FLAMEBLOCKER RZ1-K 0.6/1kV

IEC 60502-1 and based on UNE 21123-4

– XLPE insulated and LSOH sheathed flexible power cable

Applications: For the supply of electrical energy, in urban grids, building installations, etc. Special for installations where fire and emissions of smoke and toxic fumes create a potential threat. Cables may be laid directly in ground if installed properly and carefully acc. to REN leaf 9000 guide. Not suitable for use in water

Standard length cable packing: 500 or 1000m on drums. Other forms of packing and delivery are available on request

Construction

Conductors	Annealed copper, flexible conductor class 5 according to IEC 60228
Insulation	Special XLPE compound acc. to IEC 60502-1
Sheath	Thermoplastic halogen - free compound type ST8 acc. to IEC 60502-1
Rated voltage $U_o/U/U_m$	AC 0,6/1 (1,2) kV, DC 0,9/1,5 kV*

* In DC systems, cables with U_o/U of 0,6/1kV can be used, the highest operating voltages of which are 1,8 kV conductor/conductor and 0,9 kV conductor/earth, which should not be exceeded.

Colour of sheath	green or black or grey (other colours available at customer request)	
Core identification	(other colours available at customer request)	
	with protective conductor (G)	**without protective conductor (X)**
1-core	Green-yellow	Black
2-core	-	Blue, brown
3-core	Green-yellow, blue, brown	Brown, black, grey
4-core	Green-yellow, brown, black, grey	Blue, brown, black, grey
5-core	Green-yellow, blue, brown, black, grey	Blue, brown, black, grey, black
7 and more:	Green-yellow, other cores black with numbering	Black with white numbering

Characteristic

Maximum conductor operating temperature	+90°C
Lowest ambient temperature for fixed installation	-40°C
Lowest installation temperature	-5°C
Maximum short-circuit conductor temperature	+250°C
Minimum bending radius	5D for D <= 50 mm, 6D for D > 50 mm; D – overall diameter
Max. permissible tensile stress with cable grip for Cu-conductor	50 N/mm^2

Fire performance

Flame retardant	IEC 60332-1-2, IEC 60332-3-24
Smoke density	IEC 61034-2 light transmittance values > 60%
Gases evolved during combustion	BS EN 60754-2, EN 60754-2, pH ≥ 4,3; conductivity ≤ 2,5 µS/mm BS EN 60754-1 HCL ≤ 0,5 %
CPR – class reaction to fire (acc EN 50575)	Dca-s1,d2,a1

Parameters

Number and cross-sectional area of conductor	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C	CPR class reaction to fire
n × mm²	**mm**	**kg/km**	**Ω/km**	
1x1,5RF	5,4	44	13,3	-
1x2,5RF	5,9	56	7,98	-
1x4RF	6,4	72	4,95	-
1x6RF	6,9	93	3,3	-
1x10RF	7,9	137	1,91	Dca-s1,d2,a1
1x16RF	9	195	1,21	Dca-s1,d2,a1
1x25RF	10,5	285	0,78	Dca-s1,d2,a1
1x35RF	11,5	377	0,554	Dca-s1,d2,a1
1x50RF	13,4	526	0,386	Dca-s1,d2,a1
1x70RF	15,4	724	0,272	Dca-s1,d2,a1
1x95RF	17,7	943	0,206	Dca-s1,d2,a1
1x120RF	19	1179	0,161	Dca-s1,d2,a1
1x150RF	21,4	1473	0,129	Dca-s1,d2,a1
1x185RF	24,1	1790	0,106	Dca-s1,d2,a1
1x240RF	26	2309	0,0801	Dca-s1,d2,a1
1x300RF	30,6	2928	0,0641	Dca-s1,d2,a1
1x400RF	32,5	3743	0,0486	Dca-s1,d2,a1
1x500RF	37,7	4735	0,0384	Dca-s1,d2,a1
1x630RF	42,9	6284	0,0287	Dca-s1,d2,a1
1x800RF	48,1	8243	0,0221	-
2x1,5RF	9,2	109	13,3	-
2x2,5RF	10,2	141	7,98	-
2x4RF	11,1	181	4,95	-
2x6RF	12,3	236	3,3	-
2x10RF	14,1	342	1,91	-
2x16RF	16,4	493	1,21	-
2x25RF	19,3	719	0,78	-
2x35RF	21,4	945	0,554	-
2x50RF	25,2	1326	0,386	-
3x1,5RF	9,7	125	13,3	-
3x2,5RF	10,7	165	7,98	-
3x4RF	11,7	217	4,95	-
3x6RF	13	288	3,3	-
3x10RF	14,9	427	1,91	-
3x16RF	17,4	625	1,21	-
3x25RF	20,6	921	0,780	-
3x35RF	22,8	1227	0,554	-
3x50RF	26,9	1728	0,386	-
3x70RF	31,4	2406	0,272	-
3x95RF	36,1	3147	0,206	Dca-s1,d2,a1
3x120RF	39,1	3935	0,161	Dca-s1,d2,a1
3x150RF	44,4	4949	0,129	Dca-s1,d2,a1
3x185RF	50,2	6080	0,106	Dca-s1,d2,a1
3x240RF	54,0	7745	0,0801	Dca-s1,d2,a1
3x25RF+16RF	21,8	1072	0,780 / 1,21	-
3x35RF+16RF	23,7	1384	0,554 / 1,21	-
3x70RF+35RF	32,4	2734	0,272 / 0,554	-
3x95RF+50RF	38,0	3642	0,206 / 0,386	Dca-s1,d2,a1
3x120RF+70RF	41,5	4616	0,161 / 0,272	Dca-s1,d2,a1
3x150RF+70RF	47,3	5068	0,129 / 0,272	Dca-s1,d2,a1
3x185RF+95RF	52,2	6971	0,106 / 0,206	Dca-s1,d2,a1

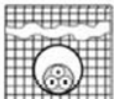
Parameters

Number and cross-sectional area of conductor	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C	CPR class reaction to fire
n × mm²	**mm**	**kg/km**	**Ω/km**	
3x240RF+120RF	56	8846	0,0801 / 0,161	-
4x1,5RF	10,4	147	13,3	-
4x2,5RF	11,6	197	7,98	-
4x4RF	12,7	263	4,95	-
4x6RF	14,1	351	3,3	-
4x10RF	16,4	530	1,91	-
4x16RF	19,1	780	1,21	-
4x25RF	22,7	1156	0,78	-
4x35RF	25,2	1559	0,554	-
4x50RF	29,8	2199	0,386	-
4x70RF	35	3084	0,272	Dca-s1,d2,a1
4x95RF	40,3	4033	0,206	Dca-s1,d2,a1
4x120RF	43,7	5073	0,161	Dca-s1,d2,a1
4x150RF	49,4	6347	0,129	Dca-s1,d2,a1
4x185RF	55,9	7787	0,106	Dca-s1,d2,a1
4x240RF	60,4	9984	0,0801	Dca-s1,d2,a1
4x300RF	70,7	12687	0,0641	-
4x70RF+50RF	39,3	3495	0,272 / 0,386	-
4x120RF+70RF	46,6	5809	0,161 / 0,272	Dca-s1,d2,a1
5x1,5RF	11,3	174	13,3	-
5x2,5RF	12,6	236	7,98	-
5x4RF	13,9	317	4,95	-
5x6RF	15,4	426	3,3	-
5x10RF	17,9	646	1,91	-
5x16RF	21	957	1,21	-
5x25RF	25	1423	0,78	-
5x35RF	27,8	1912	0,554	-
5x50RF	33,1	2716	0,386	-
5x70RF	40,4	3558	0,272	-
5x95RF	46,5	4635	0,206	-
5x120RF	50,1	5856	0,161	-
5x150RF	56,4	7293	0,129	-
5x185RF	63,9	8923	0,106	-
5x240RF	68,9	11527	0,0801	-
7x1,5RF	12,2	212	13,3	-
7x2,5RF	13,6	292	7,98	-
8x1,5RF	12,9	240	13,3	-
8x2,5RF	14,4	331	7,98	-
10x1,5RF	15,2	297	13,3	-
10x2,5RF	17,1	412	7,98	-
12x1,5RF	15,7	332	13,3	-
12x2,5RF	17,7	465	7,98	-
14x1,5RF	16,4	371	13,3	-
14x2,5RF	18,6	524	7,98	-
16x2,5RF	19,6	588	7,98	-
19x1,5RF	18,2	471	13,3	-
19x2,5RF	20,6	671	7,98	-
24x1,5RF	21,2	589	13,3	-

Multi-conductor cables			Single conductor cables				
	Two cores	Three cores	Two cores touching	Three cores triangle formation	Three cores conductors in flat formation		
Nominal cross-sectional area of conductor					Cores touching each other	Cables laid at a distance between each other Horizontally Vertically	
							
	Method E	Method E	Method F	Method F	Method F	Method G	Method G
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1,5	26	23	-	-	-	-	-
2,5	36	32	-	-	-	-	-
4	49	42	-	-	-	-	-
6	63	54	-	-	-	-	-
10	86	75	-	-	-	-	-
16	115	100	-	-	-	-	-
25	149	127	161	135	141	182	161
35	185	158	200	169	176	226	201
50	225	192	242	207	216	275	246
70	289	246	310	268	279	353	318
95	352	298	377	328	342	430	389
120	410	346	437	383	400	500	454
150	473	399	504	444	464	577	527
185	542	456	575	510	533	661	605
240	641	538	679	607	634	781	719
300	741	621	783	703	736	902	833
400	-	-	940	823	868	1 085	1 008
500	-	-	1 083	946	998	1 253	1169
630	-	-	1 254	1 088	1 151	1 454	1 362

Current ratings acc to IEC 60364-5-52 table B.52.1 & table B.52.5

Operating temperature at conductor 90°C; ambient ground temperature 30°C, thermal resistivity 2,5 K*m/K

Nominal cross-sectional area of conductor	Two loaded conductors  Method D1	Three loaded conductors  Method D1
1	**2**	**3**
1.5	22	21
2.5	29	28
4	37	36
6	46	44
10	60	58
16	78	75
25	99	96
35	119	115
50	140	135
70	173	167
95	204	197
120	231	223
150	261	251
185	292	281
240	336	324
300	379	365

Installation	 *		
Number of loaded cores	**1**	**3**	**3**
Cross-section, mm²		**Laying in air Current ratings in Ampere (A)**	
1,5	33	24	26
2,5	43	32	34
4	57	42	44
6	72	53	56
10	99	74	77
16	131	98	102
25	177	133	138
35	217	162	170
50	265	197	207
70	336	250	263
95	415	308	325
120	485	359	380
150	557	412	437
185	646	475	507
240	774	564	604
300	901	-	697
400	1060	-	811
500	1252	-	940

* Rated current for direct current systems with a far-distanced return conductor

Current ratings for control cables – HD 627 S1

Number of loaded cores	Laying in air
Cross-section, mm²	Current ratings in Ampere (A)
1.5	25
2.5	33
4	43

	Laying in air
Ambient temperature	30°C
Load factor	1.0
Arrangement: free in air, protection against direct solar radiation, no external heat sources, unrestricted dissipation of heat	

Convention factors for deviating ambient temperature

Ambient temperature, °C	10	15	20	25	35	40	45	50
Conversion factors	1.15	1.12	1.08	1.04	0.96	0.91	0.87	0.82

Number of loaded cores	Laying in air
5	0,75
7	0,65
10	0,55
14	0,50
19	0,45
24	0,40
40	0,35
61	0,30

Note: valid for cross-section 1,5 to 10 mm²

As defined in DIN VDE 0276-603, DIN VDE 0276-627, HD 603 S1, HD 627 S1 and NEK 400-5-52.
Conversion factors for deviating ambient temperature defined in DIN VDE 0298 part 4.