ANHUI FEICHUN SPECIAL CABLE CO., LTD.

安徽飞纯特种电缆有限公司 | SPECIALIST REELING & INDUSTRIAL CABLE MANUFACTURER

PRODUCT SPECIFICATION — REELABLE POWER & CONTROL CABLE

(N)SHTOU-J

Reelable Control & Connection Cable | Rubber-Sheathed, Tinned Copper, Heavy-Duty

DOCUMENT No. FC-DS-NSHTOU-J-2025-001
REVISION Rev. A | **DATE** 2025-06-15
CLASSIFICATION TECHNICAL DATA SHEET
STANDARD DIN VDE 0250-814

★ FEATURED SPECIFICATION
3×120 + 3G70/3
0.6/1 kV — Rated Voltage

FEATURED SPECIFICATION — 3×120+3G70/3

PRODUCT PARAMETERS	
No. of cores × Cross-section	3 × 120 + 3 × 70/3 mm²
Configuration	3 main cores + 3 split earth conductors
Rated Voltage U_0/U	0.6 / 1 kV
Approx. Outer Diameter	53.0 – 57.0 mm
Copper Weight	4,176 kg/km
Approx. Total Weight	6,250 kg/km
AWG Equivalent (main)	250 MCM ≈ 120 mm²
AWG Equivalent (earth)	2/0 AWG ≈ 70 mm²



Cross-section (illustrative): 3 main + 3 earth in interstices

ELECTRICAL RATINGS

VOLTAGE PARAMETERS	
Nominal Voltage AC U_0/U	600 / 1000 V
Max. AC conductor/earth	700 V
Max. AC 3φ conductor/conductor	1200 V
Max. DC conductor/earth	900 V
Max. DC conductor/conductor	1800 V
Test Voltage core/core	2500 V

CABLE CONSTRUCTION

- **Conductor:** Copper, tinned, finely stranded acc. to DIN VDE 0295 Class 5 / IEC 60228 Class 5
- **Core insulation:** Ethylene Propylene Rubber (EPR) acc. to DIN VDE 0207-20, compound type 3GI3
- **Core identification:** acc. to DIN VDE 0293-308;
  3–5 core(s): colour coded
  7–50 core(s): black cores with consecutive white digits
- **Protective conductor:** G = GN-YE in outer layer
- **Earth conductor design:** 3G70/3 configuration — 3 conductors each ≈ 23.3 mm², symmetrically placed in main core interstices for improved balance and flexibility during reeling
- **Lay-up:** Cores stranded in layers with optimal lay lengths
- **Textile bandage:** Applied over stranded core assembly
- **Inner sheath:** Rubber (Chloroprene, PCP)
- **Anti-torsion layer:** Braided protective layer between sheaths to prevent corkscrew effect under high tensile loads
- **Outer sheath:** Rubber acc. to DIN VDE 0207-21, compound type 5GM3, Chloroprene (PCP), dual-layer structure
- **Sheath colour:** Black

RESISTANCE & PROPERTIES

Oil-resistant	Ozone-resistant
Solvent-resistant	Petrol-resistant
Acid / Chemical-resistant	Grease-resistant
Abrasion-resistant	Outdoor use suitable

TESTS & CERTIFICATIONS

- **Flame-retardant** acc. to DIN VDE 0482-332-1-2 / DIN EN 60332-1-2 / IEC 60332-1-2

CURRENT CARRYING CAPACITY

BASIC AMPACITY — FREE AIR, SINGLE CABLE

Nominal current capacity	335 – 348 A
Condition	3-phase balanced load, not on reel

DERATING FACTORS — REEL INSTALLATION

WINDING LAYERS	DERATING FACTOR	EFFECTIVE AMPACITY (A)
Free air (1 layer)	1.00	≈ 340
2 layers	0.61	≈ 207
3 layers	0.49	≈ 166
4 layers	0.42	≈ 142

AMBIENT TEMPERATURE CORRECTION

Reference ambient temperature: **30 °C**. Apply the following correction factors:

30 °C	35 °C	40 °C	45 °C	50 °C	55 °C
1.00	0.95	0.91	0.85	0.80	0.74

FAULT & LOSS PARAMETERS

SHORT-CIRCUIT & RESISTANCE DATA	
Max. short-circuit current (120 mm², 1s)	≈ 17.16 kA
DC resistance R_{20} (tinned Cu, 120 mm²)	≈ 0.153 Ω/km
Bundled cable derating	× 0.70 – 0.85

For long-distance reeling applications, voltage drop must be strictly verified. Multiple cables installed in bundles or on cable trays require additional derating per bundling coefficient.

TEMPERATURE RANGE

Flexible installation	-25 °C to +80 °C
Fixed installation	-40 °C to +80 °C

MECHANICAL PARAMETERS

BENDING RADIUS & TENSILE STRESS	
Tensile stress (installation/operation)	15 N/mm²
Permissible continuous pull	20 N/mm² (on main conductor)
Min. bending radius — flexible ≤ 20 mm	5 × Outer-Ø
Min. bending radius — flexible > 20 mm	6 × Outer-Ø
Min. bending radius — fixed	6 × d
Min. bending radius — reel/guided	10 × d - 12.5 × d

REELING OPERATION PARAMETERS

Max. acceleration	0.4 m/s²
Max. velocity	120 m/min
Operation mode	Horizontal reeling

- **Oil-resistant** acc. to DIN VDE 0473-811-404 / DIN EN 60811-404 / IEC 60811-404
- **Certification:** EAC (Eurasian Conformity)

APPLICATION

Reeling cables are used for applications involving **high mechanical stress**, especially where frequent winding and unwinding occurs with simultaneous tensile and torsional loads. Typical applications include construction machinery, conveying and lifting equipment, and crane systems. Suitable for use as a robust, weather-resistant cable in the roughest operations such as mobile transport equipment, railway engines, and mining installations. Approved for installation in dry, damp, and wet rooms as well as outdoors.

⚠ IMPORTANT NOTES

The conductor is metrically (mm²) constructed; AWG numbers are approximated for reference only. For reeling applications: (1) Assembly instructions must be observed. (2) For special applications, contact us and complete the reelable cable specification form.

MATERIAL & CONSTRUCTION SUMMARY

LAYER	MATERIAL / STANDARD
Conductor	Tinned Cu, finely stranded — VDE 0295 Cl. 5
Core insulation	EPR rubber — VDE 0207-20 (3GI3)
Core identification	VDE 0293-308, colour / white digits
Bandage	Textile
Inner sheath	Chloroprene rubber (PCP)
Anti-torsion	Braided protective layer
Outer sheath	Chloroprene rubber (PCP) — VDE 0207-21 (5GM3)
Colour	■ Black

APPLICABLE STANDARDS

- DIN VDE 0250-814 — Reelable cables
- DIN VDE 0295 Cl. 5 / IEC 60228 Cl. 5 — Conductor
- DIN VDE 0207-20 — Insulation (3GI3)
- DIN VDE 0207-21 — Sheath (5GM3)
- DIN VDE 0293-308 — Core identification
- IEC 60332-1-2 — Flame retardancy
- IEC 60811-404 — Oil resistance

ORDER REFERENCE

For inquiries and orders, please reference: **(N)SHTOU-J 3×120+3G70/3 0.6/1 kV**
Contact: **Tech@feichuncables.com** | Technical support available for customre el configurations.

All data are approximate and subject to normal manufacturing tolerances.
The company reserves the right to modify specifications without prior notice.