RONDOFLEX (N)GRDGOEU 0,6/1 kV: low voltage round cables 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)GRDGOEU-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

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 - main cores	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/mm²
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

Prysmian Kabel und Systeme GmbH
Alt Moabit 91D, 10559 Berlin
phone: +49 30 3675 40
email: kontakt@prysmiangroup.com

Number of cores x cross section	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius free moving min. mm	Weight (approx.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity free in air (2) A	Short Circuit Current (conductor) kA
(N)GRDGOEU-O power cables, single-core design										
1x25	20003532	6.7	11.4	12.6	63	330	370	0.7839	138	3.58
1x35	20003533	8	12.3	13.9	70	430	520	0.554	170	5.01
1x50	20003534	9.5	15	16.6	83	620	750	0.386	212	7.15
1x70	20003535	11	16.3	18.3	92	830	1050	0.272	263	10.01
1x95	20003536	12.8	18.5	20.5	103	1070	1420	0.206	316	13.59
1x120	20003537	14.4	20.3	22.3	112	1330	1800	0.161	370	17.16
1x150	20003538	16.4	22.7	24.7	124	1640	2250	0.129	424	21.45
1x185	20003539	17.8	24.6	27.6	138	2010	2770	0.106	484	26.46
1x240	20003540	20.9	28.9	31.9	160	2650	3600	0.0801	567	34.32
(N)GRDGOEU-J power cables, 3-core design, earth conductor splitted into three parts										
3x35+3x16/3	20003544	8	27.3	30.3	152	1780	1570	0.554	170	5.01
3x50+3x25/3	20003545	9.5	33	36	180	2570	2250	0.386	212	7.15
3x70+3x35/3	20003546	11	38.9	41.9	210	3570	3150	0.272	263	10.01
(N)GRDGOEU-J power cables, 4-core design										
4x4	20003550	2.5	13.6	15.2	76	350	240	4.95	43	0.57
4x6	20003551	3	15.9	17.9	90	480	360	3.3	56	0.86
4x10	20003552	4	18	20	100	680	600	1.91	78	1.43
4x16	20003553	5.7	23.3	25.3	127	1110	960	1.21	104	2.29
4x25	20003554	6.8	26.9	29.9	150	1610	1500	0.7839	138	3.58
4x35	20003555	8.1	30.1	33.1	166	2100	2100	0.554	170	5.01
4x50	20003556	9.6	36.1	39.1	196	3010	3000	0.386	212	7.15
(N)GRDGOEU-J power cables, 5-core design										
5x4	20003559	2.5	15.7	17.7	89	450	300	4.95	43	0.57
5x6	20003560	3	17.5	19.5	98	580	450	3.3	56	0.86
5x10	20003561	4	20.2	22.2	111	860	750	1.91	78	1.43
5x16	20003562	5.7	24.5	27.5	138	1340	1200	1.21	104	2.29
5x25	20003563	6.8	29.9	32.9	165	1990	1870	0.7839	138	3.58
5x35	20003564	8.1	34.7	37.7	189	2700	2620	0.554	170	5.01
(N)GRDGOEU-J control cables										
12x1,5	20003568	1.6	16.2	18.2	91	460	270	13.3	24	0.21
18x1,5	20003569	1.6	18.7	20.7	104	630	400	13.3	24	0.21
24x1,5	20003570	1.6	22.1	24.1	121	840	540	13.3	24	0.21
30x1,5	20003571	1.6	23.3	25.3	127	950	670	13.3	24	0.21
36x1,5	20161194	1.6	24.6	27.6	138	1090	810	13.3	24	0.21
4x2,5	20003549	2	11.8	13.4	67	250	150	7.98	32	0.36
7x2,5	20003574	2	15.3	17.4	87	430	260	7.98	32	0.36
12x2,5	20003575	2	18	20	100	600	450	7.98	32	0.36
18x2,5	20003576	2	21.5	23.5	118	870	670	7.98	32	0.36
24x2,5	20003577	2	24	27	135	1140	900	7.98	32	0.36
30x2,5	20003578	2	26.4	29.4	147	1360	1120	7.98	32	0.36

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36x2,5	20003579	2	28.7	31.7	159	1550	1350	7.98	32	0.36
24x3,5	20181767	2.4	34.6	37.6	188	2160	1260	5.55	41	0.5
30x3,5	20198601	2.4	36.4	39.4	197	2450	1570	5.55	41	0.5
36x3,5	20232165	2.4	39.5	39.5	198	2500	1890	5.55	41	0.5
(N)GRDGOEU-O bus cables										
3x(2x1)C	20003590	1.3	20.8	22.8	114	720	90	19.5	19	0.14
3x(2x1,5)C	20168353	1.6	21.9	23.9	120	770	130	13.3	19	0.21
4x(2x1,5)C	20091034	1.6	23	26	130	910	180	13.3	19	0.21
6x(2x0,5)C	20003593	0.9	21.6	24.6	123	830	90	39	19	0.07
6x(2x1)C	20003594	1.3	27.2	30.2	151	1280	180	19.5	19	0.14
6x(2x1,5)C	20003595	1.6	29.1	32.1	161	1360	180	19.5	19	0.14
9x(2x0,5)C		0.9	28.3	31.3	157	1340	130	39	11	0.07
9x(2x1)C	20003592	1.3	35.3	38.3	192	1930	270	19.5	19	0.14
12x(2x0,5)C	20006907	0.9	29.8	32.8	164	1540	180	39	11	0.07
12x(2x1)C	20038334	1.3	36.3	39.3	197	2020	360	19.5	19	0.14
12x1(C)	20003582	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 appendixes).

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