TYPE · MV RUBBER CABLE · EpN 65 | 3.6/6 kV | 2 Variants | Acc. to SRPS N.C5.364

FC-EPN65 EpN 65 3,6/6 kV

Rubber-insulated MV flexible cable of the EpN 65 type for underground use — screened EPR cores, concentric copper earth, concentric pilot and red CR sheath.

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01 Application & Product Overview

FC-EPN65 is a rubber-insulated medium voltage flexible cable of the EpN 65 type for underground mines, used mainly to supply portable MV transformers and mobile substations.

Three EPR cores with semi-conductive layers are laid up under a semi-conductive inner sheath with a concentric copper earth conductor; a separation sheath carries a concentric pilot conductor, protected by a red polychloroprene outer sheath.

Typical applications

- Mobile substations and MV distribution in underground mines
- Supply of longwall and development-face equipment via gate-end boxes
- Semi-fixed MV feeders that are relocated as the face advances
- Replacement of existing EpN 65 cables
- Underground coal mines (with approved terminations)

2 variants
Conductor range 35 – 50 mm²

3.6/6 kV
Rated voltage, AC test 11 kV

Concentric
Copper earth and pilot

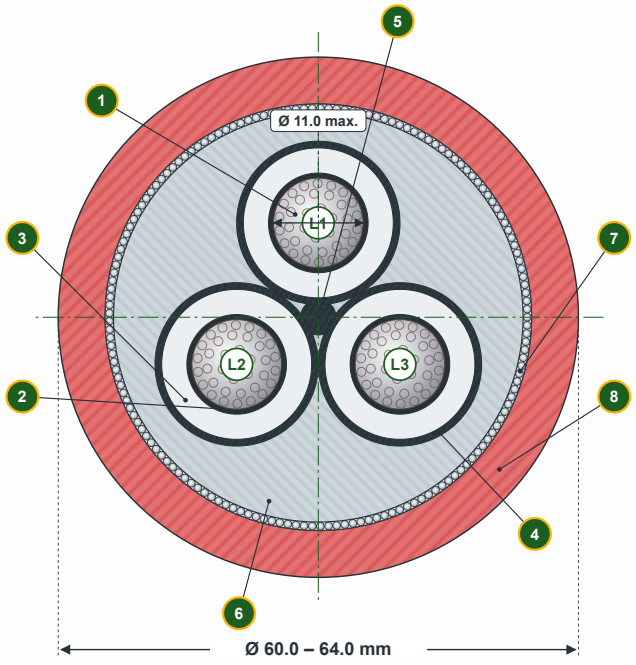
15 × D
Min. bending radius

Cross-reference

REFERENCE TYPE	FEICHUN EQUIVALENT
EPN 65 3,6/6 kV	FC-EPN65 EpN 65 3,6/6 kV

Manufactured to the EPN 65 3,6/6 kV construction.

02 Construction



FEICHUN · SECTION A–A · 3.6/6 kV

FC-EPN65 EpN 65

Doc. No. FC-TDS-E65-2026-8059
Ref. 3×50 mm²
Rev. 0 · 2026-10-12 · 1st-angle · NTS

Drawing representative of the reference size; other sizes scale proportionally.

Pos.	Element	Material
1	Conductor	Annealed copper, finely stranded, class 5 (IEC 60228)
2	Inner semi-conductive layer	Semi-conductive layer over the conductor
3	Insulation	EPR compound, 3.0 mm
4	Outer semi-conductive layer	Cold-strippable semi-conductive layer
5	Centre filler	Semi-conductive filler
6	Inner sheath	Semi-conductive rubber compound
7	Concentric earth and pilot	Concentric copper earth conductor; separation sheath; concentric pilot conductor
8	Outer sheath	Polychloroprene (CR) GP7, red

Drawing: 3×50 mm² reference size.

Construction details

Element	Description
Conductor	3 x flexible tinned copper, class 5 to IEC 60228 / SRPS N.C0.015
Conductor screen	Semi-conductive rubber layer/tape

Element	Description
Insulation	EPR rubber compound, type GI2 (SRPS N.C0.190), 3.0 mm
Insulation screen	Semi-conductive rubber layer/tape over each core
Inner sheath	Semi-conductive EPR rubber compound (type GH2, SRPS N.C0.190) over the laid-up cores
Concentric protective conductor	Tinned copper wires applied concentrically (16 mm^2 for 35 mm^2, 25 mm^2 for 50 mm^2)
Separation sheath	EPR rubber compound, with semi-conductive tape
Concentric pilot conductor	6 mm^2 tinned copper wires applied concentrically, for earth-continuity monitoring
Tapes	Rubber and textile tapes
Outer sheath	Polychloroprene (CR) heavy-duty compound, type GP7 (SRPS N.C0.190), 3.5–4.0 mm, red; oil, flame and abrasion resistant

03 Electrical, Thermal & Mechanical Data

Electrical parameters

Parameter	Value
Rated voltage U_0/U	3.6/6 kV
Max. operating voltage Um	7.2 kV
Test voltage	11 kV AC

Thermal & mechanical parameters

Parameter	Value
Max. conductor temperature	+90 °C
Max. short-circuit temperature	+250 °C (max. 5 s)
Ambient temperature, flexing	−25 °C to +40 °C
Ambient temperature, fixed	−30 °C to +40 °C

Parameter	Value
Min. bending radius	15 x D over guide sheaves and deflection rollers, when paying out on the ground and when laid in the ground
Max. tensile load on conductors	15 N/mm²
Flame retardance	IEC 60332-1-2
Sheath properties	Resistant to impact, crushing, abrasion, tearing, oils, acids and alkalis; insulation resistant to ozone, heat, water and ageing
Standard delivery lengths	250 m (35 mm²), 200 m (50 mm²)

04 Dimensions, Weights & Ratings — 3.6/6 kV (2 variants)

Type designation cores × 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)
3×35/16/6	FC-E65-001	9.2	54.0	58.0	870	4,653	1,575	0.565	137	5.00
3×50/25/6	FC-E65-002	11.0	60.0	64.0	960	5,834	2,250	0.393	170	7.15

Current rating: DIN VDE 0298-4 values for flexible rubber cables at 30 °C ambient — apply the factors below for other ambient temperatures, grouping and multi-layer laying. Bending radius: 15 × D. Tensile force: 15 N/mm² × total phase cross-section. Further sizes and special designs are manufactured to order.

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

Short-circuit rating

Permissible short-circuit current for 1 s: $I_k = 0.143$ kA/mm² × phase cross-section (EPR, 90 °C → 250 °C, tinned copper). For other durations t: $I_{k,t} = I_{k,1s} / \sqrt{t}$ (0.1 s ≤ t ≤ 5 s).

05 Standards & Tests

Standard	Scope
SRPS N.C5.364	ex JUS N.C5.364
DIN VDE 0250-813	Basis of design — flexible mining cables, medium voltage — comparable construction, NTSCGEWÖU
SRPS N.C0.015 / IEC 60228 class 5	Conductors, class 5
SRPS N.C0.190	insulation and sheath compounds
IEC 60332-1-2	Flame propagation, single cable

Routine & type tests

- AC voltage test 11 kV on every drum
- Conductor resistance and dimensional checks
- Continuity of earth, screen and control conductors
- Flame retardance (IEC 60332-1-2) and oil resistance (IEC 60811-404) of the outer sheath

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.

06 Installation, Marking & Delivery

Installation notes

- Semi-fixed installation: lay or hang the cable on supports and hooks without sharp edges; the cable may be relocated as the face or heading advances.
- Observe the minimum bending radius during installation and relocation (see table).
- Unwind tangentially from the delivery drum — never pull off over the flange; avoid loops and kinks.
- Keep tensile force within 15 N/mm² of the total conductor cross-section; support vertical runs at regular intervals.
- Connect all earth conductors and screens at both ends; connect control / monitoring conductors to the protection relay.
- Use terminations, plugs and couplers approved for the mine and suited to the rated voltage.

Sheath marking

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FEICHUN FC-EPN65 EpN 65 [size] 3,6/6 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

Item	Standard
Drum label	Type, size, length, gross/net weight, batch no., drum no.

07 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. 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 to 17.08.2030

FeiChun also holds ATEX (Directive 2014/34/EU) documentation verification and IECEx / VDE related approvals for designated product families. Mine-specific approvals are arranged with the end user or local distributor where required. Certificate copies are available on request.

08 Trademark Notice & Intellectual Property

The type designation EpN 65 refers to a published standard construction and is cited solely for technical cross-referencing. FC-EPN65 is a FeiChun product manufactured to that construction; no affiliation with any other manufacturer offering the same type is implied.

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FEICHUN CABLE