

## PLANOFLEX NGFLGOEU: low voltage flat cables for festoon application



### Application

Flexible low voltage power and control cable, for use on festoon systems and for connecting moveable parts of machine tools, material handling equipment, etc., associated with high mechanical stresses and frequent bending during operation and for bending in one plane only.

### Global data

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

### Design features

Conductor	Electrolytic copper, not tinned: - up to 25 mm <sup>2</sup> : extremely finely stranded, class 6 - above 35 mm <sup>2</sup> : finely stranded, class 5
Insulation	PROTOLON
Core identification	Basic material EPR, Rubber compound 3GI3 (refer also to DIN VDE 0207, Part 20) Up to 5 cores, colored: green/yellow (or black for version...-O) black, blue, brown, grey; For more than 5 cores: black with white colored numbers
Individual screen	Braid screen made of tinned copper wires, transfer impedance optimized at 30 MHz. Surface covered: approx. 60% for shielded cores, approx. 80% for twisted and shielded pairs.
Core arrangement	Parallel, for more than 12 cores: parallel bundles
Outer sheath	Basic material CR, Rubber compound 5GM3 (refer also to DIN VDE 0207, Part 21) Colour: black
Marking	<VDE>PLANOFLEX NGFLGOEU-J/-O (number of cores)x(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 description	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 the 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/mm <sup>2</sup>
Torsional stress	Not allowed
Min. bending radius	Acc. to DIN VDE 0298 part 3
Travel speed	- Gantry (reeling operation): no application; - Trolley (festoon system): guidance value up to 180m/min (it is recommended to consult the manufacturer for speeds beyond 180m/min).
Additional tests	Bending test

Number of cores x cross section	Part number	MLFB Number	Conductor diameter max. mm	Min. Height (for flat cable) mm	Max. Height (for flat cable) mm	Min. Width (for flat cable) mm	Max. Width (for flat cable) mm	Bending radius free moving min. mm	Weight (ca.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for install. free in air (2) A	Short Circuit Current (conductor) kA
<b>NGFLGOEU-J control cables</b>													
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
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
<b>NGFLGOEU-J power cables</b>													
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
<b>(N)GFLGOEU-O control cables with individually screened cores</b>													
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

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(N)GFLGOEU-O bus cables													
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													
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 appendices).