SHTÖU 0,6/1 kV

Equivalent to CORDAFLEX XPRT (N)SHTÖU E-RTG designs; power versions are dimensionally identical to the standard FC-CFX-HD 3-core range.

FEICHUN CABLES

02 Construction



FEICHUN · SECTION A–A · 0.6/1 kV

FC-CFX-ER (N)SHTÖU-J + FO

Doc. No. FC-TDS-CFE-2026-617F
Ref. 3×185+3×95/3+1×(12E9)
Rev. 0 · 2026-10-10 · 1st-angle · NTS

Drawing representative of the 3×185+3×95/3+1×(12E9) size; other sizes scale proportionally.

Pos.	Element	Material
1	Phase conductor	Tinned electrolytic Cu, very finely stranded, class FS (DIN VDE 0295) / class 5 (IEC 60228)
2	Insulation	Special EPR-based compound, light-coloured cores with black printed numbers
3	Earth conductor	Split into 3 parts in the outer interstices, green-yellow insulation
4	Centre element	Profiled rubber filler, or fibre-optic element (FO versions): 6 gel-filled ETFE tubes around an FRP support, 12 × E9
5	Inner sheath	PCP-based rubber compound, yellow
6	Anti-torsion braid	Polyester yarn braid, vulcanised between inner and outer sheath
7	Outer sheath	PCP-based compound, min. 5GM5, abrasion- and tear-resistant, yellow

Design features

Item	Description
Core arrangement	3 phase cores with earth split into 3 parts in the interstices; FO element in the cable centre (FO versions)
Core identification	Light-coloured cores with black printed numbers; green-yellow earth parts
Sheath system	Double sheath with vulcanised polyester anti-torsion braid
Optical element	12 × E9/125 µm single-mode as standard; G50 / G62.5 or other fibre counts on request
Sheath colour	Yellow (standard); black on request

FEICHUN CABLE

03 Electrical, Thermal & Mechanical Data

Electrical parameters

Parameter	Value
Rated voltage U_0/U	0.6/1 kV
Max. operating voltage AC	0.7/1.2 kV
Max. operating voltage DC	0.9/1.8 kV
AC test voltage	3.5 kV, 5 min (power and control cores)
Current rating basis	DIN VDE 0298-4; laid on a surface, 30 °C ambient — apply reeling factors (§05)
Data transmission	Integrated FO element (FO versions) — EMI-immune crane automation and CCTV link

Thermal & mechanical parameters

Parameter	Value
Max. conductor temperature	+90 °C
Short-circuit temperature	+250 °C (max. 5 s)
Ambient — fixed installation	−50 °C to +80 °C
Ambient — fully flexible operation	−35 °C to +80 °C
Max. tensile load	30 N/mm² of total conductor cross-section
Torsional stress	± 50 °/m
Min. bending radius	Per DIN VDE 0298-3 — see type tables
S-type direction changes	Min. spacing 20 × D
Travel speed	Reeling: up to 240 m/min (higher on request)
Resistance	Oil (DIN EN 60811-404), ozone, UV and moisture — unrestricted outdoor use

04 Optical Fibre Data

Characteristic	G50/125 µm Multimode OM2/OM3	G62.5/125 µm Multimode OM1	E9/125 µm Single-mode OS2
Fibre type	Graded-index	Graded-index	Monomode
Core / cladding / coating Ø	50 / 125 / 250 µm	62.5 / 125 / 250 µm	9 / 125 / 250 µm
Attenuation at 850 / 1310 nm	≤ 2.8 / ≤ 0.8 dB/km	≤ 3.3 / ≤ 0.9 dB/km	— / ≤ 0.4 dB/km
Attenuation at 1550 nm	—	—	≤ 0.3 dB/km
Bandwidth at 850 / 1300 nm	≥ 400 / ≥ 1,200 MHz·km	≥ 200 / ≥ 500 MHz·km	—
Numerical aperture	0.20 ± 0.02	0.275 ± 0.02	0.14 ± 0.02
Chromatic dispersion 1310 / 1550 nm	—	—	≤ 3.5 / ≤ 18 ps/(nm·km)

Fibre counts and types per variant as stated in the type designation; other configurations on request.

FEICHUN CABLES

05 Dimensions, Weights & Ratings — 0.6/1 kV (18 variants)

Cores × cross-section mm²	FeiChun part no.	Conductor Ø max. mm	Outer diameter min. mm	Outer diameter max. mm	Min. bending radius mm	Weight approx. kg/km	Max. tensile force N	R_{20} max. Ω/km	Current rating A	Short-circuit current kA (1 s)
Power cables, 3-core with earth split in three										
3×35+3×16/3	FC-CFX-ER-001	8.4	28.7	31.7	159	1,990	3,150	0.565	162	5.01
3×50+3×25/3	FC-CFX-ER-002	10.3	34.4	37.4	187	2,810	4,500	0.393	202	7.15
3×70+3×35/3	FC-CFX-ER-003	12.0	39.7	42.7	214	3,860	6,300	0.277	250	10.01
3×95+3×50/3	FC-CFX-ER-004	14.0	44.3	47.3	237	4,950	8,550	0.210	301	13.59
3×120+3×70/3	FC-CFX-ER-005	15.8	51.0	55.0	275	6,440	10,800	0.164	352	17.16
3×150+3×70/3	FC-CFX-ER-006	17.5	53.9	57.9	290	7,500	13,500	0.132	404	21.45
3×185+3×95/3	FC-CFX-ER-007	19.4	58.9	62.9	315	8,990	16,650	0.108	461	26.46
3×240+3×120/3	FC-CFX-ER-008	22.5	67.4	71.4	357	11,940	21,600	0.0817	540	34.32
3×300+3×150/3	FC-CFX-ER-009	25.2	75.6	79.6	398	14,740	27,000	0.0654	620	42.90
Power cables with integrated fibre optics (12 × E9)										
3×35+3×16/3 +1×(12E9)	FC-CFX-ER-010	8.4	30.7	33.7	168	2,080	3,150	0.565	162	5.01
3×50+3×25/3 +1×(12E9)	FC-CFX-ER-011	10.3	36.4	39.4	197	2,900	4,500	0.393	202	7.15
3×70+3×35/3 +1×(12E9)	FC-CFX-ER-012	12.0	41.7	44.7	224	3,950	6,300	0.277	250	10.01
3×95+3×50/3 +1×(12E9)	FC-CFX-ER-013	14.0	46.3	49.3	246	5,040	8,550	0.210	301	13.59
3×120+3×70/3 +1×(12E9)	FC-CFX-ER-014	15.8	53.0	57.0	285	6,530	10,800	0.164	352	17.16
3×150+3×70/3 +1×(12E9)	FC-CFX-ER-015	17.5	55.9	59.9	300	7,590	13,500	0.132	404	21.45
3×185+3×95/3 +1×(12E9)	FC-CFX-ER-016	19.4	60.9	64.9	324	9,080	16,650	0.108	461	26.46
3×240+3×120/3 +1×(12E9)	FC-CFX-ER-017	22.5	69.4	73.4	367	12,030	21,600	0.0817	540	34.32
3×300+3×150/3 +1×(12E9)	FC-CFX-ER-018	25.2	77.6	81.6	408	14,830	27,000	0.0654	620	42.90

Current rating: nominal value for rubber / PUR cables laid on a surface at 30 °C ambient (DIN VDE 0298-4) — multiply by the factors below for reeled operation and other ambient temperatures. Special designs are manufactured to order.

Reeling factors — cylindrical drum

Layers on drum	1	2	3	4	5
Factor	0.80	0.61	0.49	0.42	0.38

Ambient temperature factors (90 °C conductor)

°C	20	25	30	35	40	45	50
Factor	1.08	1.04	1.00	0.96	0.91	0.87	0.82

06 Standards & Tests

Standard	Scope
DIN VDE 0250-814	Basis of design (LV reeling / trailing cable)
DIN VDE 0295 / IEC 60228	Conductors, class FS / 5
DIN VDE 0207-20 / -21	Insulation (EPR) and sheath (PCP) compounds
DIN VDE 0298-3 / -4	Bending radii, current ratings
DIN EN 60811-404	Oil resistance of sheath
HD 22.16 / EN 50525-1	Water resistance; general requirements
IEC 60793 / IEC 60794	Optical fibres and FO cable tests

Routine & type tests

- AC voltage test 3.5 kV on every drum
- Conductor resistance and dimensional checks
- OTDR attenuation test of every fibre (FO versions), report supplied with drum
- Reeling, reversed bending, roller bending and torsion tests (type test)
- Ozone, UV and oil resistance — unrestricted outdoor use

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

07 Installation, Marking & Delivery

Installation notes

- Drum core diameter ≥ 2 × minimum bending radius; use guide rollers sized to the same radius.
- Unwind tangentially from the delivery drum — never pull off over the flange; avoid loops and kinks.
- Keep torsion within ± 50 °/m; maintain at least 20 × D between S-type direction changes.
- Keep tensile force within the tabulated limit, including acceleration and braking peaks.
- Lay out and relax the cable before the first reeling; check tension-control settings at commissioning.
- Connect all earth conductor parts and any screens at both ends.
- FO versions: factory pre-assembly of FO connectors or pigtails is recommended — please supply connection dimensions with the order.

Sheath marking

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FEICHUN FC-CFX-ER (N)SHTÖU-J [cores × cross-section][+1×(12E9)] 0,6/1 kV [year] [serial no.] [metre mark]
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Packing & delivery

Item	Standard
Drum	Steel or fumigated wooden drums, ends sealed with heat-shrink caps
Lengths	To order, single continuous length (no joints)
Production lead time	2–3 weeks after technical confirmation
Warranty	Min. 3 years against manufacturing defects
Drum label	Type, size, length, gross/net weight, batch no., drum no.

08 Certifications & Quality

CE — LVD 2014/35/EU

Attestation No. M.2025.206.C116598 · EN 50525-1:2011+A1:2022 · UDEM International Certification · valid to 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 to 17.08.2030

FeiChun also holds ATEX (Directive 2014/34/EU) documentation verification and IECEx / VDE related approvals for designated product families. Certificate copies are available on request.

09 Trademark Notice & Intellectual Property

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