Properties of Common Conducting Materials

Material	Resistivity ρ (Ω·m @20°C)	Resistivity ρ (Ω·CM/ft @20°C)	Temperature Coefficient (Ω/°C·Ω @ 0°C)
Aluminum	2.83×10^{-8}	17.0	0.00424
Brass	7.00×10^{-8}	42.0	0.00208
Carbon	3500×10^{-8}	21000	-0.000495
Constantin (Cu, Ni)	49.2×10^{-8}	295	0.00000
Copper	1.72×10^{-8}	10.37	0.00427
Gold	2.45×10^{-8}	14.7	0.00365
Lead	22.1×10^{-8}	132.0	0.00466
Manganin (Cu, Mn, Ni)	48.0×10^{-8}	288	0.00000
Nichrome (Ni, Fe, Cr)	100×10^{-8}	600.0	0.00044
Nickel	7.80×10^{-8}	47.0	0.00680
Platinum	10.0×10^{-8}	60.2	0.00323
Silver	1.64×10^{-8}	9.90	0.00410
Tungsten	5.52×10^{-8}	33.2	0.00495

American Wire Gage

AWG #	Area (CM)	Ω/1000 ft @20°C	Ω/100 m @20°C
0000	211,600	0.0490	0.0160
000	167,810	0.0618	0.0200
00	133,080	0.0780	0.0260
0	105,530	0.0983	0.0320
1	83,694	0.1240	0.0406
2	66,373	0.1563	0.0512
3	52,634	0.1970	0.0646
4	41,742	0.2485	0.0815
5	33,102	0.3133	0.1027
6	26,250	0.3951	0.129
7	20,816	0.4982	0.163
8	16,509	0.6282	0.206
9	13,094	0.7921	0.260
10	10,381	0.9989	0.327
11	8,234.0	1.260	0.413
12	6,529.0	1.588	0.520
13	5,178.4	2.003	0.657
14	4,106.8	2.525	0.828
15	3,256.7	3.184	1.043
16	2,582.9	4.016	1.316
17	2,048.2	5.064	1.66
18	1,624.3	6.385	2.09

AWG #	Area (CM)	Ω/1000 ft @20°C	Ω/100 m @20°C
19	1,288.1	8.051	2.64
20	1,021.5	10.15	3.33
21	810.10	12.80	4.20
22	642.40	16.14	5.30
23	509.45	20.36	6.70
24	404.01	25.67	8.40
25	320.40	32.37	10.6
26	254.10	40.81	13.4
27	201.50	51.47	16.9
28	159.79	64.90	21.3
29	126.72	81.83	26.8
30	100.50	103.2	33.8
31	79.70	130.1	42.6
32	63.21	164.1	53.8
33	50.13	206.9	68.0
34	39.75	260.9	86.0
35	31.52	329.0	108
36	25.00	414.8	136
37	19.83	523.1	171
38	15.72	659.6	216
39	12.47	831.8	273
40	9.89	1049.0	344

NOTE: The Ω/1000 ft and Ω/100 m columns are for **COPPER WIRE ONLY**!