

FLAME-X 950

BFSI 0,6/1kV

based on IEC 60502-1; HD 604-5D

Halogen- free low smoke fire resistant security power cables with copper concentric conductor



CONSTRUCTION

Conductors:	plain annealed copper circular solid class 1(RE), circular or circular compacted stranded conductor class 2 (RM) or stranded sector – shaped conductor class 2 (SM) acc. to EN 60228
Primary insulation:	A suitable wrapping of mica tape with a glass cloth
Insulation:	special XLPE compound type XLPE acc. to IEC 60502-1
Inner covering:	halogen free tape
Concentric conductor:	round copper wires with copper and polyester tape helically wound
Sheath:	thermoplastic halogen- free compound type ST ₈ acc. to IEC 60502-1
Colour of sheath:	orange
Core identification:	
2-core:	black, blue or HD 308 S2: blue, brown
3-core:	black, brown, white or HD 308 S2: brown, black, grey
4-core:	black, blue, brown, white or HD 308S2: blue, brown, black grey
5-core:	HD 308S2: blue, brown, black, grey, black

CHARACTERISTIC

Maximum conductor operating temperature:	+90°C
Lowest ambient temperature for fixed installation:	-40°C
Lowest installation temperature:	-20°C
Cold impact test HD 604-5D:	-25±2°C
Maximum short-circuit conductor temperature:	+250°C
Test voltage of complete cable:	4 kV AC 50Hz , 5 min.
Minimum bending radius:	12D, (D - overall cable diameter)

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FIRE PERFORMANCE

Fire resistant:	IEC 60331-21 (3h, 750°C)
Flame propagation:	IEC-60332-1-2, IEC 60332-3-24 (kat. C)
Smoke density:	IEC 61034-2
Gases evolved during combustion:	IEC 60754-2: pH \geq 4,3; conductivity \leq 10 μ Smm ⁻¹ IEC 60754-1, HCL \leq 0,5%
CPR – class reaction to fire (acc EN 50575):	Dca-s1,d2,a2

APPLICATIONS

Fire resistant cables for fixed installation, indoors and outdoors. Specially for installations to secure areas from heavy smoke and corrosive gases in case of fire. Cables may be layed directly in ground if installed properly and carefully acc. to REN leaf 9000 guide

Standard length cable packing	500 or 1000m on drums. Other forms of packing and delivery are available on request
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Number and cross-sectional area of conductor	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C
n x mm ²	mm	kg/km	Ω /km
2x1,5RE/1,5	14,2	196	12,1 / 12,1
2x2,5RE/2,5	15	225	7,41 / 7,41
2x2,5RM/2,5	15,5	233	7,41 / 7,41
2x4RE/4	16,3	285	4,61 / 4,61
2x6RE/6	17,6	353	3,08 / 3,08
2x10RE/10	19,3	486	1,83 / 1,83
2x16RE/16	21,1	670	1,15 / 1,15
2x25RM/16	25,9	943	0,727 / 1,15
2x35RM/16	28	1155	0,524 / 1,15
3x1,5RE/1,5	14,8	222	12,1 / 12,1
3x2,5RE/2,5	15,6	260	7,41 / 7,41
3x4RE/4	17	335	4,61 / 4,61
3x4RM/4	17,7	347	4,61 / 4,61
3x6RE/6	18,4	422	3,08 / 3,08
3x6RM/6	18,8	431	3,08 / 3,08
3x10RE/10	20,2	591	1,83 / 1,83
3x10RM/10	20,8	604	1,83 / 1,83
3x16RE/16	22,1	828	1,15 / 1,15
3x16RM/16	23	851	1,15 / 1,15
3x25RM/16	27,3	1196	0,727 / 1,15
3x35RM/16	29,6	1497	0,524 / 1,15
3x50SM/25	29,7	1896	0,387 / 0,727

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Number and cross-sectional area of conductor	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C
n x mm ²	mm	kg/km	Ω/km
3x70SM/35	33,6	2645	0,268 / 0,524
3x95SM/50	36,7	3547	0,193 / 0,387
3x120SM/70	40,5	4488	0,153 / 0,268
3x150SM/70	44,7	5373	0,124 / 0,268
3x185SM/95	48,6	6705	0,0991 / 0,193
3x240SM/120	54,6	8690	0,0754 / 0,153
3x300SM/150	59,2	10662	0,0601 / 0,124
4x1,5RE/1,5	15,8	247	12,1 / 12,1
4x2,5RE/2,5	16,7	294	7,41 / 7,41
4x2,5RM/2,5	17,3	304	7,41 / 7,41
4x4RE/4	18,2	382	4,61 / 4,61
4x6RE/6	19,7	486	3,08 / 3,08
4x6RM/6	20,1	495	3,08 / 3,08
4x10RE/10	21,7	690	1,83 / 1,83
4x10RM/10	22,4	705	1,83 / 1,83
4x16RE/16	23,9	977	1,15 / 1,15
4x16RM/16	24,9	1002	1,15 / 1,15
4x25RM/16	29,7	1429	0,727 / 1,15
4x35RM/16	32,2	1821	0,524 / 1,15
4x35SM/16	29,7	1810	0,524 / 1,15
4x50SM/25	33,2	2419	0,387 / 0,727
4x70SM/35	37,6	3375	0,268 / 0,524
4x95SM/50	41,3	4533	0,193 / 0,387
4x120SM/70	46,1	5742	0,153 / 0,268
4x150SM/70	50,1	6874	0,124 / 0,268
4x185SM/95	54,8	8594	0,0991 / 0,193
4x240SM/120	61,4	11135	0,0754 / 0,153
5x1,5RE/1,5	16,8	284	12,1 / 12,1
5x2,5RE/2,5	17,9	344	7,41 / 7,41
5x4RE/4	19,5	449	4,61 / 4,61
5x6RE/6	21,1	574	3,08 / 3,08
5x10RE/10	23,4	820	1,83 / 1,83
5x16RE/16	25,8	1167	1,15 / 1,15

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Current ratings*

Operating temperature at conductor 90°C; ambient air temperature 30°C

Installation			
Number of loaded cores	3		3
	laying in air		
Cross-section, mm ²	Current ratings in Ampere (A)		
1,5	25		27
2,5	33		36
4	43		47
6	54		59
10	75		81
16	100		109
25	136		146
35	165		179
50	201		218
70	255		275
95	314		336
120	364		388
150	416		438
185	480		501
240	565		580
300	-		654

The values are referred to the following basic conditions:

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.	

Correction factors for various ambient air temperatures

Ambient temperature, °C	10	15	20	25	30	35	40	45	50
Rating factor	1,15	1,12	1,08	1,04	1,00	0,96	0,91	0,87	0,82

* As defined in DIN VDE 0276-604, HD 604 S1.

Conversion factors for deviating ambient temperature defined in DIN VDE 0298 part 4.

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