FEICHUN CABLE

Technical Specification Sheet

PLANOFLEX NGFLGÖU Series - Low Voltage Flat Cables

Document Number: FC-TS-2025-002
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Standard: DIN VDE 0250-809



Product Family: PLANOFLEX
Type Designation: NGFLGÖU-J/-O
Application: Festoon Systems
Featured Model: 3×50+25 mm² N GFLGÖU

PLANOFLEX NGFLGÖU Series

Professional low voltage flat cable engineered specifically for festoon applications and mobile machinery connections. Designed to withstand high mechanical stresses and frequent bending operations in demanding industrial environments where reliable power transmission is critical for operational continuity.

300/500V Rated Voltage	**90°C** Max Temperature
-35°C to +80°C Operating Range	**180 m/min** Max Speed

Featured Configuration: 3×50+25 mm² N GFLGÖU

This configuration represents an optimal solution for high-power festoon applications requiring three main power conductors of 50 mm² cross-section plus one protective earth conductor of 25 mm². The design ensures maximum current carrying capacity while maintaining flexibility for continuous motion applications in overhead crane systems and gantry operations.

Product Overview and Applications

Primary Applications

The PLANOFLEX NGFLGÖU series is specifically engineered for flexible low voltage power and control applications in festoon systems and mobile machinery connections. The cable excels in environments with high mechanical stresses and frequent bending operations, particularly in applications requiring bending in one plane only. Primary deployment scenarios include material handling equipment, machine tools, overhead traveling cranes, gantry systems, and automated warehouse solutions where continuous power supply to moving components is essential.

VDE CERTIFIED | UL FILE E 113313 | GOST-R APPROVED | DIN VDE 0250-809 | OUTDOOR RATED

Electrical Characteristics

Rated Voltage (Uo/U)	300/500V (600V UL rating)
Maximum Permissible Operating Voltage AC	0.7/1.2 kV
Maximum Permissible Operating Voltage DC	0.9/1.8 kV
AC Test Voltage	2.5 kV (5 minutes duration)
Current Carrying Capacity	According to DIN VDE 0298-4 standards
Insulation Resistance	Per DIN VDE 0207 specifications

Physical and Mechanical Properties

Maximum Tensile Load on Conductor	15 N/mm²
Minimum Bending Radius	According to DIN VDE 0298 Part 3
Torsional Stress	Not permitted
Travel Speed - Gantry Operation	Not applicable (reeling operation)
Travel Speed - Trolley System	Up to 180 m/min (consult manufacturer beyond this limit)
Flat Cable Profile	Optimized for single-plane bending applications

Construction Specification

Conductor Material	Electrolytic copper, untinned
Conductor Class (≤25 mm²)	Class 6 - Extremely finely stranded per DIN VDE standards
Conductor Class (≥35 mm²)	Class 5 - Finely stranded per DIN VDE standards
Insulation Material	PROTOLON - EPR rubber compound 3GI3 (DIN VDE 0207 Part 20)
Core Identification (≤5 cores)	Color coded: green/yellow, black, blue, brown, grey
Core Identification (>5 cores)	Black cores with white numerical markings
Individual Screen (when specified)	Tinned copper wire braid, 30 MHz optimized, 60-80% coverage
Core Arrangement	Parallel configuration, bundles for >12 cores
Outer Sheath Material	CR rubber compound 5GM3 (DIN VDE 0207 Part 21), black

Environmental and Chemical Resistance

Maximum Conductor Temperature	90°C continuous operation
Short Circuit Temperature	250°C maximum
Ambient Temperature (Fixed Installation)	-50°C to +80°C
Ambient Temperature (Flexible Operation)	-35°C to +80°C
Oil Resistance	According to DIN VDE 0473-404, paragraph 10
Weather Resistance	Unrestricted outdoor and indoor use
UV and Ozone Resistance	Excellent resistance for outdoor applications
Moisture Resistance	Fully protected against moisture ingress

Technical Performance Data - Selected Configurations

Configuration	Part Number	Height (mm) Min/Max	Width (mm) Min/Max	Bending Radius Min (mm)	Weight (kg/km)	Max Tensile Force (N)	Resistance (Ω/km)	Current Capacity (A)
NGFLGÖU-J Power Cables								
4×25	20003513	13.6/14.4	41.9/43.4	72	1500	1500	0.78	138
4×35	20003515	14.8/16.7	47.0/49.9	84	2040	2100	0.55	170
4×50	**20003517**	**18.0/19.0**	**56.0/58.0**	**95**	**2830**	**3000**	**0.39**	**212**
4×70	20003519	20.3/21.3	63.2/65.2	107	3820	4200	0.27	263
5×16	20003523	12.2/12.7	45.1/47.6	64	1360	1200	1.21	104
7×25	20070764	14.8/15.6	72.6/75.9	78	2820	2625	0.78	138
7×35	5DG5868	16.4/17.4	83.7/87.0	87	3820	3675	0.55	170

Performance Notes

Current Carrying Capacity: Nominal values are calculated for rubber cables installed free in air at 30°C ambient temperature according to applicable technical standards. Actual installation conditions may require derating factors.
Bending Test Compliance: All configurations have been tested according to relevant DIN VDE standards for mechanical stress and flexural endurance under operational conditions.
Travel Speed Limitations: For festoon trolley systems operating beyond 180 m/min, consultation with Feichun Cable engineering team is recommended to ensure optimal cable selection and installation parameters.

3×50+25 mm² Configuration Advantages

The 3×50+25 mm² configuration represents an optimal balance between power handling capability and mechanical flexibility for demanding festoon applications. This configuration provides three main power conductors rated for high current capacity with an additional protective earth conductor, ensuring both operational performance and electrical safety compliance. The flat cable design minimizes space requirements while maximizing flexibility for continuous motion applications in industrial automation environments.

Quality Assurance and Testing

Compliance Standards	DIN VDE 0250-809, VDE specifications
International Approvals	UL File E 113313, GOST-R certification
Bending Test Protocol	Comprehensive flexural endurance testing
Environmental Testing	Temperature cycling, UV exposure, chemical resistance
Electrical Testing	High voltage testing, insulation resistance verification
Quality Management	ISO certified manufacturing processes

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FEICHUN SPECIAL CABLES

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