

RONDOFLEX(CHAIN) (N)GRDG0EU / (N)GRDGC0EU: low voltage cables for energy chains



Application

Applicable in all chain systems (e.g. container cranes, stacking cranes, indoor cranes, material handling equipment). Especially suitable in applications where, due to the outdoor installation, long travel distances or high travel speed, high performances are expected from the cable (such as long lifetime, full reliability, resistance to abrasion, etc.).

Global data

Brand	RONDOFLEX(CHAIN)
Type designation	(N)GRDGC0EU-J
Type designation	(N)GRDG0EU-J/-O
Standard	Based on DIN VDE 0250-814
Certifications / Approvals	GOST-R

Design features

Conductor	Bare electrolytic copper conductor, finely stranded, class 5. Earth conductor made of bare electrolytic copper, extremely finely stranded, class FS (better than class 5).
Insulation	PROTOLON MS High grade insulation compound based on EPR (at least 3GI3); improved mechanical and electrical performance. Alternative for control cables: ETFE.
Core identification	Light colored compound with black number prints, earth yellow-green.
Core arrangement	Up to 10 ² mm: 4-core design; From 16 ² mm: 3-energy cores and splitted earth conductor into three parts.
Screen	Braid screen made of tinned copper wires. Surface covered >80%, transfer impedance <100mOhm/m at <= 30MHz
Inner sheath	Special compound based on EPR (at least GM1b); color: black
Outer sheath	High grade compound based on EVA with excellent abrasion and aging performances. Color: black.
Marking	RONDOFLEX (CHAIN) (N)GRDG0EU (number of cores)x(cross section) 0,6/1 kV

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.)
EMC	Given thanks to the special cable design
Current Carrying Capacity description	According to DIN VDE 0298, Part 4: - single cores: table 15-section 2; - multi cores: table 15-section 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	Not allowed
Min. bending radius	Acc. to DIN VDE 0298 part 3
Travel speed	- In chain systems: up to 240 m/min (note: trouble free operation is influenced by several factors, among all the chain length. For long chain system we recommend to operate at lower speed).
Additional tests	Bending test, abrasion test, practical test on owned long-distance testing facility.

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 (1) A	Short Circuit Current (conductor) kA
(N)GRDGOEU-O power cables, single-core design											
1x16	20003427	5DG4011	5.7	7.6	9.7	39	210	240	1.21	99	2.29
1x25	20003428	5DG4012	7.1	10.2	12.2	61	330	370	0.78	131	3.58
1x35	20168373	5DG4013	8.3	12.1	14.1	71	445	520	0.55	162	5.01
1x50	20003429	5DG4014	9.8	13.9	15.9	80	620	750	0.39	202	7.15
1x70	20003430	5DG4015	11.6	15.8	17.9	90	830	1050	0.27	250	10.01
1x95	20003431	5DG4016	13.8	19.1	21.1	106	1120	1420	0.21	301	13.59
1x120	20167027	5DG4017	14.9	20.8	22.8	114	1390	1800	0.16	352	17.16
1x150	20003432	5DG4018	17.2	23	26	130	1740	2250	0.13	404	21.45
1x185	20047699	5DG4019	18	25.2	28.2	141	2090	2770	0.11	461	26.46
1x240	20086404	5DG4020	22.5	29.9	32.9	165	2830	3600	0.08	540	34.32
(N)GRDGCGOEU-O screened power cables, single-core design											
1x16C		5DG4211	5.7	10.1	12.1	61	320	240	1.21	99	2.29
1x25C		5DG4212	7.1	12.8	14.8	74	450	370	0.78	131	3.58
1x35C	20003445	5DG4213	8.3	13.7	15.7	79	540	520	0.55	162	5.01
1x50C	20003446	5DG4214	9.8	15.7	17.7	89	740	750	0.39	202	7.15
1x70C	20003447	5DG4215	11.6	18.7	20.7	104	1020	1050	0.27	250	10.01
1x95C	20003448	5DG4216	13.8	20.8	22.8	114	1260	1420	0.21	301	13.59
1x120C	20008791	5DG4217	14.9	22.8	24.8	124	1580	1800	0.16	352	17.16
1x150C		5DG4218	17.2	25.6	28.6	143	2000	2250	0.13	404	21.45
1x185C	20003449	5DG4219	18	27.7	30.7	154	2370	2770	0.11	461	26.46
1x240C		5DG4220	22.5	31.9	34.9	175	3130	3600	0.08	540	34.32
(N)GRDGOEU-J multicore power cables											
4x2,5	20025432	5DG4110	2	9.9	11.5	46	200	150	7.98	30	0.36
4x4	20003433	5DG4111	2.9	12.7	14.7	74	320	240	4.95	41	0.57
4x6	20003434	5DG4112	3.6	14.2	16.2	81	430	360	3.3	53	0.86
4x10	20003435	5DG4113	4.6	16.7	18.7	94	670	600	1.91	74	1.43
4x16	20003436	5DG4114	5.9	21.2	23.2	116	1020	960	1.21	99	2.29
4x25	20003437	5DG4115	7.2	26.5	29.5	148	1600	1500	0.78	131	3.58
3x35+3x16/3	20024514	5DG4116	8.1	26.4	29.4	147	1770	1570	0.55	162	5.01
3x50+3x25/3	20026619	5DG4117	10	31.5	34.5	173	2560	2250	0.39	202	7.15
3x70+3x35/3	20042007	5DG4119	11.9	37.6	40.6	203	3550	3150	0.27	250	10.01
5x6	20003438	5DG4122	3.6	15.8	17.8	89	530	450	3.3	53	0.86
5x10	20003439	5DG4123	4.6	19.7	21.7	109	850	750	1.91	74	1.43
5x16	20003440	5DG4124	5.9	23.4	25.4	127	1300	1200	1.21	99	2.29
(N)GRDGCGOEU-J multicore power cables, overall screened											
4x2,5C	20003450	5DG4240	1.9	11.2	13.2	66	310	150	7.98	30	0.36
4x4C	20003451	5DG4241	2.9	15.2	17.2	86	490	240	4.95	41	0.57
4x6C		5DG4242	3.6	17	19	95	650	360	3.3	53	0.86
4x10C	20003452	5DG4243	4.6	19.2	21.2	106	870	600	1.91	74	1.43
3x16+3x2,5C	20003453	5DG4254	5.9	20.3	22.3	112	1050	720	1.21	99	2.29
3x25+3x4C	20003454	5DG4255	7.2	25.7	28.7	144	1610	1120	0.78	131	3.58

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 (1) A	Short Circuit Current (conductor) kA
3x35+3x6C	20003455	5DG4256	8.1	28.4	31.4	157	2140	1570	0.55	162	5.01
3x50+3x25/3	20003456	5DG4257	10	34.9	37.9	190	3080	2250	0.39	202	7.15
3x70+3x35/3	20003457	5DG4258	11.8	39.8	42.8	214	4090	3150	0.27	250	10.01
3x95+3x50/3	20099906	5DG4270	13.8	43.7	46.7	234	5080	4270	0.21	301	13.59
5x16C	20003459	5DG4264	5.9	25.7	28.7	144	1630	1200	1.21	99	2.29
(N)GRDGOEU-J control cables											
12x1,5	20154051	5DG4152	1.5	11.7	13.7	69	305	270	13.3	23	0.21
24x1,5	20003441	5DG4154	1.5	19.9	21.9	110	710	540	13.3	23	0.21
7x2,5		5DG4141	1.9	11.3	13.3	67	290	260	7.98	30	0.36
12x2,5	20003442	5DG4190	1.9	15.3	17.4	87	490	450	7.98	30	0.36
18x2,5	20003443	5DG4191	1.9	19.5	21.5	108	760	670	7.98	30	0.36
24x2,5	20003444	5DG4192	1.9	22.5	24.5	123	1020	900	7.98	30	0.36
(N)GRDGOEU-J overall screened control cables											
12x1,5C	20007106	5DG4252	1.5	14.6	16.6	83	490	180	7.98	23	0.36
5x2,5C	20007107	5DG4260	1.9	12.7	14.7	74	435	270	13.3	30	0.21
(N)GRDGOEU-O bus cables											
1x(2x0,5)C		5DG4***	0.9	8	10	40	135	10	39	10	0.07
(4x2x0,5)C	20007108	5DG4279	0.9	17.6	19.6	98	500	60	39	10	0.07
4x(2x0,5)C	20003460	5DG4280	0.9	19	21	105	590	60	39	10	0.07
6x(2x0,5)C	20003461	5DG4281	0.9	22.2	24.2	121	820	90	39	10	0.07
6x(2x1)C	20003458	5DG4259	1.3	26.3	29.3	147	1130	180	19.5	18	0.14
Fiber Optic											
6G62,5/125μ	20003462	5DG4290		12.6	14.6	73	250	500			
12G62,5/125μ	20003463	5DG4291		12.6	14.6	73	250	500			
6E9/125μ	20003464	5DG4292		12.6	14.6	73	250	500			
18G50/125μ	20003465	5DG4293		12.6	14.6	73	250	500			
12G50/125μ	20003466	5DG4294		12.6	14.6	73	250	500			
18G62,5/125μ	20024515	5DG4295		12.6	14.6	73	250	500			
6G50/125μ	20060691	5DG4296		12.6	14.6	73	250	500			

(1) Nominal current carrying capacity for rubber cables laid on a surface, at 30°C ambient temperature (see also VDE 0298-4, Table 15).