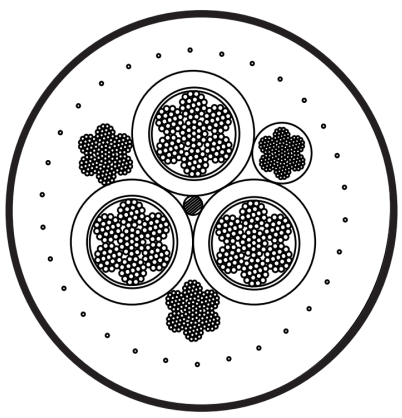
飞纯电缆 | FEICHUN CABLE

安徽飞纯特种电缆有限公司

Anhui Feichun Special Cable Co., Ltd.

(N)SHTÖU-J 0.6/1 kV

Flexible Reeling Cable with Optional Fiber Optic Elements



PRODUCT OVERVIEW

The (N)SHTÖU-J series represents a premium flexible low-voltage cable solution engineered for demanding reeling applications. Designed to withstand extreme mechanical stress conditions, this cable is optimized for continuous flexing operations in automated material handling systems, particularly for Electrified Rubber Tyred Gantry (ERTG) crane installations. The cable construction incorporates advanced rubber compounds and optional integrated fiber optic capabilities for simultaneous power and data transmission.

COMPLIANCE & STANDARDS

Primary Standard: DIN VDE 0250-814 | Secondary References: DIN EN 60228, DIN VDE 0295, DIN VDE 0293-308

CONSTRUCTION DETAILS

Cable Architecture

Conductor Material:	Bare annealed copper, stranded configuration Class 5 per DIN EN 60228 / DIN VDE 0295
Primary Insulation:	Ethylene propylene rubber compound Type 3GI3 conforming to DIN VDE 0207-20
Core Identification:	Color coding system per DIN VDE 0293-308 requirements
Core Configuration:	Concentrically stranded with optimized pitch length, segmented ground conductor and optical elements positioned in interstitial spaces
Inner Jacket:	Rubber compound Type 5GM3 per DIN VDE 0207-21 specifications
Reinforcement Layer:	Open-weave polyester textile braid, mechanically embedded within jacket material
Outer Sheath:	Premium rubber compound Type 5GM5 per DIN VDE 0207-21, enhanced abrasion resistance, oil-resistant, flame-retardant properties
Sheath Color:	Black (standard)
Cable Marking:	White inkjet printing: FEICHUN (N)SHTÖU-J [cores] × [cross-section] mm² [production week/year]

Integrated Optical Fiber Specifications

Parameter	G50/125µm	G62.5/125µm	E9/125µm
Fiber Type	Multimode Graded-Index	Multimode Graded-Index	Single-mode
Attenuation @ 850nm	≤2.9 dB/km	≤3.4 dB/km	—
Attenuation @ 1300nm	≤0.85 dB/km	≤0.95 dB/km	≤0.42 dB/km
Attenuation @ 1550nm	—	—	≤0.32 dB/km
Bandwidth @ 850nm	≥380 MHz·km	≥180 MHz·km	—
Bandwidth @ 1300nm	≥1100 MHz·km	≥480 MHz·km	—
Numerical Aperture	0.20 ± 0.015	0.275 ± 0.015	—
Chromatic Dispersion @ 1300nm	—	—	≤3.6 ps/(nm·km)
Chromatic Dispersion @ 1550nm	—	—	≤18.5 ps/(nm·km)

Note: Standard configuration includes 12 optical fibers with protective buffer tube. Custom fiber counts available upon request.

ELECTRICAL CHARACTERISTICS

Nominal Voltage U_0/U: 0.6/1 kV (600/1000 V)

Maximum Operating Voltage AC: 0.72/1.2 kV

Maximum Operating Voltage DC: 0.9/1.8 kV

Test Voltage (AC): 4.0 kV for 5 minutes

Current Rating Basis: Per DIN VDE 0298-4 methodology

THERMAL PERFORMANCE

Maximum Conductor Temperature: 90°C continuous operation

Short Circuit Temperature Limit: 250°C (max. 5 seconds)

Fixed Installation Temperature Range: -40°C to +80°C

Dynamic Operation Temperature Range: -40°C to +80°C

MECHANICAL PROPERTIES

Maximum Tensile Stress: 20 N/mm² on conductor

Torsional Capability: ±50°/m

Minimum Bend Radius:	Per DIN VDE 0298 Part 3 requirements
S-Type Reversal Distance:	≥20 × cable diameter
Maximum Travel Speed:	Up to 180 m/min (reeling operation)

CHEMICAL & ENVIRONMENTAL RESISTANCE

Flame Resistance:	IEC 60332-1 / EN 50265-2-1 compliant
Oil Resistance:	EN 60811-404 - ASTM Oil No. 2: 24 hours at 100°C
UV Resistance:	Suitable for outdoor applications
Water Resistance:	AD4 moisture conditions

TECHNICAL DATA TABLES

3-Core Design with Split Earth Conductor (3-Way Split)

Configuration (mm²)	Part Number	Conductor Ø max (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Min. Bend Radius (mm)	Weight (kg/km)	Max. Tensile Force (N)	Resistance @ 20°C (Ω/km)	Current Rating[1] (A)	Short Circuit Current (kA)
3×50+3×25/3	20166655	9.8	34.5	37.5	188	2580	3050	0.387	205	7.20
3×70+3×35/3	—	11.3	40.5	43.5	218	3495	4250	0.268	253	10.08
3×95+3×50/3	20164198	12.8	43.5	46.5	233	4385	5750	0.206	305	13.68
3×120+3×70/3	—	15.0	51.5	56.5	283	5685	7280	0.158	356	17.28
3×150+3×70/3	20161381	16.2	52.5	56.8	284	6565	9080	0.128	408	21.60
3×185+3×95/3	—	17.9	56.5	61.5	308	7985	11200	0.106	465	26.64
3×240+3×120/3	20160696	20.4	64.5	70.5	353	10485	14550	0.078	545	34.56
3×300+3×150/3	20074322	22.9	70.5	76.5	383	13350	18150	0.062	625	43.20
3×400+3×240/3	—	27.3	82.5	88.5	443	20950	24200	0.047	720	57.60

3-Core Design with Fiber Optics & Split Earth Conductor (2-Way Split)

Configuration (mm²)	Part Number	Conductor Ø max (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Min. Bend Radius (mm)	Weight (kg/km)	Max. Tensile Force (N)	Resistance @ 20°C (Ω/km)	Current Rating[1] (A)	Short Circuit Current (kA)
3×35+2×16/2+12FO	—	7.9	34.0	37.0	185	2135	2120	0.543	164	5.04
3×50+2×25/2+12G62.5	20166541	9.1	40.0	43.0	215	2945	3030	0.387	205	7.20
3×70+2×35/2+12FO	—	11.3	40.5	43.5	218	3415	4240	0.268	253	10.08
3×95+2×50/2+12FO	—	12.8	43.5	46.5	233	4275	5760	0.206	305	13.68
3×120+2×70/2+12G62.5	20165663	15.0	49.0	53.0	265	5715	7280	0.158	356	17.28
3×150+2×70/2+12G62.5	20129614	16.2	54.5	58.5	293	6635	9090	0.128	408	21.60

Configuration (mm²)	Part Number	Conductor Ø max (mm)	Cable Ø min (mm)	Cable Ø max (mm)	Min. Bend Radius (mm)	Weight (kg/km)	Max. Tensile Force (N)	Resistance @ 20°C (Ω/km)	Current Rating[1] (A)	Short Circuit Current (kA)
3×185+2×95/2+12G62.5	20165664	17.9	56.5	61.5	308	8090	11200	0.106	465	26.64
3×240+2×120/2+12G62.5	20166701	20.4	64.5	70.5	353	10080	14550	0.078	545	34.56
3×300+2×150/2+12FO	—	22.9	70.5	76.5	383	12685	18150	0.062	625	43.20

[1] **Current Rating:** Values shown are for rubber-insulated cables installed on open surfaces at 30°C ambient temperature per VDE 0298-4, Table 15. For items without part numbers, values are approximate and subject to confirmation upon order placement.

APPLICATION GUIDELINES

Primary Applications: The (N)SHTÖU-J cable series is specifically engineered for high-stress reeling operations in port terminals, container yards, and industrial automation systems. The robust construction ensures reliable performance under continuous flexing, torsional stress, and rapid acceleration/deceleration cycles typical of ERTG crane operations.

Installation Recommendations: Proper cable management systems including cable drums, festoon systems, or cable chains should be employed to maintain minimum bend radius requirements. Regular inspection intervals are recommended to ensure optimal service life.

Environmental Considerations: The cable's advanced rubber compounds provide excellent resistance to oils, chemicals, and UV radiation, making it suitable for both indoor and outdoor installations. The extended temperature range ensures reliable operation in extreme climatic conditions.

QUALITY ASSURANCE

All Feichun Cable products undergo rigorous quality control procedures in accordance with ISO 9001:2015 standards. Each production batch is subject to comprehensive electrical, mechanical, and dimensional testing to ensure conformity with specified performance parameters. Certificate of conformity and detailed test reports are available upon request.

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FEICHUN SPECIAL CABLES

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