Van den Hul
Special Quality
audio products'
AWG to Metric Conversion Chart

Please note:

- The diameters and cross-section areas indicated below are the effective figures as were the conductor a solid rod.
- Resistances indicated are according to the International Annealed Copper Standard (IACS) at 20 °C. = 68 °F.
- For most Oxygen Free Copper (OFC) types the resistances indicated are accurate to a few percent.

Furthermore:

- Some RULES OF THUMB helping you to learn AWG resistance and diameter by head.

AWG to Metric Conversion Chart				
AWG Number	**Ø [Inch]**	**Ø [mm]**	**Ø [mm²]**	**Resistance [Ohm/m]**
4/0 = 0000	0.460	11.7	107	0.000161
3/0 = 000	0.410	10.4	85.0	0.000203
2/0 = 00	0.365	9.26	67.4	0.000256
1/0 = 0	0.325	8.25	53.5	0.000323
1	0.289	7.35	42.4	0.000407
2	0.258	6.54	33.6	0.000513
3	0.229	5.83	26.7	0.000647
4	0.204	5.19	21.1	0.000815
5	0.182	4.62	16.8	0.00103
6	0.162	4.11	13.3	0.00130
7	0.144	3.66	10.5	0.00163
8	0.128	3.26	8.36	0.00206
9	0.114	2.91	6.63	0.00260
AWG Number	**Ø [Inch]**	**Ø [mm]**	**Ø [mm²]**	**Resistance [Ohm/m]**
10	0.102	2.59	5.26	0.00328
11	0.0907	2.30	4.17	0.00413
12	0.0808	2.05	3.31	0.00521
13	0.0720	1.83	2.62	0.00657
14	0.0641	1.63	2.08	0.00829
15	0.0571	1.45	1.65	0.0104
16	0.0508	1.29	1.31	0.0132
17	0.0453	1.15	1.04	0.0166
18	0.0403	1.02	0.823	0.0210
19	0.0359	0.912	0.653	0.0264
AWG Number	**Ø [Inch]**	**Ø [mm]**	**Ø [mm²]**	**Resistance [Ohm/m]**
20	0.0320	0.812	0.518	0.0333
21	0.0285	0.723	0.410	0.0420
22	0.0253	0.644	0.326	0.0530
23	0.0226	0.573	0.258	0.0668
24	0.0201	0.511	0.205	0.0842
25	0.0179	0.455	0.162	0.106
26	0.0159	0.405	0.129	0.134
27	0.0142	0.361	0.102	0.169
28	0.0126	0.321	0.0810	0.213

29	0.0113	0.286	0.0642	0.268
AWG Number	**Ø [Inch]**	**Ø [mm]**	**Ø [mm²]**	**Resistance [Ohm / m]**
30	0.0100	0.255	0.0509	0.339
31	0.00893	0.227	0.0404	0.427
32	0.00795	0.202	0.0320	0.538
33	0.00708	0.180	0.0254	0.679
34	0.00631	0.160	0.0201	0.856
35	0.00562	0.143	0.0160	1.08
36	0.00500	0.127	0.0127	1.36
37	0.00445	0.113	0.0100	1.72
38	0.00397	0.101	0.00797	2.16
39	0.00353	0.0897	0.00632	2.73
40	0.00314	0.0799	0.00501	3.44

Some rules of thumb helping you to learn AWG resistance and diameter by head:

The AWG numbering system is logarithmic and works much like calculating with deciBels:

Resistance:

- AWG 15 copper is about 10 milliOhm per meter.
- Adding 3 to the AWG number doubles the resistance; Subtracting 3 halves.
- Adding 10 to the AWG number tenfolds the resistance; Subtracting 10 reduces by a factor 10.

Diameter:

- AWG 18 has a solid core diameter of about 1.0 mm.
- Adding 6 to the AWG number halves the diameter; Subtracting 6 doubles.
- Adding 20 to the AWG number reduces the diameter by a factor of 10; Subtracting 20 tenfolds.