Current carrying capacity for NYKY 0,6/1 kV

The guidelines for current carrying capacities of copper and aluminium are valid DIN VDE 0265 and 0276 part 1000.

The current carrying capacity of a cable should be limited in such a degree that at all locations in a cable system which causes the generated heats under given proportions to lead safely in the environment. The heat flow depends on the inner heat-resistance between conductor and outer surface of the cable and as well as from the heat emission to the surroundings.

For cables laid in earth, the assumption for the calculation are chosen in a way that the given values for current loading at normal operation can be used in most of the cases **without conversion**.

For single cables laid directly in earth at EVU-Loading and a specific earth heat-resistance of 100 K · cm/W, mostly of the soil conditions are to be taken into consideration.

Calculation basis

EVU-load (current loading grade)	0,7 (1,0 for air)
Specific earth heat-resistance	100 K · cm/W
Specific heat-resistance of the insulation and sheath	600 K · cm/W
Bedding depth in earth	0,7 m
Earth temperature	20° C
Ambient temperature in the air	30° C

Current carrying capacity of 3-, 4- and multicore (5 cores and more) cables at ambient temperature of 20°C in earth, 30°C for the air.

Current carrying capacity in ampere (A):

cross-section mm²	3- and 4-core cable		5- to 61-core cable	
	Earth A	Air A	Earth A	Air A
1,5	28	18,5	Number of loading cores and the conversion factors from 1,5 to 10 mm² see the following table	
2,5	37	27		
4	48	36		
6	60	45		
10	80	62		
16	103	81		
25	134	110		
35	162	134		
50	192	163		
70	235	205		
95	283	253		
120	323	294		
150	363	334		
185	412	386		
240	478	457		
300	542	529		
400	615	610		

Current loading for multicore cables (5 cores and more)

The current loading of each core for cables with a conductor cross-section of 1,5 to 10 mm², depends on the number of cores and the number of loaded cores respectively and is calculated by means of the following conversion factors.

The conversion factors according to the number of loaded cores are to be multiplied with the loading values of the above table.

Number of loading conductors	Conversion factors for the value to 1,5 to 10 mm² of the above table	
	Earth	Air
5	0,70	0,75
7	0,60	0,65
10	0,50	0,55
14	0,45	0,50
19	0,40	0,45
24	0,35	0,40
40	0,30	0,35
61	0,25	0,30

Note

During the installation in earth or in the air, for the operation and the laying performance occur any deviations or unfavourable relations (e. g. bundling of cables, in the wall, under plaster, on the wall or on trays, on cable troughs or on cable racks), the specified conversion factors to DIN VDE 0276 part 1000 table 12 and 13 must be taken into consideration.

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