

Conductor resistance

(extracted from DIN VDE 0295, IEC 60228 and HD 383)

The values are extracted from DIN VDE 0295 (equivalent with the international standard IEC 60228 and HD 383), according to cross-sections and conductor classes, beginning with nominal cross-section of 0,5 mm². The diameters of the single wires of each bunched conductor are not permitted to exceed the maximum stated values (ref. DIN VDE 0295), which are required to conform the maximum resistance value of the bunched conductors at 20°C.

Nominal cross-section mm ²	Copper conductor plain wires (Ohm/km)		Copper conductor tinned wires (Ohm/km)		Welding cable (Ohm/km)	
	class 1 and 2	class 5 and 6	class 1 and 2	class 5 and 6	Copper conductor plain wires	Copper conductor tinned wires
0,05	–	~380	–	~392	–	–
0,08	–	~237	–	~244	–	–
0,11	–	~170	–	~175	–	–
0,126	–	~150	–	~155	–	–
0,14	–	~134	–	~138	–	–
0,22	–	~ 96	–	~ 99	–	–
0,25	–	~ 76	–	~ 79	–	–
0,34	–	~ 53	–	~ 56	–	–
0,5	36,0	39,0	36,7	40,1	–	–
0,75	24,5	26,0	24,8	26,7	–	–
1,0	18,1	19,5	18,2	20,0	–	–
1,5	12,1	13,3	12,2	13,7	–	–
2,5	7,41	7,98	7,56	8,21	–	–
4,0	4,61	4,95	4,70	5,09	–	–
6,0	3,08	3,30	3,11	3,39	–	–
10,0	1,83	1,91	1,84	1,95	–	–
16,0	1,15	1,21	1,16	1,24	1,16	1,19
25,0	0,727*	0,780	0,734	0,795	0,758	0,780
35,0	0,524*	0,554	0,529	0,565	0,536	0,552
50,0	0,387*	0,386	0,391	0,393	0,379	0,390
70,0	0,268*	0,272	0,270	0,277	0,268	0,276
95,0	0,193*	0,206	0,195	0,210	0,198	0,204
120,0	0,153*	0,161	0,154	0,164	0,155	0,159
150,0	0,124*	0,129	0,126	0,132	0,125	0,129
185,0	0,0991	0,106	0,100	0,108	0,102	0,105
240,0	0,0754	0,0801	0,0762	0,0817	–	–
300,0	0,0601	0,0641	0,0607	0,0654	–	–
400,0	0,0470	0,0486	0,0475	0,0495	–	–
500,0	0,0366	0,0384	0,0369	0,0391	–	–
630,0	0,0283	0,0287	0,0286	0,0292	–	–

class 1 = single core conductor for single and multi core cables

class 2 = multi core conductors for single and multi core cables

class 5 = fine wire copper conductors for single and multi core cables

class 6 = extra fine wire copper conductors for single and multi core cables

* for mineral-insulated cables (class 1 up to 150 mm²)