

(N)SHTÖU-O/J Reeling Cable Technical Specification

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安徽飞纯特种电缆有限公司



Commercial Quotation

Product: (N)SHTÖU-O/J Reeling Cable	Standard: DIN VDE 0250 Part 814
Construction: 42G × 2.5 mm ²	Quantity: 500 meters
Unit Price: USD 40.25 per meter	Total Amount: USD 20,125.00
Terms: FOB Shanghai	Lead Time: Approximately 20 days
Payment: T/T (Telegraphic Transfer)	Collection Point: Shanghai, China

42G × 2.5 mm²

Featured Specification - Control Cable Configuration

Product Overview

The (N)SHTÖU-O/J reeling cable represents a premium solution for demanding industrial applications requiring exceptional mechanical resilience and electrical performance. This flexible cable has been specifically engineered to withstand severe mechanical stresses including tensile loads and torsional forces, making it ideally suited for continuous duty operations in harsh industrial environments.

This cable design incorporates halogen-free polyurethane sheathing technology, which delivers superior mechanical characteristics while maintaining reduced weight compared to traditional rubber compounds. The innovative anti-twisting element ensures dimensional stability during repeated flexing and rotation cycles, extending operational service life significantly beyond conventional cable designs.

Primary Applications

The (N)SHTÖU-O/J cable series has been developed specifically for mobile power and signaling connections operating under heavy-duty conditions. Typical deployment scenarios include cable winding reels installed on harbor cranes and container handling equipment, material conveyors in manufacturing facilities, automated handling machinery systems, and mining or tunneling equipment where cables must endure continuous movement, abrasion, and crushing forces.

Cable Construction Details

1. PHASE CONDUCTORS

Material: Tinned electrolytic copper conductors provide superior oxidation resistance and electrical conductivity, essential for maintaining low resistance connections in challenging environments.

Construction: Class 5 stranding according to VDE 0295 and IEC 60228 standards ensures optimal flexibility while maintaining mechanical strength for repeated bending cycles.

2. INSULATION SYSTEM

Material: 3GI3 grade rubber compound conforming to VDE 0207 Part 20 specifications provides excellent dielectric properties and thermal stability.

Core Identification: Systematic color coding and numerical marking according to DIN VDE 0293 Part 308 (HD 308 S2) ensures rapid conductor identification during installation and maintenance operations.

Laying-up Configuration: Core lay length is maintained at eight times the core diameter maximum, optimizing mechanical properties while minimizing internal stresses during cable flexing.

3. INNER SHEATH

Material: Halogen-free polyurethane compound forms the protective inner jacket, isolating the conductor assembly from external mechanical forces while maintaining environmental compatibility.

4. ANTI-TWISTING ELEMENT

Material: High-strength polyester braid positioned between inner and outer sheaths provides critical torsional resistance. This structural element prevents conductor rotation within the cable assembly during winding operations, dramatically extending cable service life in reeling applications.

5. OUTER SHEATH

Material: Halogen-free polyurethane outer jacket engineered for extreme abrasion resistance and environmental protection.

Color: Black finish provides UV resistance and professional appearance while maintaining thermal stability.

Technical Specifications and Performance Parameters

Electrical Ratings

Rated Voltage: 0.6/1 kV (600/1000V AC)
Maximum Operating Voltage (AC): 0.7/1.2 kV
Maximum Operating Voltage (DC): 0.9/1.8 kV
AC Test Voltage: 3.5 kV (5 minutes duration)
Current Capacity: According to DIN VDE 0298-4 standards

Thermal Performance

Maximum Conductor Temperature: 90°C continuous operation
Short Circuit Temperature: 250°C maximum (conductor)
Ambient Temperature Range (Fixed): -50°C to +80°C
Ambient Temperature Range (Flexible): -35°C to +80°C

Mechanical Properties

Maximum Tensile Load: 30 N/mm² on conductor
Torsional Stress Rating: ±50°/m
Minimum Bending Radius: Per DIN VDE 0298 Part 3
S-Type Directional Changes: 20 × D minimum distance

Environmental Resistance

Oil Resistance: Qualified per DIN EN 60811-404
Weather Resistance: Unrestricted outdoor and indoor use with full ozone, UV, and moisture resistance
Water Resistance: Verified through extensive long-term testing protocols

Operating Speed Limits

Gantry Operation (Reeling): No restriction on travel speed; manufacturer consultation recommended beyond 240 m/min
Trolley Operation (Festoon): Maximum 240 m/min travel speed

Quality Certifications

Standards Compliance: Based on DIN VDE 0250-814
Certifications: VDE Reg. Nr. 7519, GOST-R approved
Testing: Reversed bending test, roller bending test, torsional stress test

Control Cable Specifications - 42G × 2.5 mm²

The 42-core configuration with 2.5 mm² cross-section represents an optimal balance between signal capacity and mechanical flexibility for complex control applications. This construction provides 42 individually insulated conductors, each with 2.5 square millimeter cross-sectional area, suitable for transmitting control signals, sensor data, and low-voltage power distribution within automated machinery systems.

Cores × Cross Section	Conductor Ø (mm)	Outer Ø Min (mm)	Outer Ø Max (mm)	Bend Radius (mm)	Weight (kg/km)	Tensile Force (N)	Resistance (Ω/km)	Current (A)
12×2.5	2.0	23.4	25.4	127	910	900	8.21	30
18×2.5	2.0	23.3	25.3	127	1010	1350	8.21	30
24×2.5	2.0	26.2	29.2	146	1340	1800	8.21	30
30×2.5	2.0	29.4	32.4	162	1660	2250	8.21	30
36×2.5	2.0	30.3	33.3	167	1750	2700	8.21	30
42×2.5	2.0	33.5	36.5	183	2150	3150	8.21	30
56×2.5	2.0	40.1	43.1	216	2870	4200	8.21	30

Power Cable Configurations

In addition to control cable variants, the (N)SHTÖU-O/J series includes power cable configurations designed for heavy current transmission in mobile applications. These three-core designs with split earth conductors provide reliable power distribution for crane drives, conveyor motors, and other high-power industrial equipment.

Configuration	Conductor Ø (mm)	Outer Ø Max (mm)	Weight (kg/km)	Tensile Force (N)	Resistance (Ω/km)	Current (A)	SC Current (kA)
3×35+3×16/3	8.4	31.7	1990	3150	0.57	162	5.01
3×50+3×25/3	10.3	37.4	2810	4500	0.39	202	7.15
3×70+3×35/3	12.0	42.7	3860	6300	0.28	250	10.01
3×95+3×50/3	14.0	47.3	4950	8550	0.21	301	13.59
3×120+3×70/3	15.8	55.0	6440	10800	0.16	352	17.16

Installation and Handling Guidelines

Proper installation techniques are essential to achieving optimal cable performance and service life. The minimum bending radius specifications must be strictly observed during installation to prevent conductor damage or insulation compromise. For the 42G × 2.5 mm² configuration, the minimum dynamic bending radius of 183 millimeters ensures that internal mechanical stresses remain within acceptable limits during operation.

When installing cables on drum reeling systems, the cable should be wound with consistent tension to prevent loose coils that can lead to cable damage during operation. The anti-twisting braid construction allows for repeated winding and unwinding cycles, but proper alignment of the reel system is critical to prevent excessive side loading on the cable during travel.

Quality Assurance and Testing

Each cable undergoes comprehensive testing protocols to verify compliance with DIN VDE 0250-814 standards. Routine production testing includes conductor resistance verification, high-voltage dielectric testing at 3.5 kilovolts for five minutes duration, and dimensional inspection of all cable components. Additional type testing encompasses reversed bending cycles, roller bending fatigue tests, and torsional stress evaluation to confirm long-term mechanical reliability.

The VDE certification (Registration Number 7519) and GOST-R approval demonstrate compliance with both European and international quality standards, providing assurance of product consistency and performance reliability.

Ordering Information and Lead Time

Custom cable configurations and special designs can be manufactured upon request to meet specific application requirements. Standard production lead time for the quoted 42G × 2.5 mm² configuration is approximately 20 days from order confirmation. Expedited production schedules may be available for urgent requirements subject to manufacturing capacity.

All cables are manufactured at our facility in Anhui Province, China, and are available for collection FOB Shanghai port. Complete technical documentation, including test certificates and material compliance declarations, will be provided with each shipment to facilitate customs clearance and project documentation requirements.

Anhui Feichun Special Cable Co., Ltd. | 安徽飞纯特种电缆有限公司
Specialized Manufacturing of Industrial Cables | DIN VDE Certified Products
This specification is valid for 30 days from the date of issue



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