REPLACEMENT FOR TF KABLE NSHTÖU-J | 0.6/1 kV | NSHTÖU-J, DIN VDE 0250-814 | PCP rubber | article datasheet

# FC-NSHTÖU-J 3×95+3G16 0.6/1 kV

Reeling Cable for Cranes and Conveyors – polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black. FeiChun replacement for TF Kable NSHTÖU-J: construction, dimensions, weight, current rating, standards and installation guidance.

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## 01 Application and Product Overview

FC-NSHTÖU-J 3×95+3G16 is a reeling Cable for Cranes and Conveyors rated 0.6/1 kV and the FeiChun replacement for TF Kable NSHTÖU-J 3×95+3G16. It has an outer diameter of 40.5 – 43.0 mm, weighs about 4,080 kg/km and carries 302 A in free air at 30 °C. The series covers 35 – 240 mm².

### Design

Three power cores and three split protective-earth conductors in the interstices give a round, balanced cross-section that winds evenly on a reel.

### Typical applications

- Cable reels of harbour and container cranes, stacker-reclaimers and conveyor trippers
- Mobile power supply of rail-mounted machines with spring-driven or motor-driven reels
- Combined power and signal connections of mobile equipment in ports, mines and tunnels
- Outdoor service with exposure to UV radiation, ozone, oil and seawater spray

| 3×95+3G16 | 0.6/1 kV | 302 A | Ø 43.0 mm |
|---|---|---|---|
| Cross-section | Rated voltage $U_0/U$ | Current at 30 °C | Outer dimension, max |

### Key features

- Fine-wire class 5 tinned or bare copper conductors to IEC 60228
- EPR rubber compound 3GI3 to DIN VDE 0207-20 insulation
- Travel speed up to 120 m/min, torsion up to ±25 °/m
- Flame-retardant to IEC 60332-1-2; oil, ozone and UV resistant

### Replacement reference

REFERENCE PRODUCT
**TF Kable NSHTÖU-J 3×95+3G16**
NSHTÖU-J, DIN VDE 0250-814

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FEICHUN REPLACEMENT
**FC-NSHTÖU-J 3×95+3G16 0.6/1 kV**
Reeling Cable for Cranes and Conveyors

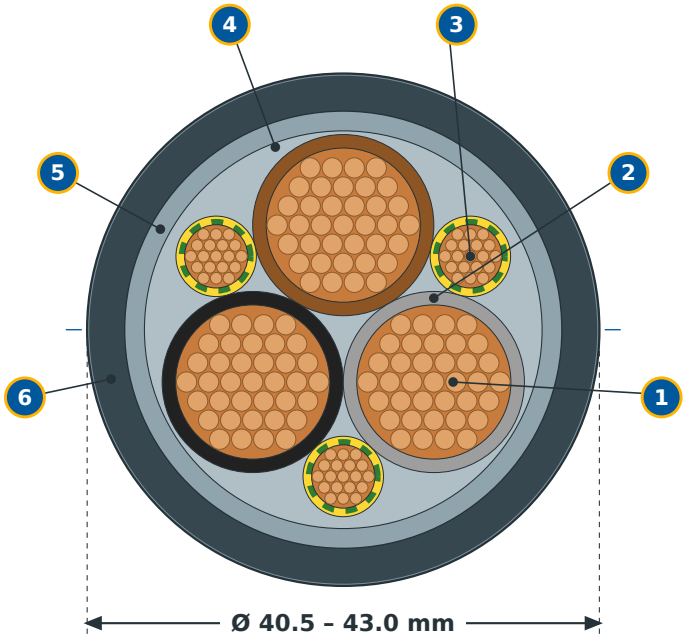
The FeiChun cable has the same core configuration, voltage rating and field of application as the reference product. Dimensions and weights are FeiChun design values; compare them with reels, guides and glands before direct replacement.

## 02 Construction

**FEICHUN · CROSS-SECTION A-A · 0.6/1 kV**

**FC-NSHTÖU-J**

Sample size 3×95+3G16 · Rev 0 · Illustrative, not to scale




| No. | Component | Material |
|---|---|---|
| 1 | Conductor | Fine-wire copper, class 5 to IEC 60228 |
| 2 | Insulation | EPR rubber compound 3GI3 to DIN VDE 0207-20 |
| 3 | Protective conductor | Green-yellow insulated copper |
| 4 | Filler and anti-twist braid | Rubber compound, polyester braid |
| 5 | Inner sheath | Rubber or elastomer compound |
| 6 | Outer sheath | Polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black |

The drawing shows 3×95+3G16. Other sizes have the same construction with scaled dimensions.

### Construction details

| | |
|---|---|
| **Conductor** | Fine-wire tinned or bare copper, class 5 to IEC 60228 / DIN VDE 0295 |
| **Insulation** | EPR rubber compound 3GI3 to DIN VDE 0207-20 |
| **Protective conductor** | Split into three parts in the interstices, green-yellow |
| **Core identification** | Colour coded to HD 308 / DIN VDE 0293 |
| **Inner sheath** | Rubber or elastomer compound |
| **Outer sheath** | Polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black |

### Sheath material

Polychloroprene (PCP/CR) rubber 5GM5 is the classic heavy-duty sheath of DIN VDE 0250 cables: flame-retardant, resistant to oil, weather, ozone and UV radiation, and elastic under repeated bending.

## 03 Electrical, Thermal and Mechanical Data

### Electrical data

| | |
|---|---|
| **Rated voltage $U_0/U$** | 0.6/1 kV AC |
| **Test voltage** | 3.5 kV AC, 5 min |
| **Current-carrying capacity** | DIN VDE 0298-4, 30 °C ambient; see table |
| **Conductor resistance** | Maximum at 20 °C, class 5 to IEC 60228 |

### Thermal and mechanical data

| | |
|---|---|
| **Maximum conductor temperature** | +90 °C |
| **Short-circuit temperature** | +250 °C |
| **Ambient temperature, fixed** | -40 ... +80 °C |
| **Ambient temperature, moving** | -25 ... +80 °C |
| **Minimum bending radius, moving** | See table (7.5 × D) |
| **Maximum tensile load** | 20 N/mm² of copper cross-section of the power cores |
| **Maximum travel speed** | 120 m/min |
| **Maximum torsion** | ±25 °/m |
| **Flame propagation** | IEC 60332-1-2 |
| **Halogen-free sheath** | No |
| **Oil, ozone and UV resistance** | Resistant |

## 04 Dimensions, Weights and Ratings

The highlighted row is 3×95+3G16; the adjacent sizes of the series are shown for comparison.

| Type designation | Article no. | Conductor Ø max mm | Outer Ø min mm | Outer Ø max mm | Min. bend radius mm | Weight approx. kg/km | Max. pull N | $R_{20}$ max Ω/km | Rated current A | $I_k$ (1 s) kA |
|---|---|---|---|---|---|---|---|---|---|---|
| 3×70+3G16 | FC-TF0900-3703G16 | 10.8 | 36.5 | 39.0 | 292 | 3,230 | 4,200 | 0.272 | 250 | 10.01 |
| **3×95+3G16** | **FC-TF0900-3953G16** | **12.6** | **40.5** | **43.0** | **322** | **4,080** | **5,700** | **0.206** | **302** | **13.59** |
| 3×120+3G25 | FC-TF0900-31203G25 | 14.2 | 45.0 | 48.0 | 360 | 5,210 | 7,200 | 0.161 | 350 | 17.16 |

Current-carrying capacity: design values to DIN VDE 0298-4, free air, 30 °C ambient. Pull force = 20 N/mm² × copper cross-section of the power cores. Dimensions and weights are nominal design values within manufacturing tolerances.

### Ambient temperature factors

| °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

$I_k$ = 0.143 kA/mm² × conductor cross-section for 1 s; for duration t: $I_{k,t} = I_{k,1s} / \sqrt{t}$.

## 05 Reel Design Data

Rated current for the number of layers on the reel (DIN VDE 0298-4 factors 0.80 / 0.61 / 0.49 / 0.41) and the minimum reel core diameter (2 × bending radius).

| Type designation | Outer Ø max, mm | Min. reel core Ø, mm | Copper, kg/km | 1 layer, A | 2 layers, A | 3 layers, A | 4 layers, A |
|---|---|---|---|---|---|---|---|
| 3×70+3G16 | 39.0 | 584 | 2,290 | 200 | 152 | 122 | 102 |
| **3×95+3G16** | **43.0** | **644** | **2,960** | **242** | **184** | **148** | **124** |
| 3×120+3G25 | 48.0 | 720 | 3,870 | 280 | 214 | 172 | 144 |

## 06 Selection Guide

**Typical use:** At 3×95+3G16 this size carries main travel and hoist drives, larger pumps and machine feeders up to about 164 kW.

At 400 V and cos φ 0.85, 3×95+3G16 supplies a three-phase load of about 164 kW at 30 °C in free air.

At 690 V and cos φ 0.85, 3×95+3G16 supplies a three-phase load of about 282 kW at 30 °C in free air.

For comparison: 3×70+3G16 has 39.0 mm, 3,230 kg/km and 250 A; 3×120+3G25 has 48.0 mm, 5,210 kg/km and 350 A. Choose the smallest size whose current, after the temperature and reel-layer factors, covers the load.

**Example.** A circuit carries 241 A at 40 °C ambient. Required table current = 241 / 0.91 = 265 A, so 3×95+3G16 (302 A) is suitable.

On a reel with 2,500 mm flange diameter, 1,000 mm traverse and 644 mm core, about 2,115 m of 3×95+3G16 can be wound (indicative).

## 07 Standards and Testing

| Standard | Scope |
|---|---|
| **IEC 60228 / DIN VDE 0295** | Conductors, class 5 |
| **DIN VDE 0298-3** | Bending radii and tensile loads |
| **DIN VDE 0298-4** | Current-carrying capacity |
| **IEC 60332-1-2** | Flame propagation, single cable |
| **DIN VDE 0250-814** | Design reference for the construction |
| **IEC 60811-404** | Mineral oil resistance |

### Routine and type tests

- AC voltage test on every delivery length: 3.5 kV, 5 min
- Conductor resistance, dimensions and insulation thickness
- Continuity of all conductors
- Flame propagation, IEC 60332-1-2 (type test)

**Test documentation:** every delivery comes with a test certificate from FeiChun's own laboratory; third-party witnessed tests can be arranged at the buyer's cost.

## 08 Installation, Marking and Delivery

### Installation guidance

- Unwind the cable tangentially from the drum; avoid loops, kinks and pulling over the drum flange.
- Keep the bending radius and tensile load within the values in this datasheet.
- Use a reel core diameter of at least twice the minimum bending radius; fit a guide so that turns do not cross.
- Before first operation, let the cable relax at full length to release torsion from transport.
- Connect the protective conductor at both ends before the other cores.

### Sheath marking

```
FEICHUN FC-NSHTÖU-J 3×95+3G16 0.6/1 kV [year] [metre mark]
```

### Packing and delivery

| | |
|---|---|
| **Packing** | Steel or fumigated wooden drums; cable ends sealed |
| **Delivery length** | As ordered, in one continuous length |
| **Lead time** | 2–3 weeks after technical approval |
| **Warranty** | 1 year, covering failures not caused by human factors |
| **Terms** | FCA buyer's nominated forwarder's warehouse in China (Incoterms 2020); prices subject to LME copper |

**Order example: FC-NSHTÖU-J 3×95+3G16 0.6/1 kV** – replacement for TF Kable NSHTÖU-J 3×95+3G16, 500 m on one drum. State type, cross-section, voltage, length per piece and installation conditions when requesting a quotation.

## 09 Certification and Quality

FeiChun holds CE (Low Voltage Directive), EAC and UKCA certificates and an ATEX documentation verification for defined product groups. Whether a certificate scope covers this construction is confirmed per project. All cable is routine-tested over 100 % of the delivered length.

## 10 Related Datasheets

This datasheet in Russian: FC-NSHTÖU-J 3×95+3G16 0.6/1 kV

- FC-NSHTÖU-J 3×70+3G16 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 3×120+3G25 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 3×50+3G10 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 3×150+3G25 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 3G1.5 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 4G1.5 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 5G1.5 0.6/1 kV – replacement for TF Kable NSHTÖU-J
- FC-NSHTÖU-J 7G1.5 0.6/1 kV – replacement for TF Kable NSHTÖU-J

Library overview: FeiChun replacements for TF Kable

### Frequently asked questions

**Can FC-NSHTÖU-J replace TF Kable NSHTÖU-J 3×95+3G16?**

Yes. It is designed with the same core configuration, voltage rating and field of application. Compare the outer diameter, bending radius and weight with your reel, guides or glands before ordering; FeiChun confirms suitability on request.

### What are the outer diameter and minimum bending radius of 3×95+3G16?

Outer diameter 40.5 – 43.0 mm; minimum bending radius in moving operation 322 mm (7.5 × D).

### What current can 3×95+3G16 carry?

302 A in free air at 30 °C ambient. Apply the temperature factors in section 04 and the layer factors when wound on a reel.

### Is the cable halogen-free?

No. The PCP rubber sheath contains halogen; a halogen-free PUR version can be offered.

## 11 Trademark Notice and Intellectual Property

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### Document control

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