DIN VDE 0250-812 · HEAVY RUBBER-SHEATHED FLEXIBLE CABLE | 0.6/1 kV | 8 sizes | CR rubber | TINNED COPPER | SCREENED

# NSSHCöu 3×+3E 0.6/1 kV

Heavy Rubber-Sheathed Flexible Cable 0.6/1 kV – 3 power cores + 3 split PE conductors. Polychloroprene rubber sheath. Complete technical data sheet: construction, dimensions, weights, current ratings, voltage drop and installation guidance for 8 sizes.

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## 01 Application and Product Overview

NSSHCöu is the VDE designation of the heavy rubber-sheathed flexible cable (Gummischlauchleitung) for 0.6/1 kV. EPR-insulated cores of fine-wire class 5 copper are stranded together, bedded in a rubber inner sheath and protected by a thick, oil-resistant polychloroprene outer sheath that withstands crushing, abrasion and repeated bending. It is the established connection cable for mobile machines, portable switchgear and heavy tools on building sites, in quarries and in mines.

### Design

The cores are insulated with a cross-linked EPR compound of type 3GI3, which permits a conductor temperature of 90 °C, and are stranded in layers with a short lay length. A rubber inner sheath fills the interstices and gives the stranded core a round, stable shape. The outer sheath is a polychloroprene compound of type 5GM5 to DIN VDE 0207-21. In the VDE designation the letters ö and u stand for oil resistance and flame retardancy; the suffix J marks a version with a green-yellow protective core, O a version without. In this datasheet J corresponds to the “G” configurations and O to the “×” configurations.

### Typical applications

- Mobile switchgear, site distribution boards and portable generators on building sites and in quarries
- Feeder cables for electric tools, concrete pumps, mixers, crushers and conveyor drives that are moved regularly
- Underground and open-cast mining equipment that needs a robust connection cable of moderate length
- Cranes, hoists and loading equipment where the cable is dragged, stepped on or run over
- Machine tools and switch cabinets in dry, damp and wet areas, indoors and outdoors
- Converter-fed drives where the screened design limits electromagnetic interference
- Battery and DC-motor connections of industrial trucks and mining vehicles
- Replacement and extension of existing NSSHöu cabling in plants built to DIN VDE 0250-812

| 8 sizes | 0.6/1 kV | +90 °C | CR rubber |
|---|---|---|---|
| Cross-section 25 – 185 mm² | Rated voltage $U_0/U$ | Maximum conductor temperature | Sheath: CR rubber |

### Key features

- Thick rubber double sheath (inner and outer) for high resistance to crushing, impact and abrasion
- EPR insulation rated for 90 °C at the conductor; short-circuit temperature 250 °C
- Oil-resistant to DIN EN 60811-404 and flame-retardant to IEC 60332-1-2
- Fine-wire class 5 conductors for flexibility and easy termination
- Suitable for outdoor use: resistant to weather, ozone and UV radiation
- Cores identified to DIN VDE 0293-308; green-yellow PE core in the J versions
- 8 sizes from 25 to 185 mm²; weight from 2,120 to 8,560 kg/km; copper from 960 to 6,240 kg/km


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### Core layout and conductor

Three power cores and three split protective conductors in the outer interstices of the stranded core, laid with a short lay length. The power cores are colour-coded brown, black, grey. The conductors are tinned: each copper wire carries a thin tin coating. Tinning protects the copper against oxidation and corrosion in damp, salty or sulphurous atmospheres and keeps the conductor solderable, which is an advantage in outdoor, marine and mining installations. The resistance limits of tinned class 5 conductors are marginally higher than for bare copper; the $R_{20}$ column shows the tinned values.

### Standard background

DIN VDE 0250-812 is the national standard for the NSSHöu heavy rubber-sheathed flexible cable. It fixes the conductor class, the insulation and sheath compounds, the wall thicknesses, the dimension limits and the routine and type tests. The harmonised H07RN-F cable covers lighter duty at 450/750 V; NSSHöu is the step up for 0.6/1 kV systems and for heavier mechanical loading.

The standard sheath compound is flexible down to 25 °C in motion and 40 °C in fixed installation. For regular use below this limit select the low-temperature grade of the same cable.

The overall screen is a tinned-copper wire braid between the inner and outer sheath. It reduces emitted and received interference in converter-fed drives and lets the cable meet the EMC requirements of the installation. A 360° termination of the screen at both ends gives the best effect; a screen that is terminated with a pigtail loses most of its benefit at high frequencies.

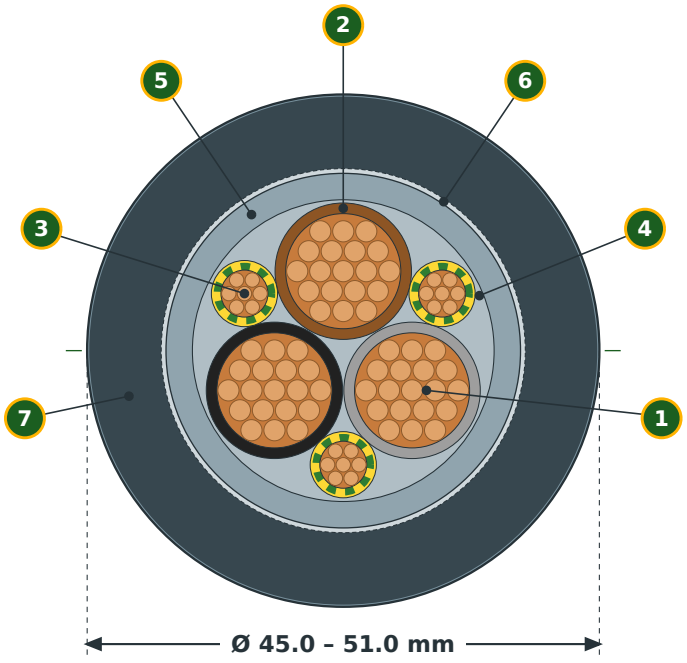
0.6/1 kV (rated phase-to-earth / phase-to-phase voltage) covers 400 V and 690 V three-phase systems; the test voltage is 3 kV.

## 02 Construction

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

**NSSHCöu**

Sample size 3×70+3×35/3E · Rev 0 · Illustrative, not to scale




| No. | Component | Material |
|---|---|---|
| 1 | Conductor | Tinned annealed fine-wire copper, class 5 to IEC 60228 / DIN VDE 0295 |
| 2 | Insulation | EPR rubber, type 3GI3 (90 °C) |
| 3 | Split PE conductor | Class 5 copper, green-yellow insulation, laid in the outer interstices between the power cores |
| 4 | Filler and binder tape | Rubber or compound filler with polyester binder tape |
| 5 | Inner sheath | Rubber compound, extruded over the stranded core |
| 6 | Overall screen | Tinned copper-wire braid, coverage ≥ 85 % |
| 7 | Outer sheath | Polychloroprene (CR) rubber, type 5GM5 |

The drawing shows size 3×70+3×35/3E. Other sizes have the same construction with scaled dimensions; the layout of every size is checked for non-overlap of all elements.


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### Construction details

| | |
|---|---|
| **Conductor** | Tinned annealed fine-wire copper, class 5 to DIN VDE 0295 / IEC 60228 |
| **Insulation** | EPR rubber, type 3GI3 (90 °C), maximum conductor temperature 90 °C |
| **Core identification** | Power cores brown, black, grey; protective conductors green-yellow |
| **Stranding** | Power cores, split PE conductors and auxiliary elements stranded together with a short lay length |
| **Overall screen** | Tinned copper-wire braid, coverage ≥ 85 %, between inner and outer sheath |
| **Inner sheath** | Rubber compound; thickness about 2.5 mm at this size |
| **Outer sheath** | Polychloroprene (CR) rubber, type 5GM5; thickness about 6.9 mm at this size |

## 03 Electrical, Thermal and Mechanical Characteristics

### Electrical data

| | |
|---|---|
| **Rated voltage $U_0/U$** | 0.6/1 kV AC |
| **Test voltage** | 3 kV AC, 5 min |
| **Maximum operating voltage, three-phase** | 1.2 kV |
| **Maximum operating voltage, DC (core-earth / core-core)** | 0.9/1.8 kV |
| **Current-carrying capacity** | Design values by the method of DIN VDE 0298-4, free air, 30 °C ambient |
| **Conductor resistance** | Maximum at 20 °C, class 5, tinned |

### Thermal and mechanical data

| | |
|---|---|
| **Maximum conductor temperature** | +90 °C |
| **Maximum temperature at short circuit** | +250 °C (5 s maximum) |
| **Ambient temperature, fixed installation** | −40 °C to +80 °C |
| **Ambient temperature, in motion** | −25 °C to +80 °C |
| **Minimum bending radius** | Fixed: 3 × D (D ≤ 12 mm), 4 × D (D > 12 mm); moving: 3 × D (D ≤ 8 mm), 4 × D (D ≤ 12 mm), 5 × D (D > 12 mm) (DIN VDE 0298-3) |
| **Maximum tensile load** | 15 N/mm² continuous on the total copper cross-section |
| **Flame propagation** | IEC 60332-1-2 / DIN EN 60332-1-2 |
| **Halogen-free** | No (CR rubber) |
| **Mineral oil resistance** | Resistant, DIN EN 60811-404 |
| **UV and ozone resistance** | Resistant |
| **Water** | Damp and wet areas, spray water |

## 04 Dimensions, Weights and Rated Data – 0.6/1 kV (8 sizes)

| Type designation cores × mm² | FeiChun article no. | Cond. Ø max mm | Outer Ø min mm | Outer Ø max mm | Bend radius fixed mm | Bend radius moving mm | Weight approx. kg/km | Copper kg/km | Max. pull N | $R_{20}$ max Ω/km | Rated current A | $I_k$ (1 s) kA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3×25+3×25/3E** | FC-NSSH-0051-01 | 6.5 | 36.0 | 40.5 | 162 | 202 | 2,120 | 960 | 1,120 | 0.795 | 130 | 3.58 |
| **3×35+3×25/3E** | FC-NSSH-0051-02 | 7.7 | 37.0 | 42.0 | 168 | 210 | 2,620 | 1,250 | 1,580 | 0.565 | 160 | 5.00 |
| **3×50+3×25/3E** | FC-NSSH-0051-03 | 9.2 | 40.0 | 45.5 | 182 | 228 | 3,250 | 1,680 | 2,250 | 0.393 | 200 | 7.15 |
| **3×70+3×35/3E** | FC-NSSH-0051-04 | 10.8 | 45.0 | 51.0 | 204 | 255 | 3,580 | 2,350 | 3,150 | 0.277 | 247 | 10.01 |
| **3×95+3×50/3E** | FC-NSSH-0051-05 | 12.6 | 51.0 | 58.0 | 232 | 290 | 4,490 | 3,220 | 4,280 | 0.210 | 299 | 13.59 |
| **3×120+3×70/3E** | FC-NSSH-0051-06 | 14.2 | 56.5 | 64.5 | 258 | 322 | 5,700 | 4,130 | 5,400 | 0.164 | 346 | 17.16 |
| **3×150+3×70/3E** | FC-NSSH-0051-07 | 15.8 | 61.0 | 69.5 | 278 | 348 | 6,770 | 4,990 | 6,750 | 0.132 | 398 | 21.45 |
| **3×185+3×95/3E** | FC-NSSH-0051-08 | 17.6 | 69.5 | 79.0 | 316 | 395 | 8,560 | 6,240 | 8,320 | 0.108 | 454 | 26.45 |

Current-carrying capacity: design values by the method of DIN VDE 0298-4, free air, 30 °C ambient; for other ambient temperatures use the factors below and the multi-core reduction factor already included in the table. Copper weight = 9.6 kg/(km·mm²) of copper cross-section (VDE copper index). Pull force = 15 N/mm² × total copper cross-section of the power cores. Diameters, dimensions and weights are nominal design values calibrated to published type tables; they vary within manufacturing tolerances. Confirm critical dimensions before


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dimensioning reels, glands or festoon systems. Other sizes and configurations are produced to order.

### Ambient temperature factors (conductor 90 °C)

| °C | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
|---|---|---|---|---|---|---|---|---|---|
| Factor | 1.08 | 1.04 | 1.00 | 0.96 | 0.91 | 0.87 | 0.82 | 0.76 | 0.71 |

### Short-circuit current rating

$I_k$ = 0.143 kA/mm² × cross-section of the power core (conductor 90 °C → 250 °C). For another duration t: $I_{k,t} = I_{k,1s} / \sqrt{t}$ (0.1 s ≤ t ≤ 5 s).

## 05 Voltage Drop, Losses and Short-Circuit Data

Voltage drop per 100 m of cable at rated current with the conductor at 90 °C, cos φ = 0.8 and reactance 0.08 Ω/km (three-phase). The percentage refers to a system voltage of 400 V. Loss is the total I²R loss of the loaded cores per 100 m. The short-circuit columns give the permitted current for four durations.

| Type designation cores × mm² | Rated current A | R at 90 °C Ω/km | Voltage drop V / 100 m | Voltage drop % of 400 V | Loss kW / 100 m | $I_k$ 0.1 s kA | $I_k$ 0.5 s kA | $I_k$ 1 s kA | $I_k$ 3 s kA |
|---|---|---|---|---|---|---|---|---|---|
| 3×25+3×25/3E | 130 | 1.01 | 19.34 | 4.84 | 5.14 | 11.31 | 5.06 | 3.58 | 2.06 |
| 3×35+3×25/3E | 160 | 0.720 | 17.30 | 4.33 | 5.53 | 15.83 | 7.08 | 5.00 | 2.89 |
| 3×50+3×25/3E | 200 | 0.501 | 15.55 | 3.89 | 6.01 | 22.61 | 10.11 | 7.15 | 4.13 |
| 3×70+3×35/3E | 247 | 0.353 | 14.14 | 3.54 | 6.46 | 31.65 | 14.16 | 10.01 | 5.78 |
| 3×95+3×50/3E | 299 | 0.268 | 13.58 | 3.39 | 7.18 | 42.96 | 19.21 | 13.59 | 7.84 |
| 3×120+3×70/3E | 346 | 0.209 | 12.90 | 3.23 | 7.51 | 54.26 | 24.27 | 17.16 | 9.91 |
| 3×150+3×70/3E | 398 | 0.168 | 12.59 | 3.15 | 8.00 | 67.83 | 30.33 | 21.45 | 12.38 |
| 3×185+3×95/3E | 454 | 0.138 | 12.44 | 3.11 | 8.52 | 83.66 | 37.41 | 26.45 | 15.27 |

## 06 Selection Guide and Sizing Aid

NSSHCöu 3×+3E covers 8 sizes. The smallest, 3×25+3×25/3E, has an outer diameter of up to 40.5 mm and weighs about 2,120 kg/km; the largest, 3×185+3×95/3E, has an outer diameter of up to 79.0 mm and weighs about 8,560 kg/km, 4.0 times as much. Across the range the rated current rises from 130 A to 454 A at 30 °C and the fixed bending radius from 162 mm to 316 mm.

**Example 1.** A circuit draws 134 A continuously at 40 °C ambient temperature, in a group of two cables. Temperature factor 0.91, grouping factor 0.80: required table current = 134 / (0.91 × 0.80) = 184 A. The smallest suitable size is 3×50+3×25/3E with 200 A.

**Example 2.** A circuit draws 305 A continuously at 35 °C ambient temperature, on its own. Temperature factor 0.96: required table current = 305 / (0.96) = 319 A. The smallest suitable size is 3×120+3×70/3E with 346 A.

## 07 Engineering Profile by Size

Every size of NSSHCöu 3×+3E with the dimensions that decide how it behaves in a circuit: layers, weight, copper share, heat, voltage drop, bending, termination and pull.

**3×25+3×25/3E.** This size has with a conductor of Ø 6.5 mm under 0.90 mm of insulation (core Ø 8.3 mm) and 2.0 mm inner and 6.1 mm outer sheath; outer diameter 36.0–40.5 mm, weight about 2,120 kg/km of which copper 960 kg/km (45 %). Rated current 130 A at 30 °C; at that load the voltage drop is 19.34 V per 100 m (4.84 % of 400 V) and the loss 5.14 kW per 100 m. Bending radius 162 mm fixed, 202 mm moving; gland M63, lug bolt M8. Short-circuit rating 3.58 kA for 1 s; permitted pull 1,120 N, free-hanging length 53 m.

**3×35+3×25/3E.** This size has with a conductor of Ø 7.6 mm under 0.90 mm of insulation (core Ø 9.4 mm) and 2.1 mm inner and 5.9 mm outer sheath; outer diameter 37.0–42.0 mm, weight about 2,620 kg/km of which copper 1,250 kg/km (48 %). Rated current 160 A at 30 °C; at that load the voltage drop is 17.30 V per 100 m (4.33 % of 400 V) and the loss 5.53 kW per 100 m. Bending radius 168 mm fixed, 210 mm moving; gland M63, lug bolt M8. Short-circuit rating 5.00 kA for 1 s; permitted pull 1,580 N, free-hanging length 61 m.

**3×50+3×25/3E.** This size has with a conductor of Ø 9.1 mm under 1.00 mm of insulation (core Ø 11.1 mm) and 2.3 mm inner and 6.2 mm outer sheath; outer diameter 40.0–45.5 mm, weight about 3,250 kg/km of which copper 1,680 kg/km (52 %). Rated current 200 A at 30 °C; at that load the voltage drop is 15.55 V per 100 m (3.89 % of 400 V) and the loss 6.01 kW per 100 m. Bending radius 182 mm fixed, 228 mm moving; gland M75, lug bolt M10. Short-circuit rating 7.15 kA for 1 s; permitted pull 2,250 N, free-hanging length 70 m.

**3×70+3×35/3E.** This size has with a conductor of Ø 10.8 mm under 1.00 mm of insulation (core Ø 12.8 mm) and 2.5 mm inner and 6.9 mm outer sheath; outer diameter 45.0–51.0 mm, weight about 3,580 kg/km of which copper 2,350 kg/km (66 %). Rated current 247 A at 30 °C; at that load the voltage drop is 14.14 V per 100 m (3.54 % of 400 V) and the loss 6.46 kW per 100 m. Bending radius 204 mm fixed, 255 mm moving; gland M75, lug bolt M10. Short-circuit


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rating 10.01 kA for 1 s; permitted pull 3,150 N, free-hanging length 89 m.

**3×95+3×50/3E.** This size has with a conductor of Ø 12.6 mm under 1.10 mm of insulation (core Ø 14.8 mm) and 2.8 mm inner and 7.8 mm outer sheath; outer diameter 51.0–58.0 mm, weight about 4,490 kg/km of which copper 3,220 kg/km (72 %). Rated current 299 A at 30 °C; at that load the voltage drop is 13.58 V per 100 m (3.39 % of 400 V) and the loss 7.18 kW per 100 m. Bending radius 232 mm fixed, 290 mm moving; gland M85, lug bolt M12. Short-circuit rating 13.59 kA for 1 s; permitted pull 4,280 N, free-hanging length 97 m.

**3×120+3×70/3E.** This size has with a conductor of Ø 14.1 mm under 1.10 mm of insulation (core Ø 16.3 mm) and 3.0 mm inner and 8.8 mm outer sheath; outer diameter 56.5–64.5 mm, weight about 5,700 kg/km of which copper 4,130 kg/km (72 %). Rated current 346 A at 30 °C; at that load the voltage drop is 12.90 V per 100 m (3.23 % of 400 V) and the loss 7.51 kW per 100 m. Bending radius 258 mm fixed, 322 mm moving; gland M90, lug bolt M12. Short-circuit rating 17.16 kA for 1 s; permitted pull 5,400 N, free-hanging length 96 m.

**3×150+3×70/3E.** This size has with a conductor of Ø 15.8 mm under 1.40 mm of insulation (core Ø 18.6 mm) and 3.3 mm inner and 8.6 mm outer sheath; outer diameter 61.0–69.5 mm, weight about 6,770 kg/km of which copper 4,990 kg/km (74 %). Rated current 398 A at 30 °C; at that load the voltage drop is 12.59 V per 100 m (3.15 % of 400 V) and the loss 8.00 kW per 100 m. Bending radius 278 mm fixed, 348 mm moving; gland M90, lug bolt M12. Short-circuit rating 21.45 kA for 1 s; permitted pull 6,750 N, free-hanging length 101 m.

**3×185+3×95/3E.** This size has with a conductor of Ø 17.5 mm under 1.60 mm of insulation (core Ø 20.7 mm) and 3.6 mm inner and 10.4 mm outer sheath; outer diameter 69.5–79.0 mm, weight about 8,560 kg/km of which copper 6,240 kg/km (73 %). Rated current 454 A at 30 °C; at that load the voltage drop is 12.44 V per 100 m (3.11 % of 400 V) and the loss 8.52 kW per 100 m. Bending radius 316 mm fixed, 395 mm moving; gland M100, lug bolt M16. Short-circuit rating 26.45 kA for 1 s; permitted pull 8,320 N, free-hanging length 99 m.

Averaged over all sizes copper makes up 67 % of the cable weight; the share rises from 45 % at 3×25+3×25/3E to 73 % at 3×185+3×95/3E, which is why the larger sizes are costed mostly on the copper market price.

## 08 Construction Dimensions by Size

Wall thicknesses and diameters of the layers at each size, taken from the validated cross-section layout; the overall diameter in section 04 is the sum of these layers within tolerance. The insulation wall follows the voltage class 0.6/1 kV.

| Type designation cores × mm² | Conductor Ø mm | Core Ø over insulation, mm | Insulation wall mm | Laid-up core Ø mm | Inner sheath mm | Outer sheath mm | Screen + braid mm | Sheath share of Ø, % |
|---|---|---|---|---|---|---|---|---|
| 3×25+3×25/3E | 6.45 | 8.25 | 0.90 | 21.1 | 2.00 | 6.15 | 0.45 | 45 |
| 3×35+3×25/3E | 7.63 | 9.43 | 0.90 | 22.7 | 2.11 | 5.89 | 0.45 | 43 |
| 3×50+3×25/3E | 9.12 | 11.12 | 1.00 | 24.9 | 2.25 | 6.24 | 0.45 | 42 |
| 3×70+3×35/3E | 10.79 | 12.79 | 1.00 | 28.3 | 2.48 | 6.94 | 0.45 | 41 |
| 3×95+3×50/3E | 12.57 | 14.77 | 1.10 | 32.4 | 2.75 | 7.78 | 0.45 | 40 |
| 3×120+3×70/3E | 14.13 | 16.33 | 1.10 | 36.1 | 3.00 | 8.75 | 0.45 | 40 |
| 3×150+3×70/3E | 15.80 | 18.60 | 1.40 | 40.7 | 3.30 | 8.62 | 0.45 | 38 |
| 3×185+3×95/3E | 17.55 | 20.75 | 1.60 | 45.3 | 3.60 | 10.45 | 0.45 | 39 |

## 09 Termination Planning (indicative)

| Type designation cores × mm² | Outer Ø or W × H mm | Cable gland thread | Lug / ferrule bolt | Strip length mm | Straight length behind gland, mm |
|---|---|---|---|---|---|
| 3×25+3×25/3E | 40.5 | M63 | M8 | 14 | 80 |
| 3×35+3×25/3E | 42.0 | M63 | M8 | 16 | 85 |
| 3×50+3×25/3E | 45.5 | M75 | M10 | 19 | 90 |
| 3×70+3×35/3E | 51.0 | M75 | M10 | 26 | 100 |
| 3×95+3×50/3E | 58.0 | M85 | M12 | 31 | 115 |
| 3×120+3×70/3E | 64.5 | M90 | M12 | 35 | 130 |
| 3×150+3×70/3E | 69.5 | M90 | M12 | 41 | 140 |
| 3×185+3×95/3E | 79.0 | M100 | M16 | 47 | 160 |

Gland threads, lug bolts and strip lengths are planning guides computed from the dimensions above; confirm them with the accessory manufacturer.


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## 10 Comparison with Related Variants at Size 3×70+3×35/3E

| Variant | Differs in | Outer Ø / H mm | Weight kg/km | Pull N | Current A |
|---|---|---|---|---|---|
| **This datasheet** NSSHCöu 3×+3E 0.6/1 kV | – | 51.0 | 3,580 | 3,150 | 247 |
| NSSHCöu 12G 0.6/1 kV 12G4 | core configuration | 33.5 (-34%) | 1,290 (-64%) | 720 (-77%) | 22 (-91%) |
| NSSHCöu 3×+3E+2×1.5 0.6/1 kV 3×70+3×35/3E+2×1.5 | core configuration | 51.0 (+0%) | 3,610 (+1%) | 3,150 (+0%) | 247 (+0%) |
| NSSHCöu 3×+3E 0.6/1 kV 3×70+3×35/3E | tinned vs bare copper | 51.0 (+0%) | 3,580 (+0%) | 3,150 (+0%) | 250 (+1%) |
| NSSHCöu 3×+3E 0.6/1 kV 3×70+3×35/3E | low-temperature sheath | 51.0 (+0%) | 3,580 (+0%) | 3,150 (+0%) | 247 (+0%) |
| NSSHöu 3×+3E 0.6/1 kV 3×70+3×35/3E | overall screen | 50.0 (-2%) | 3,470 (-3%) | 3,150 (+0%) | 247 (+0%) |
| NSSHCöu 3×+3E 0.66/1.14 kV 3×70+3×35/3E | voltage class | 52.5 (+3%) | 3,640 (+2%) | 3,150 (+0%) | 247 (+0%) |
| NSSHCöu 10G 0.6/1 kV 10G4 | core configuration | 32.5 (-36%) | 1,230 (-66%) | 600 (-81%) | 24 (-90%) |
| NSSHCöu 3×+3E+2×2.5 0.6/1 kV 3×70+3×35/3E+2×2.5 | core configuration | 53.0 (+4%) | 3,730 (+4%) | 3,150 (+0%) | 247 (+0%) |

Percentages show the change against this datasheet; where a variant does not offer the exact size, the nearest listed size is used.

## 11 Standards and Testing

| Standard | Scope |
|---|---|
| **DIN VDE 0250-812** | Rubber-insulated flexible cable NSSHöu, 0.6/1 kV |
| **DIN VDE 0295 / IEC 60228** | Conductors, class 5 |
| **DIN VDE 0207-20 / -21** | Rubber insulation and sheath compounds (3GI3, 5GM5) |
| **DIN VDE 0293-308** | Core identification |
| **DIN VDE 0298-3 / -4** | Application: bending, tensile load; current-carrying capacity |
| **DIN EN 60811-404** | Mineral oil resistance of sheath |
| **DIN EN 60332-1-2 / IEC 60332-1-2** | Flame propagation, single cable |

### Routine and type tests

- AC voltage test on every drum length (routine test): 3 kV, 5 min
- Conductor resistance and checks of dimensions, insulation thickness and sheath thickness
- Continuity of conductors and protective earth
- Flame propagation test (IEC 60332-1-2) and mineral-oil resistance on type-test samples

**Test documentation:** every delivery is accompanied by a test certificate from FeiChun’s own laboratory. Third-party witnessed tests can be arranged at the buyer’s cost.

The design follows DIN VDE 0250-812. This datasheet does not claim the VDE approval mark; mark or approval certificates, where required for a project, are arranged on request and apply only to the type tested.


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## 12 Installation, Marking and Delivery

### Installation guidance

- Do not exceed the permissible tensile load of 15 N/mm² of the total copper cross-section; use a cable grip that holds the sheath, never the conductors.
- Keep the bending radius at or above the values in section 04; for free movement use 3 × D up to 8 mm, 4 × D up to 12 mm and 5 × D above 12 mm outer diameter.
- Lay the cable without kinks and unwind it completely from the reel before loading it above 50 % of the rated current.
- Use cable glands whose clamping range covers the maximum outer diameter and seal the cable entry to the enclosure rating.
- Protect the cable against permanent running-over by vehicles; where this cannot be avoided use cable ramps or protective ducts.
- Leave the green-yellow protective core slightly longer than the power cores, so that it is the last to be loaded if the cable is pulled at the terminal.

### Sheath marking

```
FEICHUN NSSHCöu [cross-section] 0.6/1 kV [year] [serial no.] [metre mark]
```

### Packing and delivery

| | |
|---|---|
| **Drum** | Steel or fumigated wooden drums; cable ends sealed with heat-shrink caps |
| **Delivery length** | As ordered, in one continuous length without joints |
| **Lead time** | 2–3 weeks after technical approval |
| **Warranty** | At least 3 years against manufacturing defects |
| **Drum label** | Type, cross-section, length, gross/net weight, batch no., drum no. |

### Ordering information

**Order example: NSSHCöu 3×70+3×35/3E 0.6/1 kV** – 500 m on one drum. When requesting a quotation, state the cable type, configuration, cross-section, voltage, conductor (tinned), length per piece, required standards and installation conditions.

## 13 Certification and Quality

All cable is subject to FeiChun’s quality control, with routine testing over 100 % of the delivered length. Declarations of conformity, type-test reports and third-party tests (for example for a mine, a tunnel or a rail project) are provided per project requirement; copies of the records are available on request. FeiChun holds CE, EAC and UKCA documentation for certain product groups. Whether a certificate covers this specific construction must be confirmed with FeiChun before it is quoted in a tender.

VDE, mine-specific (for example coal-mine safety marks, MSHA) and ATEX / IECEx approvals are not implied by this datasheet. They depend on the project, the machine and the country and are arranged with the end user.

## 14 Related Datasheets and Frequently Asked Questions

Variants of this cable with a different configuration, conductor, temperature grade, screen or voltage. All datasheets are PDF files.

- NSSHCöu 12G 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 3×+3E+2×1.5 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 3×+3E 0.6/1 kV – tinned vs bare copper, CR rubber
- NSSHCöu 3×+3E 0.6/1 kV – low-temperature sheath, CR rubber, low-temp, tinned
- NSSHöu 3×+3E 0.6/1 kV – overall screen, CR rubber, tinned
- NSSHCöu 3×+3E 0.66/1.14 kV – voltage class, CR rubber, tinned
- NSSHCöu 10G 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 3×+3E+2×2.5 0.6/1 kV – core configuration, CR rubber, tinned

Overview of all NSSHöu datasheets: NSSHöu Heavy Rubber-Sheathed Flexible Cables

### Frequently asked questions

**Which cable is meant by NSSHöu?**
NSSHöu is the VDE designation of the heavy rubber-sheathed flexible cable to DIN VDE 0250-812, rated 0.6/1 kV, with EPR insulation and a polychloroprene sheath.

**What is the difference between the -J and the -O version?**
The J version contains a green-yellow protective core; the O version does not. NSSHCöu 3×+3E is the version.


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### What sizes are available for NSSHCöu 3×+3E?

8 sizes from 25 to 185 mm². The outer dimension of the largest size, 3×185+3×95/3E, is 79.0 mm and the weight is about 8,560 kg/km.

### What current can 3×95+3×50/3E carry?

299 A in free air at 30 °C ambient, with the conductor at 90 °C. Other temperatures and grouping change the value; use the factors in section 04.

## 15 Trademark Notice and Intellectual Property

Cable type designations such as NSSHCöu are standardised, descriptive designations defined in DIN VDE and EN standards; they are used to state which standard this product is designed to. References to other manufacturers' trade names, where made, serve only for technical comparison; FeiChun Cables is not affiliated with them.

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