DIN VDE 0250-812 · HEAVY RUBBER-SHEATHED FLEXIBLE CABLE | 0.6/1 kV | 12 sizes | CR rubber | TINNED COPPER | SCREENED

# NSSHCöu 2× 0.6/1 kV

Heavy Rubber-Sheathed Flexible Cable 0.6/1 kV – 2 cores of equal cross-section in concentric layers with a short lay length. Polychloroprene rubber sheath. Complete technical data sheet: construction, dimensions, weights, current ratings, voltage drop and installation guidance for 12 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

| 12 sizes | 0.6/1 kV | +90 °C | CR rubber |
|---|---|---|---|
| Cross-section 1.5 – 120 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
- 12 sizes from 1.5 to 120 mm²; weight from 197 to 3,740 kg/km; copper from 29 to 2,300 kg/km


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### Core layout and conductor

2 cores of equal cross-section in concentric layers with a short lay length. Core colours: brown, blue (DIN VDE 0293-308); no protective core is included. Two-core cables serve single-phase AC and DC supplies. 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.

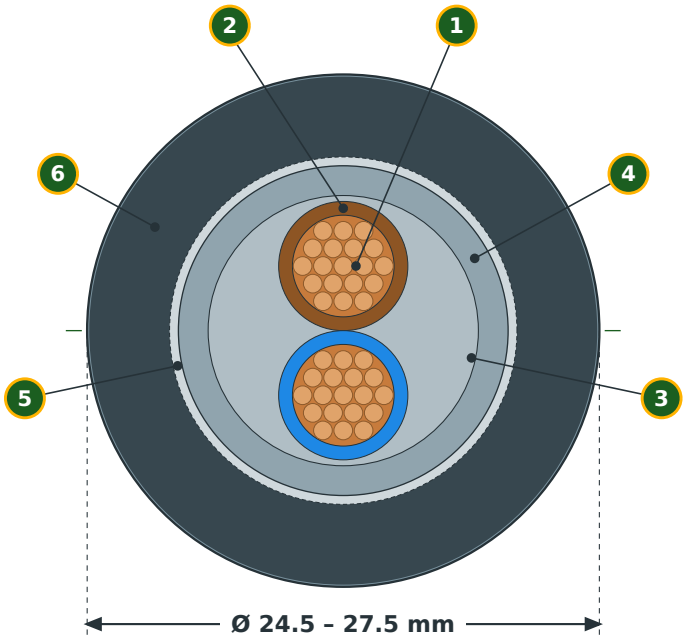
The overall screen is a tinned-copper wire braid between the inner and outer sheath. It reduces emitted and received interference in converter-fed drives and lets the cable meet the EMC requirements of the installation. A 360° termination of the screen at both ends gives the best effect; a screen that 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 2×16 · 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 | Filler and binder tape | Rubber or compound filler with polyester binder tape |
| 4 | Inner sheath | Rubber compound, extruded over the stranded core |
| 5 | Overall screen | Tinned copper-wire braid, coverage ≥ 85 % |
| 6 | Outer sheath | Polychloroprene (CR) rubber, type 5GM5 |

The drawing shows size 2×16. 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** | Brown, blue to DIN VDE 0293-308 |
| **Stranding** | Cores in concentric layers with a short lay length |
| **Overall screen** | Tinned copper-wire braid, coverage ≥ 85 %, between inner and outer sheath |
| **Inner sheath** | Rubber compound; thickness about 1.5 mm at this size |
| **Outer sheath** | Polychloroprene (CR) rubber, type 5GM5; thickness about 4.2 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 |


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## 04 Dimensions, Weights and Rated Data – 0.6/1 kV (12 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2×1.5** | FC-NSSH-0037-01 | 1.7 | 13.2 | 15.0 | 60 | 75 | 197 | 29 | 45 | 13.7 | 22 | 0.214 |
| **2×2.5** | FC-NSSH-0037-02 | 2.2 | 15.1 | 17.2 | 69 | 86 | 273 | 48 | 75 | 8.21 | 31 | 0.357 |
| **2×4** | FC-NSSH-0037-03 | 2.7 | 17.2 | 19.6 | 78 | 98 | 350 | 77 | 120 | 5.09 | 41 | 0.572 |
| **2×6** | FC-NSSH-0037-04 | 3.3 | 18.9 | 21.5 | 86 | 108 | 430 | 115 | 180 | 3.39 | 53 | 0.858 |
| **2×10** | FC-NSSH-0037-05 | 4.1 | 21.8 | 24.7 | 99 | 124 | 650 | 192 | 300 | 1.95 | 73 | 1.43 |
| **2×16** | FC-NSSH-0037-06 | 5.2 | 24.5 | 27.5 | 110 | 138 | 960 | 307 | 480 | 1.24 | 98 | 2.29 |
| **2×25** | FC-NSSH-0037-07 | 6.5 | 30.5 | 34.5 | 138 | 172 | 1,300 | 480 | 750 | 0.795 | 130 | 3.58 |
| **2×35** | FC-NSSH-0037-08 | 7.7 | 33.0 | 37.5 | 150 | 188 | 1,730 | 670 | 1,050 | 0.565 | 160 | 5.00 |
| **2×50** | FC-NSSH-0037-09 | 9.2 | 37.5 | 42.5 | 170 | 212 | 2,330 | 960 | 1,500 | 0.393 | 200 | 7.15 |
| **2×70** | FC-NSSH-0037-10 | 10.8 | 42.5 | 48.5 | 194 | 242 | 2,430 | 1,340 | 2,100 | 0.277 | 247 | 10.01 |
| **2×95** | FC-NSSH-0037-11 | 12.6 | 48.5 | 55.0 | 220 | 275 | 3,020 | 1,820 | 2,850 | 0.210 | 299 | 13.59 |
| **2×120** | FC-NSSH-0037-12 | 14.2 | 53.0 | 60.5 | 242 | 302 | 3,740 | 2,300 | 3,600 | 0.164 | 346 | 17.16 |

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. 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 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 |
|---|---|---|---|---|---|---|---|---|---|
| **2×1.5** | 22 | 17.5 | 53.44 | 13.36 | 2.54 | 0.678 | 0.303 | 0.214 | 0.124 |
| **2×2.5** | 31 | 10.5 | 45.23 | 11.31 | 3.02 | 1.13 | 0.506 | 0.357 | 0.206 |
| **2×4** | 41 | 6.49 | 37.21 | 9.30 | 3.27 | 1.81 | 0.809 | 0.572 | 0.330 |
| **2×6** | 53 | 4.32 | 32.19 | 8.05 | 3.64 | 2.71 | 1.21 | 0.858 | 0.495 |
| **2×10** | 73 | 2.49 | 25.76 | 6.44 | 3.98 | 4.52 | 2.02 | 1.43 | 0.826 |
| **2×16** | 98 | 1.58 | 22.29 | 5.57 | 4.56 | 7.24 | 3.24 | 2.29 | 1.32 |
| **2×25** | 130 | 1.01 | 19.34 | 4.84 | 5.14 | 11.31 | 5.06 | 3.58 | 2.06 |
| **2×35** | 160 | 0.720 | 17.30 | 4.33 | 5.53 | 15.83 | 7.08 | 5.00 | 2.89 |
| **2×50** | 200 | 0.501 | 15.55 | 3.89 | 6.01 | 22.61 | 10.11 | 7.15 | 4.13 |
| **2×70** | 247 | 0.353 | 14.14 | 3.54 | 6.46 | 31.65 | 14.16 | 10.01 | 5.78 |
| **2×95** | 299 | 0.268 | 13.58 | 3.39 | 7.18 | 42.96 | 19.21 | 13.59 | 7.84 |
| **2×120** | 346 | 0.209 | 12.90 | 3.23 | 7.51 | 54.26 | 24.27 | 17.16 | 9.91 |

## 06 Selection Guide and Sizing Aid

NSSHCöu 2× covers 12 sizes. The smallest, 2×1.5, has an outer diameter of up to 15.0 mm and weighs about 197 kg/km; the largest, 2×120, has an outer diameter of up to 60.5 mm and weighs about 3,740 kg/km, 19.0 times as much. Across the range the rated current rises from 22 A to 346 A at 30 °C and the fixed bending radius from 60 mm to 242 mm.

**Example 1.** A circuit draws 49 A continuously at 40 °C ambient temperature, in a group of two cables. Temperature factor 0.91, grouping factor 0.80: required table current = 49 / (0.91 × 0.80) = 68 A. The smallest suitable size is 2×10 with 73 A.


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**Example 2.** A circuit draws 176 A continuously at 35 °C ambient temperature, on its own. Temperature factor 0.96: required table current = 176 / (0.96) = 184 A. The smallest suitable size is 2×50 with 200 A.

## 07 Engineering Profile by Size

Every size of NSSHCöu 2× with the dimensions that decide how it behaves in a circuit: layers, weight, copper share, heat, voltage drop, bending, termination and pull.

**2×1.5.** This size has with a conductor of Ø 1.7 mm under 0.70 mm of insulation (core Ø 3.1 mm) and 1.0 mm inner and 2.2 mm outer sheath; outer diameter 13.2–15.0 mm, weight about 197 kg/km of which copper 29 kg/km (15 %). Rated current 22 A at 30 °C; at that load the voltage drop is 53.44 V per 100 m (13.36 % of 400 V) and the loss 2.54 kW per 100 m. Bending radius 60 mm fixed, 75 mm moving; gland M25, lug bolt M5. Short-circuit rating 0.214 kA for 1 s; permitted pull 45 N, free-hanging length 23 m.

**2×2.5.** This size has with a conductor of Ø 2.1 mm under 0.70 mm of insulation (core Ø 3.5 mm) and 1.1 mm inner and 2.7 mm outer sheath; outer diameter 15.1–17.2 mm, weight about 273 kg/km of which copper 48 kg/km (18 %). Rated current 31 A at 30 °C; at that load the voltage drop is 45.23 V per 100 m (11.31 % of 400 V) and the loss 3.02 kW per 100 m. Bending radius 69 mm fixed, 86 mm moving; gland M32, lug bolt M5. Short-circuit rating 0.357 kA for 1 s; permitted pull 75 N, free-hanging length 28 m.

**2×4.** This size has with a conductor of Ø 2.7 mm under 0.70 mm of insulation (core Ø 4.1 mm) and 1.2 mm inner and 3.2 mm outer sheath; outer diameter 17.2–19.6 mm, weight about 350 kg/km of which copper 77 kg/km (22 %). Rated current 41 A at 30 °C; at that load the voltage drop is 37.21 V per 100 m (9.30 % of 400 V) and the loss 3.27 kW per 100 m. Bending radius 78 mm fixed, 98 mm moving; gland M32, lug bolt M5. Short-circuit rating 0.572 kA for 1 s; permitted pull 120 N, free-hanging length 34 m.

**2×6.** This size has with a conductor of Ø 3.3 mm under 0.70 mm of insulation (core Ø 4.7 mm) and 1.3 mm inner and 3.4 mm outer sheath; outer diameter 18.9–21.5 mm, weight about 430 kg/km of which copper 115 kg/km (27 %). Rated current 53 A at 30 °C; at that load the voltage drop is 32.19 V per 100 m (8.05 % of 400 V) and the loss 3.64 kW per 100 m. Bending radius 86 mm fixed, 108 mm moving; gland M32, lug bolt M5. Short-circuit rating 0.858 kA for 1 s; permitted pull 180 N, free-hanging length 42 m.

**2×10.** This size has with a conductor of Ø 4.1 mm under 0.70 mm of insulation (core Ø 5.5 mm) and 1.4 mm inner and 4.0 mm outer sheath; outer diameter 21.8–24.7 mm, weight about 650 kg/km of which copper 192 kg/km (30 %). Rated current 73 A at 30 °C; at that load the voltage drop is 25.76 V per 100 m (6.44 % of 400 V) and the loss 3.98 kW per 100 m. Bending radius 99 mm fixed, 124 mm moving; gland M32, lug bolt M6. Short-circuit rating 1.43 kA for 1 s; permitted pull 300 N, free-hanging length 47 m.

**2×16.** This size has with a conductor of Ø 5.2 mm under 0.70 mm of insulation (core Ø 6.6 mm) and 1.5 mm inner and 4.2 mm outer sheath; outer diameter 24.5–27.5 mm, weight about 960 kg/km of which copper 307 kg/km (32 %). Rated current 98 A at 30 °C; at that load the voltage drop is 22.29 V per 100 m (5.57 % of 400 V) and the loss 4.56 kW per 100 m. Bending radius 110 mm fixed, 138 mm moving; gland M40, lug bolt M6. Short-circuit rating 2.29 kA for 1 s; permitted pull 480 N, free-hanging length 50 m.

**2×25.** This size has with a conductor of Ø 6.5 mm under 0.90 mm of insulation (core Ø 8.3 mm) and 1.7 mm inner and 5.5 mm outer sheath; outer diameter 30.5–34.5 mm, weight about 1,300 kg/km of which copper 480 kg/km (37 %). 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 138 mm fixed, 172 mm moving; gland M50, lug bolt M8. Short-circuit rating 3.58 kA for 1 s; permitted pull 750 N, free-hanging length 58 m.

**2×35.** This size has with a conductor of Ø 7.6 mm under 0.90 mm of insulation (core Ø 9.4 mm) and 1.9 mm inner and 5.5 mm outer sheath; outer diameter 33.0–37.5 mm, weight about 1,730 kg/km of which copper 670 kg/km (39 %). 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 150 mm fixed, 188 mm moving; gland M50, lug bolt M8. Short-circuit rating 5.00 kA for 1 s; permitted pull 1,050 N, free-hanging length 61 m.

**2×50.** This size has with a conductor of Ø 9.1 mm under 1.00 mm of insulation (core Ø 11.1 mm) and 2.1 mm inner and 6.1 mm outer sheath; outer diameter 37.5–42.5 mm, weight about 2,330 kg/km of which copper 960 kg/km (41 %). 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 170 mm fixed, 212 mm moving; gland M63, lug bolt M10. Short-circuit rating 7.15 kA for 1 s; permitted pull 1,500 N, free-hanging length 65 m.

**2×70.** This size has with a conductor of Ø 10.8 mm under 1.00 mm of insulation (core Ø 12.8 mm) and 2.3 mm inner and 6.8 mm outer sheath; outer diameter 42.5–48.5 mm, weight about 2,430 kg/km of which copper 1,340 kg/km (55 %). 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 194 mm fixed, 242 mm moving; gland M75, lug bolt M10. Short-circuit rating 10.01 kA for 1 s; permitted pull 2,100 N, free-hanging length 88 m.


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**2×95.** This size has with a conductor of Ø 12.6 mm under 1.10 mm of insulation (core Ø 14.8 mm) and 2.6 mm inner and 7.7 mm outer sheath; outer diameter 48.5–55.0 mm, weight about 3,020 kg/km of which copper 1,820 kg/km (60 %). 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 220 mm fixed, 275 mm moving; gland M85, lug bolt M12. Short-circuit rating 13.59 kA for 1 s; permitted pull 2,850 N, free-hanging length 96 m.

**2×120.** This size has with a conductor of Ø 14.1 mm under 1.10 mm of insulation (core Ø 16.3 mm) and 2.8 mm inner and 8.5 mm outer sheath; outer diameter 53.0–60.5 mm, weight about 3,740 kg/km of which copper 2,300 kg/km (61 %). 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 242 mm fixed, 302 mm moving; gland M85, lug bolt M12. Short-circuit rating 17.16 kA for 1 s; permitted pull 3,600 N, free-hanging length 98 m.

Averaged over all sizes copper makes up 48 % of the cable weight; the share rises from 15 % at 2×1.5 to 61 % at 2×120, 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, % |
|---|---|---|---|---|---|---|---|---|
| **2×1.5** | 1.65 | 3.05 | 0.70 | 6.7 | 1.04 | 2.22 | 0.45 | 53 |
| **2×2.5** | 2.13 | 3.53 | 0.70 | 7.7 | 1.11 | 2.68 | 0.45 | 52 |
| **2×4** | 2.70 | 4.10 | 0.70 | 8.8 | 1.18 | 3.18 | 0.45 | 52 |
| **2×6** | 3.30 | 4.70 | 0.70 | 10.0 | 1.26 | 3.39 | 0.45 | 51 |
| **2×10** | 4.08 | 5.48 | 0.70 | 11.6 | 1.37 | 4.03 | 0.45 | 50 |
| **2×16** | 5.16 | 6.56 | 0.70 | 13.7 | 1.51 | 4.18 | 0.45 | 47 |
| **2×25** | 6.45 | 8.25 | 0.90 | 17.1 | 1.73 | 5.46 | 0.45 | 47 |
| **2×35** | 7.63 | 9.43 | 0.90 | 19.5 | 1.89 | 5.47 | 0.45 | 45 |
| **2×50** | 9.12 | 11.12 | 1.00 | 22.8 | 2.12 | 6.10 | 0.45 | 43 |
| **2×70** | 10.79 | 12.79 | 1.00 | 26.2 | 2.34 | 6.82 | 0.45 | 42 |
| **2×95** | 12.57 | 14.77 | 1.10 | 30.1 | 2.60 | 7.66 | 0.45 | 42 |
| **2×120** | 14.13 | 16.33 | 1.10 | 33.3 | 2.81 | 8.54 | 0.45 | 41 |

## 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 |
|---|---|---|---|---|---|
| **2×1.5** | 15.0 | M25 | M5 | 10 | 30 |
| **2×2.5** | 17.2 | M32 | M5 | 10 | 35 |
| **2×4** | 19.6 | M32 | M5 | 10 | 40 |
| **2×6** | 21.5 | M32 | M5 | 11 | 45 |
| **2×10** | 24.7 | M32 | M6 | 11 | 50 |
| **2×16** | 27.5 | M40 | M6 | 12 | 55 |
| **2×25** | 34.5 | M50 | M8 | 14 | 70 |
| **2×35** | 37.5 | M50 | M8 | 16 | 75 |
| **2×50** | 42.5 | M63 | M10 | 19 | 85 |
| **2×70** | 48.5 | M75 | M10 | 26 | 95 |
| **2×95** | 55.0 | M85 | M12 | 31 | 110 |
| **2×120** | 60.5 | M85 | M12 | 35 | 120 |

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 2×16

| Variant | Differs in | Outer Ø / H mm | Weight kg/km | Pull N | Current A |
|---|---|---|---|---|---|
| **This datasheet** NSSHCöu 2× 0.6/1 kV | – | 27.5 | 960 | 480 | 98 |
| NSSHCöu 3× 0.6/1 kV 3×16 | core configuration | 29.0 (+5%) | 1,200 (+25%) | 720 (+50%) | 98 (+0%) |
| NSSHCöu 3G 0.6/1 kV 3G16 | core configuration | 29.0 (+5%) | 1,200 (+25%) | 720 (+50%) | 98 (+0%) |
| NSSHCöu 2× 0.6/1 kV 2×16 | tinned vs bare copper | 27.5 (+0%) | 960 (+0%) | 480 (+0%) | 99 (+1%) |
| NSSHCöu 2× 0.6/1 kV 2×16 | low-temperature sheath | 27.5 (+0%) | 960 (+0%) | 480 (+0%) | 98 (+0%) |
| NSSHöu 2× 0.6/1 kV 2×16 | overall screen | 26.5 (-4%) | 870 (-9%) | 480 (+0%) | 98 (+0%) |
| NSSHCöu 2× 0.66/1.14 kV 2×16 | voltage class | 28.5 (+4%) | 1,000 (+4%) | 480 (+0%) | 98 (+0%) |
| NSSHCöu 4× 0.6/1 kV 4×16 | core configuration | 32.0 (+16%) | 1,530 (+59%) | 960 (+100%) | 83 (-15%) |
| NSSHCöu 4G 0.6/1 kV 4G16 | core configuration | 32.0 (+16%) | 1,530 (+59%) | 960 (+100%) | 98 (+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
- 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 2×16 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 3× 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 3G 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 2× 0.6/1 kV – tinned vs bare copper, CR rubber
- NSSHCöu 2× 0.6/1 kV – low-temperature sheath, CR rubber, low-temp, tinned
- NSSHöu 2× 0.6/1 kV – overall screen, CR rubber, tinned
- NSSHCöu 2× 0.66/1.14 kV – voltage class, CR rubber, tinned
- NSSHCöu 4× 0.6/1 kV – core configuration, CR rubber, tinned
- NSSHCöu 4G 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 2× is the O (without PE core) version.


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### What sizes are available for NSSHCöu 2×?

12 sizes from 1.5 to 120 mm². The outer dimension of the largest size, 2×120, is 60.5 mm and the weight is about 3,740 kg/km.

### What current can 2×25 carry?

130 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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