MV Cable for Trailing Applications | VDE 0250-813

(N)TSCGEWOEU-LED 3,6/6 kV

Self-Powered LED Illuminated Upgrade

Cold Flexible to −50 °C | Shovels | Draglines | Mining

FC-EMH™ SELF-POWERED | PLUG-AND-PLAY | NO DC SUPPLY

FEICHUN®

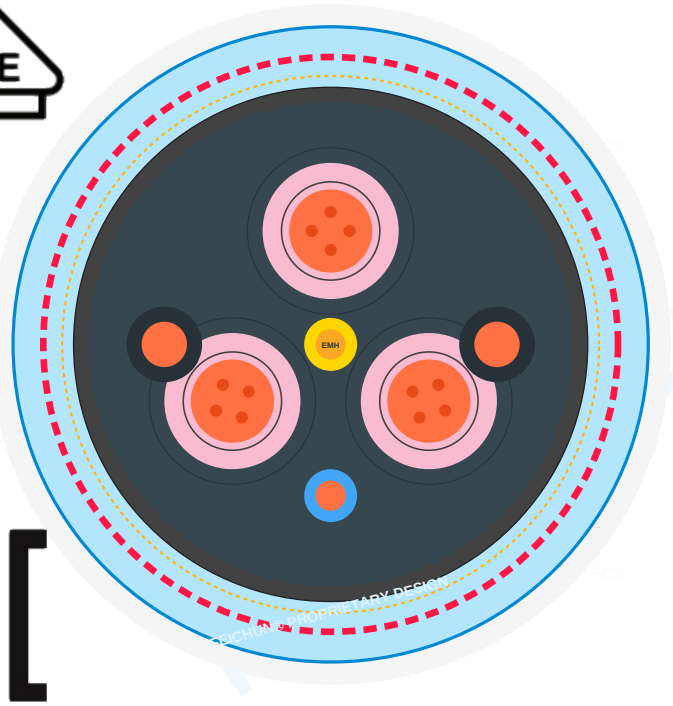
(N)TSCGEWOEU-LED

3,6/6 (7,2) kV

LED VISIBILITY UPGRADE

MV power supply cable for large mobile equipment in mines. Trailing cable for use with shovels and draglines in trailing and reeling applications. Extremely robust outer sheath, fully flexible down to −50 °C. Now with FeiChun® integrated self-powered LED illumination.

VDE 0250-813 · GOST-R CERTIFIED · 3,6/6 kV · −50 °C COLD FLEXIBLE · FC-EMH™ SELF-POWERED LED



- Translucent FR-TPU Sheath (FC-TPU™ X-Series)
- Integrated LED Strip (Warning Red 620–630 nm)
- FC-ASB™ Aramid Stress-Relief Braid
- Inner Sheath (EPR compound 5GM3)
- Outer SC Layer (NBR easy-strip)
- EPR Insulation (compound 3GI3)
- Tinned Copper Conductors (Class 5)
- PE Conductors (SC special rubber)
- Pilot Conductor (EPR insulated)
- Aramid Rope Centre + FC-EMH™ Module

Cable Design — LED Upgrade (Inside → Out)

- **Conductors** — Finely stranded copper, tinned, Class 5. PE: Class 5 with SC special rubber.
- **Inner SC Layer** — Semi-conductive EPR. **Insulation** — EPR rubber, compound 3GI3. **Outer SC** — SC NBR easy-strip.
- **Pilot Conductor** — Copper, tinned Cl. 5; EPR insulation.
- **Core Arrangement** — Cores laid around conductive central support element with aramid rope centre.
- **Inner Sheath** — EPR rubber, compound 5GM3.
- **FC-EMH™ Module** — FeiChun® EM induction pickup coil wound around aramid centre support.
- **LED Strip** — Warning red (620–630 nm), silicone encapsulated. **FC-ASB™** aramid stress braid.
- **Outer Sheath** — **Translucent FR-TPU (FC-TPU™ X-Series, FC-2026-TPU-X5). Cold-flex to −50 °C.**

FEICHUN PROPRIETARY FC-TPU™ X-Series (Extreme Cold) | Formula FC-2026-TPU-X5 | −50 °C | FeiChun Exclusive

FEICHUN SPECIAL CABLES | (N)TSCGEWOEU-LED | FEICHUN® | 3,6/6 kV MV Trailing Cable | VDE 0250-813

1 Standards / Approvals & Operating Parameters

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Based on	DIN VDE 0250-813
Certifications	GOST-R/-K/-B Fire Certificate
Conductor	DIN EN 60228 / IEC 60228 / VDE 0295
Flame Retardant	DIN EN 60332-1-2 / IEC 60332-1-2
Oil / Ozone / UV	Resistant / Resistant / Resistant
Rated Voltage U_0/U	3,6/6 (7,2) kV | Test: 11 kV
Conductor Temp.	90 °C (250 °C short-circuit, 5 sec)
Ambient (Fixed)	−50 °C to +80 °C
Ambient (Flexible)	−50 °C to +60 °C
Bending Radius	6×D fixed | 10×D flexible | 20×D S-type
Tensile Strength	25 N/mm² | Torsional: ±100 °/m

2 Cable Properties — Physical

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Construction	FeiChun® Part No.	Cond. Dia. mm	Cable Dia. (min) mm	Cable Dia. (max) mm	Weight kg/km	LED Power
3×16+2×10+1×10	FC-TSCG-LED-016A	5	44.5	49.0	2 545	FC-EMH™
3×16+2×16+1×16	FC-TSCG-LED-016B	5	44.0	48.5	2 766	FC-EMH™
3×25+2×16+1×16	FC-TSCG-LED-025	6.2	47.5	52.0	3 125	FC-EMH™
3×35+2×16+1×16	FC-TSCG-LED-035	7.5	51.0	55.0	3 674	FC-EMH™
3×50+2×16+1×16	FC-TSCG-LED-050	9	54.0	58.5	4 368	FC-EMH™
3×70+2×25+1×16	FC-TSCG-LED-070	10.6	60.0	65.0	5 622	FC-EMH™
3×95+2×25+1×16	FC-TSCG-LED-095	12.6	64.0	69.0	6 563	FC-EMH™
3×95+3×50/3	FC-TSCG-LED-095T	12.6	64.0	69.0	6 496	FC-EMH™
3×120+2×35+1×16	FC-TSCG-LED-120	14.8	71.5	76.5	8 299	FC-EMH™
3×150+2×35+1×16	FC-TSCG-LED-150	16	76.0	80.0	9 471	FC-EMH™
3×185+2×50+1×16	FC-TSCG-LED-185	17.7	79.5	84.5	11 150	FC-EMH™
3×240+2×70+1×16	FC-TSCG-LED-240	20.3	87.5	92.5	14 132	FC-EMH™
3×300+2×95+1×16	FC-TSCG-LED-300	31.3	91.5	97.0	16 884	FC-EMH™

Cable diameters/weights include FeiChun® LED system. Weights approx. 10–14 % above standard. All variants FC-EMH™ induction harvesting (≥ 3,6 kV).

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(N)TSCGEWOEU-LED | FEICHUN® | 3,6/6 kV MV Trailing Cable | VDE 0250-813

3 Cable Properties — Electrical / Mechanical

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Construction	Max. Tensile N	Capacit. nF/km	Induct. mH/km	Resist. 20°C Ω/km	Current Cap. A
3×16+2×10+1×10	1 200	200	0.39	1.24	99
3×16+2×16+1×16	1 200	200	0.39	1.24	99
3×25+2×16+1×16	1 875	230	0.36	0.795	131
3×35+2×16+1×16	2 625	260	0.34	0.565	162
3×50+2×16+1×16	3 750	290	0.32	0.393	202
3×70+2×25+1×16	5 250	340	0.30	0.277	250
3×95+2×25+1×16	7 125	370	0.29	0.210	301
3×95+3×50/3	7 125	370	0.29	0.210	301
3×120+2×35+1×16	9 000	410	0.28	0.164	352
3×150+2×35+1×16	11 250	440	0.27	0.132	404
3×185+2×50+1×16	13 875	480	0.27	0.108	461
3×240+2×70+1×16	18 000	540	0.26	0.0817	540
3×300+2×95+1×16	22 500	780	0.24	0.0654	620

Current capacity acc. VDE 0298-4, Tab. 15, surface at 30 °C.

4 FeiChun® FC-EMH™ LED Technology + FC-SPM™ Surge Protection

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FEICHUN PROPRIETARY FC-EMH™ X-Variant | Cold-Start to −50 °C | Aramid-Centre Wound | FeiChun Exclusive

- **Extreme Cold Start:** FC-EMH™ X-variant with cold-rated capacitors and LDO regulators to −50 °C. LED activates reliably in Siberian/Canadian/Nordic winter mining.
- **Aramid-Centre Coil:** Pickup coil wound around existing aramid rope centre support, utilising cable geometry without modifying the proven core arrangement.
- **Galvanic Isolation:** Zero galvanic connection between LED and 6 kV conductors.
- **Plug-and-Play:** No external DC supply. No switchgear modification. Direct drop-in replacement.

Layer	Component	Function
1	**Magnetic Saturation**	Caps energy at source.
2	**TVS Diodes**	Picosecond clamping of shovel/dragline motor inrush.
3	**Zener / LDO**	12/24 V DC. Cold-rated to −50 °C.
4	**PTC Resettable**	Auto-resets. Zero maintenance.

FEICHUN SPECIAL CABLES

5 Key Advantages & Operational Benefits

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1 Extreme Cold LED Illumination (−50 °C)

The only illuminated MV trailing cable rated for −50 °C. FC-TPU™ X-Series maintains translucency at extreme sub-zero. FC-EMH™ cold-start electronics activate LED reliably in Siberian, Canadian, and Nordic conditions.

2 Plug-and-Play for Shovels & Draglines

No external DC. No switchgear changes. Direct drop-in replacement. Disconnect → connect → energise → glow.

3 Cable Route Visibility in Harsh Conditions

Continuous red glow across dragline tail-ropes and shovel benches — critical during Arctic darkness, blizzards, and dust storms.

4 VDE 0250-813 + GOST-R Compliant

Full DIN VDE and GOST-R/-K/-B certification for European, Russian, Kazakh, and CIS markets.

5 FC-TPU™ X-Series Extreme Durability

Cold-grade translucent sheath. 3–5× abrasion resistance. Oil, ozone, UV resistant.

6 Maintenance-Free FC-SPM™

Four-layer cold-rated surge protection. PTC auto-reset. Zero maintenance.

7 Live Cable Indication

Immediate visual energisation status for isolation and LOTO safety across large open-cut sites.

8 Widest Configuration Range

13 standard constructions from 3×16 to 3×300 mm². FeiChun® part numbers.

FEICHUN SPECIAL CABLES

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