



Conductor Structure

Copper stranded conductor structure according to DIN VDE 0295 and IEC 60228

Stranded conductor structure according to DIN VDE 0295 has been defined in conformity with IEC 60228 for conductor class 2 column 1, conductor class 5 column 3 and conductor Class 6 Column 4 as from 0.5 mm². The diameters of the individual wires of each conductor must not exceed the maximum value stated for each nominal cross-section, see table below.

Cross section	Multi-wire round-section conductor VDE 0295 class 2 ²⁾ column 1	Multi-wire flexible strands Standard structure column 2	Fine-wired flexible strands VDE 0295 class 5 ¹⁾ column 3	Ultra-fine-wired flexible strands			
				VDE 0295 class 6 ¹⁾ column 4	Standard structure		
					column 5	column 6	column 7
0.035		7x0.08					
0.05						14x0.07	26x0.05
0.08							40x0.05
0.09					7x0.124	24x0.07*	
0.14			18x0.10	18x0.10	18x0.10	36x0.07	72x0.05
0.25			14x0.15	32x0.10	32x0.10	65x0.07	128x0.05
0.34		7x0.25	19x0.15	42x0.10	42x0.10	88x0.07	174x0.05
0.38		7x0.27	12x0.20	21x0.15	48x0.10	100x0.07	194x0.05
0.5	7x0.30	7x0.30	16x0.20	28x0.15	64x0.10	131x0.07	256x0.05
0.75	7x0.37	7x0.37	24x0.20	42x0.15	96x0.10	195x0.07	384x0.05
1.0	7x0.43	7x0.43	32x0.20	56x0.15	128x0.10	260x0.07	512x0.05
1.5	7x0.52	7x0.52	30x0.25	84x0.15	192x0.10	392x0.07	768x0.05
2.5	7x0.67	19x0.41	50x0.25	140x0.15	320x0.10	651x0.07	1280x0.05
4	7x0.85	19x0.52	56x0.30	224x0.15	512x0.10	1040x0.07	
6	7x1.05	19x0.64	84x0.30	192x0.20	768x0.10	1560x0.07	
10	7x1.35	49x0.51	80x0.40	320x0.20	1280x0.10	2600x0.07	
16	7x1.70	49x0.65	128x0.40	512x0.20	2048x0.10	4116x0.07	
25	7x2.13	84x0.62	200x0.40	800x0.20	3200x0.10	6370x0.07	
35	7x2.52	133x0.58	280x0.40	1120x0.20	4410x0.10	9100x0.07	
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			



Cross section	Multi-wire round-section conductor VDE 0295 class 2 ²⁾ column 1	Multi-wire flexible strands Standard structure column 2	Fine-wired flexible strands VDE 0295 class 5 ¹⁾ column 3	Ultra-fine-wired flexible strands			
				VDE 0295 class 6 ¹⁾ column 4	Standard structure		
					column 5	column 6	column 7
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		2034x0.50				
500	61x3.23		1768x0.60				
630	91x2.97		2228x0.60				

* Alternative 19x0.08

Note:

¹⁾ DIN VDE 0295, in conformity with IEC 60228, specifies only the maximum individual-wire diameter for Conductor Class 5 and Conductor Class 6.

The number of wires is in no case binding.

²⁾ For Conductor Class 2, however, the minimum number of individual wires in the round-section conductor and not the individual-wire diameter applies.

The required maximum values for conductor resistance in each conductor at 20° C are definitive. The respective nominal cross-section for the specified maximum values must not be exceeded.

Explanatory notes on ultra-fine-wired stranded conductors, Class 6

Column 4 Standard flexible structure as per DIN VDE

Column 5 High flexibility

Column 6 Ultra-high flexibility

Column 7 Extreme flexibility



AWG wires (stranded conductors)

AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm ²	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
36	solid	solid	0.013	0.127	1460.0	0.116
36	7/44	7 x 0.05	0.014	0.152	1271.0	0.125
34	solid	solid	0.020	0.160	918.0	0.178
34	7/42	7 x 0.064	0.022	0.192	777.0	0.196
32	solid	solid	0.032	0.203	571.0	0.284
32	7/40	7 x 0.078	0.034	0.203	538.0	0.302
32	19/44	19 x 0.05	0.037	0.229	448.0	0.329
30	solid	solid	0.051	0.254	365.0	0.45
30	7/38	7 x 0.102	0.057	0.305	339.0	0.507
30	19/42	19 x 0.064	0.061	0.305	286.7	0.543
28	solid	solid	0.080	0.330	232.0	0.71
28	7/36	7 x 0.127	0.087	0.381	213.0	0.774
28	19/40	19 x 0.078	0.091	0.406	186.0	0.81
27	7/35	7 x 0.142	0.111	0.457	179.0	0.988
26	solid	solid	0.128	0.404	143.0	1.14
26	10/36	10 x 0.127	0.127	0.533	137.0	1.13
26	19/38	19 x 0.102	0.155	0.508	113.0	1.38
26	7/34	7 x 0.160	0.141	0.483	122.0	1.25
24	solid	solid	0.205	0.511	89.4	1.82
24	7/32	7 x 0.203	0.227	0.610	76.4	2.02
24	10/34	10 x 0.160	0.201	0.582	85.6	1.79
24	19/36	19 x 0.127	0.241	0.610	69.2	2.14
24	41/40	41 x 0.078	0.196	0.582	84.0	1.74
22	solid	solid	0.324	0.643	55.3	2.88
22	7/30	7 x 0.254	0.355	0.762	48.4	3.16
22	19/34	19 x 0.160	0.382	0.787	45.1	3.40
22	26/36	26 x 0.127	0.330	0.762	52.3	2.94
20	solid	solid	0.519	0.813	34.6	4.61
20	7/28	7 x 0.320	0.562	0.965	33.8	5.00
20	10/30	10 x 0.254	0.507	0.889	33.9	4.51
20	19/32	19 x 0.203	0.615	0.940	28.3	5.47
20	26/34	26 x 0.160	0.523	0.914	33.0	4.65
20	41/36	41 x 0.127	0.520	0.914	32.9	4.63
18	solid	solid	0.823	1.020	21.8	7.32
18	7/26	7 x 0.404	0.897	1.219	19.2	7.98
18	16/30	16 x 0.254	0.811	1.194	21.3	7.22



Addison Industrial Cables

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AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm ²	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
18	19/30	19 x 0.254	0.963	1.245	17.9	8.57
18	41/34	41 x 0.160	0.824	1.194	20.9	7.33
18	65/36	65 x 0.127	0.823	1.194	21.0	7.32
16	solid	solid	1.310	1.290	13.7	11.66
16	7/24	7 x 0.511	1.440	1.524	12.0	12.81
16	65/34	65 x 0.160	1.310	1.499	13.2	11.65
16	26/30	26 x 0.254	1.317	1.499	13.1	11.72
16	19/29	19 x 0.287	1.229	1.473	14.0	10.94
16	105/36	105 x 0.127	1.330	1.499	13.1	11.84
14	solid	solid	2.080	1.630	8.6	18.51
14	7/22	7 x 0.643	2.238	1.854	7.6	19.92
14	19/27	19 x 0.361	1.945	1.854	8.9	17.31
14	41/30	41 x 0.254	2.078	1.854	8.3	18.49
14	105/34	105 x 0.160	2.111	1.854	8.2	18.79
12	solid	solid	3.31	2.05	5.4	29.46
12	7/20	7 x 0.813	3.63	2.438	4.8	32.30
12	19/25	19 x 0.455	3.09	2.369	5.6	27.50
12	65/30	65 x 0.254	3.292	2.413	5.7	29.29
12	165/34	165 x 0.60	3.316	2.413	5.2	29.51
10	solid	solid	5.26	2.59	3.4	46.81
10	37/26	37 x 0.404	4.74	2.921	3.6	42.18
10	49/27	49 x 0.363	5.068	2.946	3.6	45.10
10	105/30	105 x 0.254	5.317	2.946	3.2	47.32
8	49/25	49 x 0.455	7.963	3.734	2.2	70.87
8	133/29	133 x 0.287	8.604	3.734	2.0	76.57
8	655/36	655 x 0.127	8.297	3.734	2.0	73.84
4	133/25	133 x 0.455	21.625	5.898	0.80	192.46
4	259/27	259 x 0.363	26.804	5.898	0.66	238.55
4	1666/36	1666 x 0.127	21.104	5.898	0.82	187.82
2	133/23	133 x 0.574	34.416	7.417	0.50	306.30
2	259/26	259 x 0.404	33.201	7.417	0.52	295.49
2	665/30	665 x 0.254	33.696	7.417	0.52	299.89
2	2646/36	2646 x 0.127	33.518	7.417	0.52	298.31
1	133/22	133 x 0.643	43.187	8.331	0.40	384.37
1	259/2	259 x 0.455	42.112	8.331	0.41	374.80
1	817/30	817 x 0.254	41.397	8.331	0.42	368.43
1	2109/34	2109 x 0.160	42.403	8.331	0.41	377.39
1/0	133/21	133 x 0.724	54.75	9.347	0.31	487.28



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AWG	AWG-structure n x AWG	Cable structure n x wire-Ø mm	Conductor cross-section mm ²	Outer conductor diameter mm	Conductor resistance Ohm/km	Conductor weight kg/km
1/0	259/24	259 x 0.511	53.116	9.347	0.32	472.73
2/0	133/20	133 x 0.813	69.043	10.516	0.25	614.48
2/0	259/23	259 x 0.574	67.021	10.516	0.25	596.49
3/0	259/22	259 x 0.643	84.102	11.786	0.20	748.51
3/0	427/24	427 x 0.511	87.570	11.786	0.19	779.37
4/0	259/21	259 x 0.724	106.626	13.259	0.16	948.97
4/0	427/23	427 x 0.574	110.494	13.259	0.15	983.39

AWG wires (solid conductors)

AWG	Wire Diameter mm	AWG	Wire Diameter mm	AWG	Wire Diameter mm
44	0.050	26	0.404	10	2.588
41	0.070	25	0.455	9	2.906
40	0.079	24	0.511	8	3.268
39	0.089	23	0.574	7	3.665
38	0.102	22	0.643	6	4.115
37	0.114	21	0.724	5	4.620
36	0.127	20	0.813	4	5.189
35	0.142	19	0.912	3	5.827
34	0.160	18	1.024	2	6.543
33	0.180	17	1.151	1	7.348
32	0.203	16	1.290	1/0	8.252
31	0.226	15	1.450	2/0	9.266
30	0.254	14	1.628	3/0	10.404
29	0.287	13	1.829	4/0	11.684
28	0.320	12	2.052		
27	0.363	11	2.304		