Anhui Feichun Special Cable Co., Ltd.

TECHNICAL SPECIFICATION DOCUMENT

Type PLANOFLEX (NGFLGOEU-O 7×1.5) RUBBER FLAT CABLE, STD DIN VDE 0250-809

Application Designation

Main Hoist – Crane CS 40/50 Festoon System

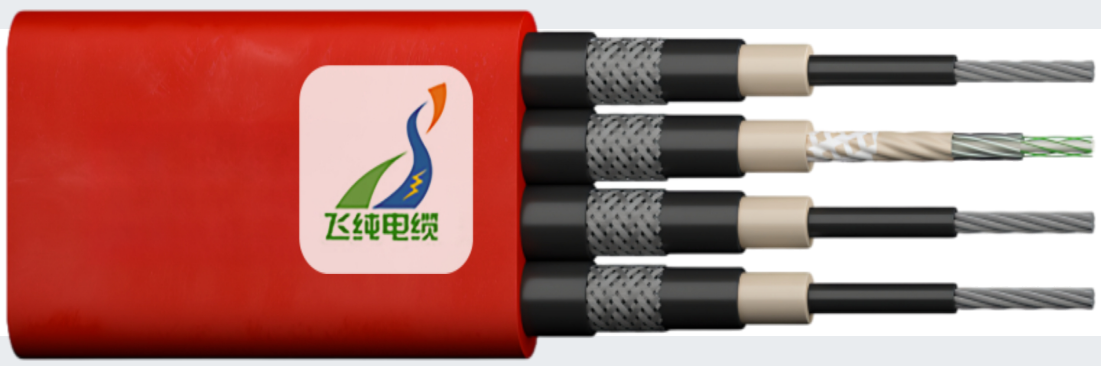
This flexible low voltage power and control cable is specifically designed for use on festoon systems and for connecting moveable parts of machine tools, material handling equipment, cranes, and other industrial machinery. The cable is engineered to withstand high mechanical stresses and frequent bending during operation, with optimal performance when bending occurs in one plane only.

FEATURED SPECIFICATION: 7 cores × 1.5 mm²

Configuration: 7 cores × 1.5 mm²
Rated Voltage: 300/500V (600V)
Cable Type: Flat Cable
Conductor Class: Class 6 (extremely fine)
Height Range: 5.5 - 6.0 mm
Width Range: 25 - 26.8 mm

Global Data

Brand: PLANOFLEX
Type Designation: NGFLGOEU-J/-O
Standard: DIN VDE 0250-809
Certifications/Approvals: VDE Marking; UL-File E 113313



Design Features

Conductor

Electrolytic copper, not tinned. The conductor specification varies based on cross-section to optimize flexibility and performance. For conductors up to 25 mm², extremely finely stranded class 6 construction is employed. For conductors above 35 mm², finely stranded class 5 construction is utilized.

Insulation - PROTOLON

Basic material EPR, Rubber compound 3GI3, conforming to specifications outlined in DIN VDE 0207, Part 20. This advanced insulation material provides superior electrical properties and mechanical durability.

Core Identification

For cables with up to 5 cores, color coding is applied using the following scheme: green/yellow (or black for version -O), black, blue, brown, and grey. For cables containing more than 5 cores, black insulation with white colored numbers is used to ensure clear identification.

Individual Screen

Braid screen constructed from tinned copper wires with transfer impedance optimized at 30 MHz. Surface coverage is approximately 60% for shielded cores and approximately 80% for twisted and shielded pairs, providing excellent electromagnetic interference protection.

Core Arrangement

Cores are arranged in parallel configuration. For cables containing more than 12 cores, parallel bundles are employed to maintain the flat cable profile while ensuring optimal electrical performance.

Outer Sheath

Basic material CR, Rubber compound 5GM3, conforming to specifications outlined in DIN VDE 0207, Part 21. The sheath is black in color and provides excellent protection against environmental factors and mechanical wear.

Marking

PLANOFLEX NGFLGOEU-J/-O (number of cores) × (cross-section) 600V, 90°C, (UL), PLANOFLEX (cross-section) AWG/(number of cores) (type of core) OUTDOOR

Electrical Parameters

Rated Voltage: 300/500V (600V)
Max. Permissible Operating Voltage AC: 0.7/1.2 kV
Max. Permissible Operating Voltage DC: 0.9/1.8 kV
AC Test Voltage: 2.5 kV (5 Min.)
Current Carrying Capacity: Acc. to DIN VDE 0298-4

Chemical Parameters

Resistance to Oil: Acc. to DIN VDE 0473-404, paragraph 10
Weather Resistance: Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture

Thermal Parameters

Max. Permissible Temperature at Conductor: 90 °C
Max. Short Circuit Temperature of Conductor: 250 °C
Ambient Temperature for Fixed Installation: min -50 °C ; max +80 °C
Ambient Temperature in Fully Flexible Operation: min -35 °C ; max +80 °C

Mechanical Parameters

Max. Tensile Load on the Conductor: 15 N/mm²
Torsional Stress: Not allowed (flat cable design)
Min. Bending Radius: Acc. to DIN VDE 0298 part 3
Travel Speed: Gantry (reeling operation): no application; Trolley (festoon system): guidance value up to 180 m/min (it is recommended to consult the manufacturer for speeds beyond 180 m/min).
Additional Tests: Bending test

Technical Data Tables

NGFLGOEU-J Control Cables

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[(2)] (A)	Short Circuit Current (kA)
3x1.5	—	5DG5751	1.5	5.7	6.2	11.7	12.5	19	130	68	13.3	24	0.21
4x1.5	20003476	5DG5711	1.5	5.7	6.2	15	15.8	19	170	90	13.3	24	0.21
5x1.5	—	5DG5712	1.5	5.5	6	18.5	20.1	18	210	113	13.3	24	0.21
7x1.5	**—**	**5DG5714**	**1.5**	**5.5**	**6**	**25**	**26.8**	**18**	**280**	**158**	**13.3**	**24**	**0.21**
8x1.5	20003480	5DG5715	1.5	5.5	6	27.5	29.3	18	310	180	13.3	24	0.21
10x1.5	—	5DG5717	1.5	6.2	6.7	35.5	37	20	440	225	13.3	24	0.21
12x1.5	20003483	5DG5718	1.5	6.3	6.8	42	43.5	20	530	270	13.3	24	0.21
24x1.5	20003485	5DG5720	1.5	11.5	12.3	51	53.2	62	1040	540	13.3	24	0.21
42x1.5	20003470	5DG5653	1.5	15.1	16.1	70.2	72.3	81	1920	945	13.3	24	0.21
4x2.5	20003487	5DG5721	2	6.8	7.3	18.5	19.5	22	260	150	7.98	32	0.36

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[2] (A)	Short Circuit Current (kA)
5x2.5	—	5DG5722	2	6.6	7.4	22.9	24.6	22	320	188	7.98	32	0.36
7x2.5	20003490	5DG5724	2	6.8	7.4	31	32.8	22	440	263	7.98	32	0.36
8x2.5	20003492	5DG5725	2	6.8	7.4	34.1	35.9	22	490	300	7.98	32	0.36
10x2.5	—	5DG5727	2	7.4	8	43	45.3	24	660	375	7.98	32	0.36
12x2.5	20003494	5DG5728	2	7.4	8	50.6	53.5	24	780	450	7.98	32	0.36
24x2.5	20003496	5DG5730	2	14.8	15.6	65.4	68	78	1690	900	7.98	32	0.36
7x(3x1)	20037062	5DG5483	1.3	8.7	10.3	49.3	51.8	41	770	315	19.5	19	0.14

NGFLGOEU-J Power Cables

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[2] (A)	Short Circuit Current (kA)
4x4	20003498	5DG5731	2.8	8.4	8.9	22.5	23.5	36	390	240	4.95	43	0.57
4x6	20003503	5DG5741	3.5	9	9.5	25.4	26.9	38	500	360	3.3	56	0.86
4x10	20003509	5DG5765	4.5	10.5	11	30.1	32.6	44	750	600	1.91	78	1.43
4x16	20003511	5DG5766	5.6	12.1	12.9	36	37.5	65	1060	960	1.21	104	2.29
4x25	20003513	5DG5767	6.6	13.6	14.4	41.9	43.4	72	1500	1500	0.78	138	3.58
4x35	20003515	5DG5768	8.1	14.8	16.7	47	49.9	84	2040	2100	0.55	170	5.01
4x50	20003517	5DG5770	9.5	18	19	56	58	95	2830	3000	0.39	212	7.15
4x70	20003519	5DG5771	11.1	20.3	21.3	63.2	65.2	107	3820	4200	0.27	263	10.01
4x95	20003521	5DG5772	12.9	23.1	24.1	72.6	74.6	121	4930	5700	0.21	316	13.59
4x120	—	5DG5773	15	24.2	27.2	79.2	83.2	136	6220	7200	0.16	370	17.16
5x4	—	5DG5732	2.8	8.5	9	28.9	31.2	36	510	300	4.95	43	0.57
5x6	20003505	5DG5742	3.5	9.1	9.6	31.8	34.1	38	640	450	3.3	56	0.86
5x10	—	5DG5687	4.5	10.5	11.3	39.2	41.6	45	960	750	1.91	78	1.43
5x16	20003523	5DG5776	5.6	12.2	12.7	45.1	47.6	64	1360	1200	1.21	104	2.29
7x4	20003501	5DG5734	2.8	8.4	9	38.5	40.9	36	690	420	4.95	43	0.57
7x6	20003507	5DG5744	3.5	9	9.6	42.9	45.3	38	870	630	3.3	56	0.86
7x10	—	5DG5865	4.5	10.5	11.3	53	55.9	45	1320	1050	1.91	78	1.43
7x16	—	5DG5866	5.6	12.6	13.4	60.7	63.9	67	1990	1680	1.21	104	2.29
7x25	20070764	5DG5867	6.6	14.8	15.6	72.6	75.9	78	2820	2625	0.78	138	3.58
7x35	—	5DG5868	8.1	16.4	17.4	83.7	87	87	3820	3675	0.55	170	5.01

(N)GFLGOEUO Control Cables with Individually Screened Cores

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[2] (A)	Short Circuit Current (kA)
12x1(C)	20003474	5DG5670	1.3	6.6	7.1	48.2	51.3	21	660	180	19.5	19	0.14
4x1.5(C)	20155763	5DG5880	1.5	6.8	7.4	18.5	19.5	22	250	90	13.3	24	0.21
8x1.5(C)	—	5DG5884	1.5	6.8	7.4	35.1	35.1	22	510	180	13.3	24	0.21
12x1.5(C)	20003527	5DG5888	1.5	7.4	8	51.7	55	24	780	270	13.3	24	0.21

(N)GFLGOEU-O Bus Cables

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[2] (A)	Short Circuit Current (kA)
4x(2x1)C	20003528	5DG5890	1.3	10.5	11.3	31.8	33.8	45	630	120	19.5	19	0.14
6x(2x2.5)C	20054902	5DG5898	2	14.2	15.2	60	62.7	76	1680	450	7.98	32	0.36
7x(2x1)C	20003529	5DG5893	1.3	10.5	11.3	53.1	56	45	1090	210	19.5	19	0.14

(N)GFLGOEU-J Power Cables with Individual Screen

Number of cores × cross section	Part number	MLFB Number	Conductor diameter max. (mm)	Min. Height (mm)	Max. Height (mm)	Min. Width (mm)	Max. Width (mm)	Bending radius min. (mm)	Weight (kg/km)	Tensile force max. (N)	Resistance at 20°C (Ω/km)	Current capacity[(2)] (A)	Short Circuit Current (kA)
4x4(C)	—	5DG5484	2.8	9.2	10.2	26.3	29.3	41	550	240	4.95	43	0.57
4x6(C)	—	5DG5485	3.5	9.5	11.1	28.8	31.8	44	665	360	3.3	56	0.86
4x10(C)	—	5DG5486	4.5	11.7	13.3	36	39	67	1060	600	1.91	78	1.43
4x16(C)	—	5DG5487	5.6	12.8	14.4	40.2	43.2	72	1360	960	1.21	104	2.29
4x25(C)	—	5DG5488	6.6	14.8	16.8	47.3	50.3	84	1980	1500	0.78	138	3.58
4x35(C)	—	5DG5489	8.1	16.9	18.9	53.4	57.4	95	2590	2100	0.55	170	5.01
4x50(C)	—	5DG5490	9.5	19.5	21.5	62	66	108	3590	3000	0.39	212	7.15
4x70(C)	—	5DG5491	11.1	21.9	23.9	69.8	73.8	120	4630	4200	0.27	263	10.01
4x95(C)	—	5DG5492	12.9	24.2	27.2	78.7	83.7	136	5950	5700	0.21	316	13.59

(2) Nominal current carrying capacity for rubber cables installed free in air, at 30°C ambient temperature (see also technical appendixes).

FEICHUN SPECIAL CABLES

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