

# Conductor DC Resistance & Structure (Metric)

## Conductor DC Resistance

(According to VDE 0295 and comply with other international standards, such as IEC 60228 etc)

## Conductor structure

depend on the diameter of the cable largest core & Max conductor DC resistance.

Conductor cross-section (mm <sup>2</sup> )	Conductor DC Resistance at 20°C for 1 km in Ω			
	Tinned copper wire		Non-Tinned copper wire	
	Class 1+2	Class 5+6	Class 1+2	Class 5+6
0.08		260		243
0.14		142		138
0.25		82		79
0.34		59		57
0.5	36.7	40.1	36	39
0.75	24.8	26.7	24.5	26
1	18.2	20	18.1	19.5
1.5	12.2	13.7	12.1	13.3
2.5	7.56	8.21	7.41	7.98
4	4.7	5.09	4.61	4.95
6	3.11	3.39	3.08	3.3
10	1.84	1.95	1.83	1.91
16	1.16	1.24	1.15	1.21
25	0.734	0.795	0.727	0.78
35	0.529	0.565	0.524	0.554
50	0.391	0.393	0.387	0.386
70	0.27	0.277	0.268	0.272
95	0.195	0.21	0.193	0.206
120	0.154	0.164	0.153	0.161
150	0.126	0.132	0.124	0.129
185	0.1	0.108	0.0991	0.106
240	0.0762	0.0817	0.0754	0.0801
300	0.0607	0.0654	0.0601	0.0641
400	0.0475	0.0495	0.047	0.0486
500	0.0369	0.0391	0.0366	0.0384

## Conductor structure: comply with VDE 0295, 0.5mm<sup>2</sup> and above comply with IEC 60228

Conductor cross-section (mm <sup>2</sup> )	Multi-wire conductor (VDE 0295, class 2)	Several-wire conductor	Fine-wire conductor (VDE 0295, class 5)	Extra-fine wire conductor (VDE 0295, class 6)			
0.14				~ 18x0.1	~ 18x0.1	~ 36x0.07	~ 72x0.05
0.25			~ 14x0.15	~ 32x0.1	~ 32x0.1	~ 65x0.07	~ 128x0.05
0.34		7x0.25	~ 19x0.15	~ 42x0.1	~ 42x0.1	~ 88x0.07	~ 174x0.05
0.38		7x0.27	~ 12x0.20	~ 21x0.15	~ 48x0.1	~ 100x0.07	~ 194x0.05
0.5	7x0.30	7x0.30	~ 16x0.20	~ 28x0.15	~ 64x0.1	~ 131x0.07	~ 256x0.05
0.75	7x0.37	7x0.37	~ 24x0.20	~ 42x0.15	~ 96x0.1	~ 195x0.07	~ 384x0.05
1	7x0.43	7x0.43	~ 32x0.20	~ 56x0.15	~ 128x0.1	~ 260x0.07	~ 512x0.05
1.5	7x0.52	7x0.52	~ 30x0.25	~ 84x0.15	~ 192x0.1	~ 392x0.07	~ 768x0.05
2.5	7x0.67	~ 19x0.41	~ 50x0.25	~ 140x0.15	~ 320x0.1	~ 651x0.07	~ 1280x0.05
4	7x0.85	~ 19x0.52	~ 56x0.30	~ 224x0.15	~ 512x0.1	~ 1040x0.07	
6	7x1.05	~ 19x0.64	~ 84x0.30	~ 192x0.20	~ 768x0.1	~ 1560x0.07	
10	7x1.35	~ 49x0.51	~ 80x0.40	~ 320x0.20	~ 1280x0.1	~ 2600x0.07	
16	7x1.70	~ 49x0.65	~ 128x0.40	~ 512x0.20	~ 2048x0.1		
25	7x2.13	~ 84x0.62	~ 200x0.40	~ 800x0.20	~ 3200x0.1		
35	7x2.52	~ 133x0.58	~ 280x0.40	~ 1120x0.20			
50	~ 19x1.83	~ 133x0.69	~ 400x0.40	~ 705x0.30			
70	~ 19x2.17	~ 189x0.69	~ 356x0.50	~ 990x0.30			
95	~ 19x2.52	~ 259x0.69	~ 485x0.50	~ 1340x0.30			
120	~ 37x2.03	~ 336x0.67	~ 614x0.50	~ 1690x0.30			
150	~ 37x2.27	~ 392x0.69	~ 765x0.50	~ 2123x0.30			
185	~ 37x2.52	~ 494x0.69	~ 944x0.50	~ 1470x0.40			
240	~ 61x2.24	~ 627x0.70	~ 1225x0.50	~ 1905x0.40			
300	~ 61x2.50	~ 790x0.70	~ 1530x0.50	~ 2385x0.40			
400	~ 61x2.89		~ 2035x0.50				
500	~ 61x3.23		~ 1768x0.60				