

Conductor resistances

The values according to DIN VDE 0295 are listed depending on the conductor cross-section and conductor class. The diameter of the individual wires of every conductor, beginning with 0.5 mm², are the specified maximal values allowed (see VDE 0295), that are required for compliance with the maximum wire resistance, not exceeded.

Nominal cross section mm ²	Cu conductor not insulated (Ω/km)		Cu conductor tinned (Ω/km)		Welding cable (Ω/km)	
	class 1 and 2	class 5 und 6	class 1 and 2	class 5 and 6	Cu conductor not insulated	Cu conductor tinned
0.05		380		392		
0.08		237		244		
0.11		170		175		
0.126		150		155		
0.14		134		138		
0.22		85		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		

Class 1 = single-wire strand for single and multi-wire cables

Class 2 = multi-wire strand for single and multi-wire cables

Class 5 = multi-strand Cu conductor for single and multi-wire cables

Class 6 = superfine strand Cu conductor for single and multi-wire cables

*For mineral isolated cables (only for class 1).