

## Conductor sizes

AWG vs. Metric conversion

### Conductors

Size		Stranding	Diameter			Resistance	Weight
AWG	CSA		Min	Nom	Max	$\Omega$ /km at 20°C	Nom g/m
	mm <sup>2</sup>	TPC					
-	400	2,013 x 0.50	28.00	30.00	31.00	0.0495	3,588
-	300	1,525 x 0.50	24.00	26.00	27.00	0.0654	2,718
-	240	1,221 x 0.50	22.00	23.00	24.00	0.0817	2,176
-	185	925 x 0.50	19.00	20.00	21.00	0.108	1,649
-	150	777 x 0.50	17.00	18.00	19.00	0.132	1,385
-	120	629 x 0.50	15.00	16.00	17.00	0.164	1,121
0000	107	2,109 x 0.254	-	15.20	-	0.189	1,018
-	95.0	475 x 0.50	13.50	14.30	15.10	0.210	847
000	-	646 x 0.410	-	13.70	-	0.250	760
-	70.0	361 x 0.50	11.70	12.40	13.10	0.277	643
00	68.0	1,330 x 0.260	11.18	11.80	12.07	0.290	654
0	53.0	1,045 x 0.260	10.03	10.50	10.80	0.370	504
-	50.0	399 x 0.404	9.600	10.30	11.00	0.393	455
-	35.0	278 x 0.404	7.800	8.400	9.200	0.565	319
2	34.0	665 x 0.260	8.130	8.400	8.640	0.580	318
-	25.0	196 x 0.404	6.600	7.200	7.800	0.795	224
4	21.6	133 x 0.455	-	6.600	-	0.920	192
-	16.0	126 x 0.404	5.300	5.700	6.100	1.24	144
6	13.6	133 x 0.361	-	5.200	-	1.37	128
-	10.0	80 x 0.404	3.850	3.930	4.070	1.85	91.0
8	8.60	133 x 0.287	-	4.100	-	2.29	77.7
-	6.00	84 x 0.300	2.840	2.920	3.040	3.20	53.0
10	4.74	37 x 0.404	-	2.850	-	4.13	43.5
-	4.00	56 x 0.300	2.390	2.480	2.530	4.80	36.0
12	3.09	19 x 0.455	2.083	2.150	2.184	6.29	27.67
	3.00	37 x 0.320	2.020	2.100	2.180	7.60	23.30
-	2.50	50 x 0.254	1.870	1.950	2.010	7.80	21.90
14	2.00	37 x 0.250	1.680	1.750	1.820	10.90	16.69
	1.94	19 x 0.361	1.651	1.706	1.753	10.00	17.41
-	1.50	30 x 0.254	1.430	1.500	1.570	13.00	13.60
		19 x 0.320	1.470	1.520	1.570	13.00	13.60
16	1.23	19 x 0.287	1.321	1.358	1.397	15.81	11.00
	1.30	1 x 1.290	1.278	1.290	1.328	13.99	11.63
-	1.00	32 x 0.203	1.150	1.200	1.290	19.00	9.000
18	0.963	19 x 0.254	1.169	1.201	1.245	20.40	8.634
	0.897	7 x 0.404	1.194	1.212	1.270	21.45	8.049
	0.823	1 x 1.024	1.013	1.024	1.054	22.23	7.330
-	0.75	24 x 0.203	1.030	1.050	1.080	25.00	6.800
		19 x 0.226	1.030	1.080	1.150	25.00	6.800
19	0.650	1 x 0.900	0.855	0.900	0.909	28.50	5.662
20	0.615	19 x 0.203	0.940	0.961	0.991	32.02	5.512
	0.563	7 x 0.320	0.915	0.960	0.991	34.12	5.046
	0.519	1 x 0.813	0.805	0.813	0.838	35.21	4.620
-	0.500	19 x 0.180	0.860	0.880	0.900	38.00	4.300
	0.500	16 x 0.203	0.820	0.880	0.920	38.00	4.500
22	0.382	19 x 0.160	0.737	0.757	0.787	52.16	3.433
	0.354	7 x 0.254	0.712	0.762	0.788	54.79	3.188
	0.324	1 x 0.643	0.635	0.643	0.663	56.62	2.890
23	0.283	1 x 0.600	0.570	0.600	0.606	64.00	2.516

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Data indicates nominal values in millimetres (mm) unless otherwise stated.

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AWG	CSA		Min Ø	Nom Ø	Max Ø	Ω/km at 20°C	Nom g/m
	mm²	TPC					
24	0.241	19 x 0.127	0.584	0.600	0.610	83.33	2.159
	0.220	7 x 0.203	0.585	0.609	0.635	85.95	2.033
	0.205	1 x 0.511	0.515	0.511	0.526	89.35	1.825
26	0.155	19 x 0.102	0.457	0.480	0.508	131.5	1.392
	0.140	7 x 0.160	0.458	0.480	0.508	139.7	1.263
	0.128	1 x 0.404	0.399	0.404	0.417	146.6	1.141
28	0.095	19 x 0.079	0.355	0.372	0.394	222.1	0.835
	0.089	7 x 0.127	0.356	0.381	0.406	223.7	0.793
	0.080	1 x 0.320	0.318	0.320	0.330	231.3	0.716
30	0.061	19 x 0.060	-	-	-	320.9	-
	0.057	7 x 0.102	0.280	0.306	0.330	354.3	0.511
	0.050	1 x 0.254	0.251	0.254	0.262	372.7	0.451
32	0.037	19 x 0.052	-	-	-	427.3	-
	0.035	7 x 0.079	0.224	0.237	0.279	597.1	0.307
	0.032	1 x 0.203	0.201	0.203	0.211	585.3	0.288
34	0.023	7 x 0.060	-	-	-	871.1	-
	0.020	1 x 0.160	0.157	0.160	0.168	950.2	0.179
36	0.014	7 x 0.050	-	-	-	1,160	-
	0.013	1 x 0.127	0.124	0.127	0.135	1,521	0.113

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### Variations

Weight and conductor resistance values may vary slightly for the different platings that can be offered. Sizes 32 AWG to 36 AWG use High Strength Copper Alloy (HSA) as their size is too small to process safely with weaker materials.

As with cross-sectional area, further small differences can be found between different international and national specifications. The resistance of a stranded conductor is around 3% higher than their equivalent solid conductor size.

### Twisting the cores

increases the conductor resistance with values around 5% higher than a straight, insulated conductor. Different platings change conductor resistance (e.g. AWG 3007):

- TPC = 355 Ω/km
- SPC = 328 Ω/km
- NPC = 348 Ω/km
- HSA = 373 Ω/km

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