TYPE · MV SEMI-FIXED · HALOGEN-FREE | 6/10 kV | 7 Variants

SUPROMONT HF Equivalent

FC-SPM-H (N)3GHSSHCH 6/10 kV

Halogen-free, rubber-insulated MV flexible cable for semi-fixed underground use — individually screened cores, control cores, monitoring layer, steel-wire braid and red HM4 sheath.

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01 Application & Product Overview

FC-SPM-H (N)3GHSSHCH is a halogen-free, armoured medium voltage flexible cable for semi-fixed installation in underground mines — feeders to mobile substations and face equipment that are relocated as mining advances.

Three EPR cores with inner and cold-strippable outer semi-conductive layers each carry a concentric copper-wire earth screen. Three control cores fill the outer interstices; an overall monitoring layer (UEL), a halogen-free intermediate sheath, a galvanised steel-wire braid and a red halogen-free outer sheath complete the cable.

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
- Shaft and roadway installations, including vertical runs
- Underground coal and hard-rock mines (with approved terminations)

7 variants
Conductor range 35 – 185 mm²

6/10 kV
Rated voltage, AC test 17 kV

Halogen-free
Low smoke, no corrosive gases

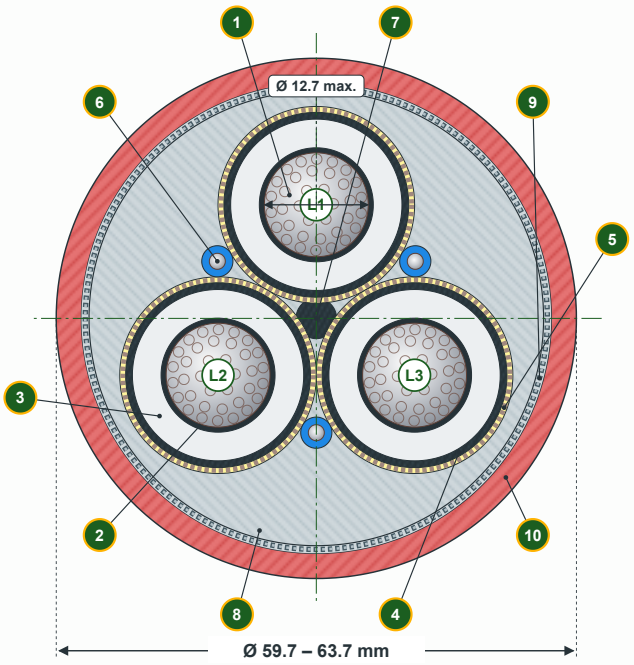
Steel braid
Mechanical protection

Cross-reference

REFERENCE TYPE	FEICHUN EQUIVALENT
SUPROMONT (N)3GHSSHCH 6/10 kV	FC-SPM-H (N)3GHSSHCH 6/10 kV

Equivalent in construction and dimensions to SUPROMONT (N)3GHSSHCH 6/10 kV.

02 Construction



FEICHUN · SECTION A–A · 6/10 kV

FC-SPM-H (N)3GHSSHCH

Doc. No. FC-TDS-SH10-2026-D195
Ref. 3×95 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 3GI3 (DIN VDE 0207-20)
4	Outer semi-conductive layer	Cold-strippable semi-conductive layer
5	Core screen / earth (E)	Concentric copper wires over each main core
6	Control cores (ST)	3 × 2.5 mm² EPR-insulated control cores in the outer interstices
7	Centre filler	Rubber filler
8	Inner sheath / monitoring layer	Halogen-free sheath with concentric copper monitoring layer (UEL)
9	Armour	Galvanised steel-wire braid
10	Outer sheath	Halogen-free, flame-retardant HM4 compound, red

Drawing: 3×95 mm² reference size.

Construction details

Element	Description
Conductor	Finely stranded plain annealed copper, class 5 to DIN EN 60228 / IEC 60228 / VDE 0295
Inner semi-conductive layer	Extruded semi-conductive rubber conductor screen
Main core insulation	EPR rubber, special compound 3GI3 to DIN VDE 0207-20
Outer semi-conductive layer	Extruded semi-conductive rubber insulation screen, cold-strippable (black)
Protective earth (screen)	Plain copper wires laid concentrically around each main core; total earth cross-section split into three equal parts (/3E) — first screen of the double-screen design
Control cores	3 × 2.5 mm^2 (ST) class 5 copper, EPR 3GI3 insulation, black with white numerals; one control core in each outer interstice
Core identification and lay-up	Main cores natural colour with black semi-conductive layer; three main cores laid up together with the three control cores
Monitoring conductor (UEL)	Semi-conductive tape and overall concentric copper wire spinning over the lay-up — second screen of the double-screen design, used for earth-leakage / sheath monitoring
Intermediate sheath	Halogen-free, flame-retardant polymer compound (HM4 type)
Armour	Braid of galvanised steel wires
Outer sheath	Halogen-free, flame-retardant, low-smoke compound HM4 to DIN VDE 0207-23, red

03 Electrical, Thermal & Mechanical Data

Electrical parameters

Parameter	Value
Rated voltage U_0/U (Um)	6/10 (12) kV AC

Thermal & mechanical parameters

Parameter	Value
Max. conductor temperature	+90 °C
Max. short-circuit temperature	+250 °C (conductor, max. 1 s)

Parameter	Value
Max. permissible operating voltage AC	6.9/12 kV
Max. permissible operating voltage DC	9/18 kV
AC test voltage	17 kV
Current ratings	At 30 °C ambient, per DIN VDE 0298-4 / manufacturer table; short-circuit ratings for 1 s

Parameter	Value
Ambient temperature, fixed installation	−40 °C to +80 °C
Ambient temperature, flexing (relocation)	+5 °C to +60 °C
Min. bending radius	6 × D fixed installation; 10 × D during relocation / flexing (D = max. outer diameter), per DIN VDE 0298-3
Max. tensile load	15 N/mm², related to the total cross-section of the main conductors
Max. torsional stress	±25 °/m
Flame retardance	DIN EN 60332-1-2 / IEC 60332-1-2
Halogen-free / corrosivity of gases	DIN EN 60754-1 / -2 / IEC 60754-1 / -2
Smoke density	DIN EN 61034-2 / IEC 61034-2 (low smoke)
Ozone and moisture resistance	Resistant; suitable for unrestricted indoor and underground mine use to DIN VDE 0118

04 Dimensions, Weights & Ratings — 6/10 kV (7 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+3×16/3E+3×2.5ST+UEL	FC-SH10-001	7.6	46.5	50.5	505	4,390	1,575	0.554	162	5.00

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)
3×50+3×25/3E+3×2.5ST+UEL	FC-SH10-002	9.1	49.7	53.7	537	5,120	2,250	0.386	202	7.15
3×70+3×35/3E+3×2.5ST+UEL	FC-SH10-003	10.8	54.3	58.3	583	6,330	3,150	0.272	250	10.01
3×95+3×50/3E+3×2.5ST+UEL	FC-SH10-004	12.7	59.7	63.7	637	7,530	4,275	0.206	301	13.58
3×120+3×70/3E+3×2.5ST+UEL	FC-SH10-005	14.3	63.6	67.6	676	8,780	5,400	0.161	352	17.16
3×150+3×70/3E+3×2.5ST+UEL	FC-SH10-006	16.0	68.6	72.6	726	10,230	6,750	0.129	404	21.45
3×185+3×120/3E+3×2.5ST+UEL	FC-SH10-007	17.7	72.3	77.3	773	11,760	8,325	0.106	461	26.45

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: 10 × D when moved, 6 × D fixed. 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
DIN VDE 0250-605	design basis
DIN EN 60228 / IEC 60228 / VDE 0295	Conductors, class 5 — class 5, plain copper
DIN VDE 0207-20	Insulating compound 3GI3
DIN VDE 0207-23	HM4
DIN VDE 0118	Electrical installations in underground mining — underground mines
DIN VDE 0298-3	Use of cables — bending radii, tensile load

Routine & type tests

- AC voltage test 17 kV on every drum
- Conductor resistance and dimensional checks
- Continuity of earth, screen and control conductors
- Partial discharge test on main cores
- Halogen-free verification (EN 60754-1/-2) and smoke density (EN 61034-2)
- 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.

Standard	Scope
DIN VDE 0298-4	Current-carrying capacity
DIN EN 60332-1-2 / IEC 60332-1-2	Flame propagation, single cable
DIN EN 60754-1 / -2 / IEC 60754-1 / -2	
DIN EN 61034-2 / IEC 61034-2	

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-SPM-H (N)3GHSSHCH [size]
6/10 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.

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. 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. 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

SUPROMONT® and the type designation SUPROMONT (N)3GHSSHCH 6/10 kV are cited to identify the reference product of Prysmian Group, the trademark owner. They are used solely for technical cross-referencing; FeiChun Cables has no affiliation with, and is not endorsed by, the trademark owner. FC-SPM-H is a FeiChun product designed to equivalent functional performance.

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FEICHUN CABLE