

RONDOFLEX (N)GRDG0EU

Low voltage round cable for festoon application



Application

Flexible low voltage power and control cable, for use on festoon systems and for connecting movable parts of machine tools, material handling equipment, etc. Suitable for application under high mechanical stresses and frequent bending during operation.

Global data

Brand	RONDOFLEX
Type designation	(N)GRDG0EU-J/-O
Standard	Based on DIN VDE 0250-814
Certifications / Approvals	VDE Reg. Nr. 7841; GOST-R

Design features

Conductor	Bare electrolytic copper, finely stranded, class 5
Insulation	PROTOLON MS High grade special compound based on high-quality EPR (at least GI3); improved mechanical and electrical characteristics
Core identification	Best identification as a result of light colored insulation with numbers printed in black for power and control cables, earth conductor green/ yellow (acc. to DIN VDE 0293)
Individual screen	Braid screen made of tinned copper wires, transfer impedance optimized at 30 MHz. Surface covered: at least 60% for individually shielded cores; at least 80% for twisted and shielded pairs
Core arrangement	Laid-up in a maximum of 3 layers
Inner sheath	Basic material EPR, Rubber compound GM1b Colour: black
Outer sheath	High grade special compound (at least 5GM3), based on PCP; Color: black
Marking	RONDOFLEX (N)GRDG0EU-J/-O VDE-Reg.-No.

Electrical parameters

Rated voltage	0.6/1 kV (600/1000V)
Max. permissible operating voltage AC	0.7/1.2 kV
Max. permissible operating voltage DC	0.9/1.8 kV
AC Test Voltage	3.5 kV (5 Min.)
Current Carrying Capacity description	Acc. to DIN VDE 0298-4: - single core, table 15-column 2 - multicore, table 15-column 4

Chemical parameters

Resistance to oil	Acc. to DIN EN 60811-404 and DIN VDE 0473-811-404, 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 ²
Torsional stress	± 25 °/m
Min. bending radius	Acc. to DIN VDE 0298 part 3
Min. distance with S-type directional changes	20 x D
Travel speed	- Trolley (festoon system): up to 240 m/min (it is recommended to consult the manufacturer for speeds beyond 240 m/min); - Reeling operation: 60 m/min.
Additional tests	Bending test

Number of cores x cross section	Part number	MLFB Number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. 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
(N)GRDGOEU-O power cables, single-core design											
1x25	20003532	5DG6610	6.7	11.4	12.6	63	330	370	0.78	138	3.58
1x35	20003533	5DG6611	8	12.3	13.9	70	430	520	0.55	170	5.01
1x50	20003534	5DG6612	9.5	15	16.6	83	620	750	0.39	212	7.15
1x70	20003535	5DG6613	11	16.3	18.3	92	830	1050	0.27	263	10.01
1x95	20003536	5DG6614	12.8	18.5	20.5	103	1070	1420	0.21	316	13.59
1x120	20003537	5DG6615	14.4	20.3	22.3	112	1330	1800	0.16	370	17.16
1x150	20003538	5DG6616	16.4	22.7	24.7	124	1640	2250	0.13	424	21.45
1x185	20003539	5DG6617	17.8	24.6	27.6	138	2010	2770	0.11	484	26.46
1x240	20003540	5DG6618	20.9	28.9	31.9	160	2650	3600	0.08	567	34.32
(N)GRDGOEU-J power cables, 3-core design, earth conductor splitted into three parts											
3x35+3x16/3	20003544	5DG6631	8	27.3	30.3	152	1780	1570	0.55	170	5.01
3x50+3x25/3	20003545	5DG6632	9.5	33	36	180	2570	2250	0.39	212	7.15
3x70+3x35/3	20003546	5DG6633	11	38.9	41.9	210	3570	3150	0.27	263	10.01
(N)GRDGOEU-J power cables, 4-core design											
4x4	20003550	5DG6642	2.5	13.6	15.2	76	350	240	4.95	43	0.57
4x6	20003551	5DG6643	3	15.9	17.9	90	480	360	3.3	56	0.86
4x10	20003552	5DG6644	4	18	20	100	680	600	1.91	78	1.43
4x16	20003553	5DG6645	5.7	23.3	25.3	127	1110	960	1.21	104	2.29
4x25	20003554	5DG6646	6.8	26.9	29.9	150	1610	1500	0.78	138	3.58
4x35	20003555	5DG6647	8.1	30.1	33.1	166	2100	2100	0.55	170	5.01
4x50	20003556	5DG6648	9.6	36.1	39.1	196	3010	3000	0.39	212	7.15
(N)GRDGOEU-J power cables, 5-core design											
5x4	20003559	5DG6652	2.5	15.7	17.7	89	450	300	4.95	43	0.57
5x6	20003560	5DG6653	3	17.5	19.5	98	580	450	3.3	56	0.86
5x10	20003561	5DG6654	4	20.2	22.2	111	860	750	1.91	78	1.43
5x16	20003562	5DG6655	5.7	24.5	27.5	138	1340	1200	1.21	104	2.29
5x25	20003563	5DG6656	6.8	29.9	32.9	165	1990	1870	0.78	138	3.58
5x35	20003564	5DG6657	8.1	34.7	37.7	189	2700	2620	0.55	170	5.01
(N)GRDGOEU-J control cables											
12x1,5	20003568	5DG6662	1.6	16.2	18.2	91	460	270	13.3	24	0.21
18x1,5	20003569	5DG6663	1.6	18.7	20.7	104	630	400	13.3	24	0.21
24x1,5	20003570	5DG6664	1.6	22.1	24.1	121	840	540	13.3	24	0.21
30x1,5	20003571	5DG6665	1.6	23.3	25.3	127	950	670	13.3	24	0.21
36x1,5		5DG6666	1.6	24.6	27.6	138	1090	810	13.3	24	0.21
4x2,5	20003549	5DG6641	2	11.8	13.4	67	250	150	7.98	32	0.36
7x2,5	20003574	5DG6671	2	15.3	17.4	87	430	260	7.98	32	0.36
12x2,5	20003575	5DG6672	2	18	20	100	600	450	7.98	32	0.36
18x2,5	20003576	5DG6673	2	21.5	23.5	118	870	670	7.98	32	0.36
24x2,5	20003577	5DG6674	2	24	27	135	1140	900	7.98	32	0.36

Number of cores x cross section	Part number	MLFB Number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. 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
30x2,5	20003578	5DG6675	2	26.4	29.4	147	1360	1120	7.98	32	0.36
36x2,5	20003579	5DG6676	2	28.7	31.7	159	1550	1350	7.98	32	0.36
24x3,5		5DG6912	2.4	34.6	37.6	188	2160	1260	5.55	41	0.5
30x3,5		5DG6911	2.4	36.4	39.4	197	2450	1570	5.55	41	0.5
(N)GRDG0EU-O bus cables											
3x(2x1)C	20003590	5DG6689	1.3	20.8	22.8	114	690	90	19.5	19	0.14
6x(2x0,5)C	20003593	5DG6693	0.9	21.6	24.6	123	800	90	39	11	0.07
6x(2x1)C	20003594	5DG6694	1.3	27	30.2	151	1230	180	19.5	19	0.14
9x(2x0,5)C		5DG6691	0.9	28.3	31.3	157	1340	130	39	11	0.07
9x(2x1)C	20003592	5DG6692	1.3	35.3	38.3	192	1930	270	19.5	19	0.14
12x(2x0,5)C		5DG6521	0.9	29.8	32.8	164	1540	180	39	11	0.07
12x(2x1)C	20038334	5DG6696	1.3	36.3	39.3	197	2020	360	19.5	19	0.14
12x1(C)	20003582	5DG6681	1.3	17.6	19.6	98	540	180	19.5	19	0.14

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

NOTES

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