

## APP NOTE

# WIRE AWG/MM CROSS REFERENCE

### NOTES

1. American Wire Gauge (AWG) measurements are a system of numerical wire sizes that start with the lowest numbers (6/0) for the largest sizes.
2. Diameter information in the table applies to solid wires.
3. Stranded wires are calculated by calculating the equivalent cross sectional copper area.
4. The gauge sizes are each 20.6% apart based on the cross sectional area.
5. Cir Mils or CMA = Circular Mil Area = 1/1000 (0.001) of an inch in diameter or 0.000507 MM.

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
6/0 AWG	0.58	14.732	6/0	336,390.34
5/0 AWG	0.5165	13.1191	5/0	266,764.59
7/0 SWG	0.5	12.7	5/0	249,992.82
6/0 SWG	0.464	11.7856	4/0	215,289.82
4/0 AWG	0.46	11.684	4/0	211,593.92
4/0 BWG	0.454	11.5316	4/0	206,110.08
5/0 SWG	0.432	10.9728	4/0	186,618.64
3/0 BWG	0.425	10.795	3/0	180,619.81
3/0 AWG	0.4096	10.40384	3/0	167,767.34
4/0 SWG	0.4	10.16	2/0	159,995.40
2/0 BWG	0.38	9.652	2/0	144,395.85
3/0 SWG	0.372	9.4488	2/0	138,380.03
2/0 AWG	0.3648	9.26592	2/0	133,075.22
2/0 SWG	0.348	8.8392	2/0	121,100.52
0 BWG	0.34	8.636	0	115,596.68
0 AWG	0.3249	8.25246	0	105,556.98
0 SWG	0.324	8.2296	0	104,972.99
1 SWG	0.3	7.62	1	89,997.42
1 BWG	0.3	7.62	1	89,997.42
1 AWG	0.2893	7.34822	1	83,692.09
2 BWG	0.283	7.1882	2	80,086.70
2 SWG	0.276	7.0104	2	76,173.81
1.5 AWG	0.273003	6.93428	1.5	74,528.50
3 BWG	0.259	6.5786	2	67,079.07
2 AWG	0.258	6.5532	2	66,562.09
3 SWG	0.252	6.4008	2	63,502.18
2.5 AWG	0.243116	6.17515	2.5	59,103.69
4 BWG	0.238	6.0452	3	56,642.37
4 SWG	0.232	5.8928	3	53,822.45
3 AWG	0.229	5.8166	3	52,439.49
5 BWG	0.22	5.588	3	48,398.61
3.5 AWG	0.216501	5.49913	3.5	46,871.34
5 SWG	0.212	5.3848	4	44,942.71
4 AWG	0.204	5.1816	4	41,614.80
6 BWG	0.203	5.1562	4	41,207.82

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
4.5 AWG	0.1928	4.89712	4.5	37,170.77
5 AWG	0.182	4.6228	5	33,123.05
7 BWG	0.179	4.5466	5	32,040.08
5.5 AWG	0.171693	4.361	5.5	29,477.64
8 BWG	0.164	4.1656	6	26,895.23
6 AWG	0.162023	4.11538	6	26,250.70
6.5 AWG	0.152897	3.88358	6.5	23,376.82
9 BWG	0.147	3.7338	7	21,608.38
7 AWG	0.144285	3.66484	7	20,817.56
9 SWG	0.144	3.6576	7	20,735.40
7.5 AWG	0.136459	3.46606	7.5	18,620.52
10 BWG	0.134	3.4036	8	17,955.48
3.35 MM	0.13189	3.34999	8	17,394.34
8 AWG	0.1285	3.2639	8	16,511.78
10 SWG	0.128	3.2512	8	16,383.53
3.15 MM	0.124016	3.14999	8	15,379.40
8.5 AWG	0.121253	3.07983	8.5	14,701.87
11 BWG	0.12	3.048	9	14,399.59
3 MM	0.11811	2.99999	9	13,949.57
11 SWG	0.116	2.9464	9	13,455.61
9 AWG	0.1144	2.90576	9	13,086.98
2.8 MM	0.110236	2.79999	9	12,151.63
12 BWG	0.109	2.7686	10	11,880.66
9.5 AWG	0.107979	2.74267	9.5	11,659.13
2.65 MM	0.104331	2.64999	10	10,884.54
12 SWG	0.104	2.6416	10	10,815.69
10 AWG	0.1019	2.58826	10	10,383.31
2.5 MM	0.098425	2.5	10	9,687.20
10.5 AWG	0.096158	2.44241	10.5	9,246.10
13 BWG	0.095	2.413	11	9,024.74
2.36 MM	0.092913	2.36	11	8,632.61
13 SWG	0.092	2.3368	11	8,463.76
11 AWG	0.0907	2.30378	11	8,226.25
2.24 MM	0.088189	2.24	11	7,777.04
11.5 AWG	0.0858	2.17932	11.5	7,361.43
2.12 MM	0.083464	2.12	12	6,966.11
14 BWG	0.083	2.1082	12	6,888.80
12 AWG	0.0808	2.05232	12	6,528.45
14 SWG	0.08	2.032	12	6,399.82
2 MM	0.07874	2	12	6,199.81
12.5 AWG	0.0764	1.94056	12.5	5,836.79
1.9 MM	0.074803	1.9	13	5,595.33
13 AWG	0.072	1.8288	13	5,183.85
15 SWG	0.072	1.8288	13	5,183.85
15 BWG	0.072	1.8288	13	5,183.85
1.8 MM	0.070866	1.8	13	5,021.85
13.5 AWG	0.0681	1.72974	13.5	4,637.48
1.7 MM	0.066929	1.7	14	4,479.36
16 BWG	0.065	1.651	14	4,224.88
14 AWG	0.0641	1.62814	14	4,108.69
16 SWG	0.064	1.6256	14	4,095.88
1.6 MM	0.062992	1.6	14	3,967.88
14.5 AWG	0.0605	1.5367	14.5	3,660.14

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
1.5 MM	0.059055	1.5	15	3,487.39
17 BWG	0.058	1.4732	15	3,363.90
15 AWG	0.0571	1.45034	15	3,260.32
17 SWG	0.056	1.4224	15	3,135.91
1.4 MM	0.055118	1.4	15	3,037.91
15.5 AWG	0.0539	1.36906	15.5	2,905.13
1.32 MM	0.051968	1.32	16	2,700.64
1.3 MM	0.0512	1.30048	16	2,621.36
16 AWG	0.0508	1.29032	16	2,580.57
1.25 MM	0.049213	1.25	16	2,421.80
18 BWG	0.049	1.2446	16	2,400.93
18 SWG	0.048	1.2192	16	2,303.93
16.5 AWG	0.048	1.2192	16.5	2,303.93
1.2 MM	0.0472	1.19888	17	2,227.78
1.18 MM	0.046457	1.18	17	2,158.15
17 AWG	0.0453	1.15062	17	2,052.03
1.15 MM	0.045275	1.14999	17	2,049.77
1.12 MM	0.044094	1.12	17	1,944.26
1.1 MM	0.0433	1.09982	17	1,874.84
17.5 AWG	0.0427	1.08458	17.5	1,823.24
19 BWG	0.042	1.0668	18	1,763.95
1.06 MM	0.041732	1.06	18	1,741.53
18 AWG	0.0403	1.02362	18	1,624.04
19 SWG	0.04	1.016	18	1,599.95
1 MM	0.03937	1	18	1,549.95
18.5 AWG	0.038	0.9652	18.5	1,443.96
.95 MM	0.037402	0.95	19	1,398.83
20 SWG	0.036	0.9144	19	1,295.96
19 AWG	0.0359	0.91186	19	1,288.77
.9 MM	0.035433	0.9	19	1,255.46
20 BWG	0.035	0.889	19	1,224.96
19.5 AWG	0.0339	0.86106	19.5	1,149.18
.85 MM	0.033465	0.85	20	1,119.84
20 AWG	0.032	0.8128	20	1,023.97
21 SWG	0.032	0.8128	20	1,023.97
.8 MM	0.031496	0.8	20	991.969526
21 BWG	0.031	0.7874	20	960.9724
20.5 AWG	0.0302	0.76708	20.5	912.013806
.75 MM	0.029528	0.75	21	871.848216
21 AWG	0.0285	0.7239	21	812.226672
22 SWG	0.028	0.7112	21	783.977484
22 BWG	0.028	0.7112	21	783.977484
.71 MM	0.027953	0.71	21	781.330997
.7 MM	0.0276	0.70104	21	761.738122
21.5 AWG	0.0269	0.68326	21.5	723.589218
.65 MM	0.0256	0.65024	22	655.341178
22 AWG	0.0253	0.64262	22	640.071617
23 BWG	0.025	0.635	22	624.98205

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
.63 MM	0.024803	0.63	22	615.176101
23 SWG	0.024	0.6096	22	575.983457
22.5 AWG	0.0239	0.60706	22.5	571.193595
.6 MM	0.023622	0.6	23	557.982858
24 BWG	0.023	0.5842	23	528.984807
23 AWG	0.0226	0.57404	23	510.745331
.56 MM	0.0221	0.56134	23	488.395973
24 SWG	0.022	0.5588	23	483.9861
.55 MM	0.0217	0.55118	24	470.876476
23.5 AWG	0.0213	0.54102	23.5	453.67697
24 AWG	0.0201	0.51054	24	403.998397
25 SWG	0.02	0.508	24	399.988512
25 BWG	0.02	0.508	24	399.988512
.5 MM	0.019685	0.5	24	387.488096
24.5 AWG	0.019	0.4826	24.5	360.989632
26 SWG	0.018	0.4572	25	323.990695
26 BWG	0.018	0.4572	21	323.990695
25 AWG	0.0179	0.45466	25	320.400798
.45 MM	0.017717	0.45	25	313.865358
25.5 AWG	0.0169	0.42926	25.5	285.601797
.425 MM	0.016732	0.425	26	279.960149
27 SWG	0.0164	0.41656	26	268.952275
27 BWG	0.016	0.4064	26	255.992648
26 AWG	0.0159	0.40386	26	252.802739
.4 MM	0.015748	0.4	26	247.992381
26.5 AWG	0.015	0.381	26.5	224.993538
28 SWG	0.0148	0.37592	27	219.033709
27 AWG	0.0142	0.36068	27	201.634209
.355 MM	0.013976	0.355	27	195.332749
29 SWG	0.0136	0.34544	27	184.954688
28 BWG	0.0135	0.3429	28	182.244766
27.5 AWG	0.0134	0.34036	27.5	179.554843
29 BWG	0.013	0.3302	28	168.995146
28 AWG	0.0126	0.32004	28	158.75544
.315 MM	0.012402	0.315	28	153.794025
30 SWG	0.0124	0.31496	28	153.755584
30 BWG	0.012	0.3048	29	143.995864
28.5 AWG	0.0119	0.30226	28.5	141.605933
.31 MM	0.0118	0.29972	29	139.236001
31 SWG	0.0116	0.29464	29	134.556135
29 AWG	0.0113	0.28702	29	127.686333
.28 MM	0.011024	0.28	29	121.516267
32 SWG	0.0108	0.27432	29	116.63665
29.5 AWG	0.0106	0.26924	29.5	112.356773
30 AWG	0.01	0.254	30	99.997128
33 SWG	0.01	0.254	30	99.997128
31 BWG	0.01	0.254	30	99.997128
.25 MM	0.009843	0.25	30	96.872024
30.5 AWG	0.0095	0.2413	30.5	90.247408
34 SWG	0.0092	0.23368	31	84.637569
32 BWG	0.009	0.2286	31	80.997674
31 AWG	0.0089	0.22606	31	79.207725
.224 MM	0.008819	0.224	31	77.770411
35 SWG	0.0084	0.21336	32	70.557974
31.5 AWG	0.0084	0.21336	31.5	70.557974

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
32 AWG	0.008	0.2032	32	63.998162
33 BWG	0.008	0.2032	32	63.998162
.2 MM	0.007874	0.2	32	61.998095
36 SWG	0.0076	0.19304	32	57.758341
32.5 AWG	0.0075	0.1905	32.5	56.248385
33 AWG	0.0071	0.18034	33	50.408552
.18 MM	0.007087	0.18	33	50.218457
35 BWG	0.007	0.1778	33	48.998593
37 SWG	0.0068	0.17272	33	46.238672
33.5 AWG	0.0067	0.17018	33.5	44.888711
34 AWG	0.0063	0.16002	34	39.68886
.16 MM	0.006299	0.16	34	39.678781
38 SWG	0.006	0.1524	34	35.998966
34.5 AWG	0.0059	0.14986	34.5	34.809
35 AWG	0.0056	0.14224	35	31.359099
.14 MM	0.005512	0.14	35	30.379067
35.5 AWG	0.0053	0.13462	35.5	28.089193
39 SWG	0.0052	0.13208	36	27.039223
36 AWG	0.005	0.127	36	24.999282
35 BWG	0.005	0.127	36	24.999282
.125 MM	0.004921	0.125	36	24.218006
40 SWG	0.0048	0.12192	36	23.039338
36.5 AWG	0.0047	0.11938	36.5	22.089366
37 AWG	0.0045	0.1143	37	20.249418
.112 MM	0.004409	0.112	37	19.442603
41 SWG	0.0044	0.11176	37	19.359444
37.5 AWG	0.0042	0.10668	37.5	17.639493
38 AWG	0.004	0.1016	38	15.99954
42 SWG	0.004	0.1016	38	15.99954
36 BWG	0.004	0.1016	38	15.99954
.1 MM	0.003937	0.1	38	15.499524
38.5 AWG	0.0037	0.09398	38.5	13.689607
43 SWG	0.0036	0.09144	39	12.959628
.09 MM	0.003543	0.09	39	12.554614
39 AWG	0.0035	0.0889	39	12.249648
39.5 AWG	0.0033	0.08382	39.5	10.889687
44 SWG	0.0032	0.08128	40	10.239706
.08 MM	0.00315	0.08	40	9.919695
40 AWG	0.0031	0.07874	40	9.609724
40.5 AWG	0.003	0.0762	40.5	8.999742
41 AWG	0.0028	0.07112	41	7.839775
45 SWG	0.0028	0.07112	41	7.839775
.071 MM	0.002795	0.071	41	7.81331
41.5 AWG	0.0026	0.06604	41.5	6.759806
42 AWG	0.0025	0.0635	42	6.249821
.063 MM	0.00248	0.063	42	6.151761
46 SWG	0.0024	0.06096	42	5.759835
42.5 AWG	0.0024	0.06096	42.5	5.759835
43 AWG	0.0022	0.05588	43	4.839861
43.5 AWG	0.0021	0.05334	43.5	4.409873
44 AWG	0.002	0.0508	44	3.999885
47 SWG	0.002	0.0508	44	3.999885

AWG/SWG/ BWG/MM	Bare Dia. (Inch)	Bare Dia. (MM)	AWG No.	Circular Mils
.05 MM	0.001969	0.05	44	3.874881
44.5 AWG	0.001866	0.0474	44.5	3.481856
45 AWG	0.001761	0.04473	45	3.101032
45.5 AWG	0.001662	0.04221	45.5	2.762165
48 SWG	0.0016	0.04064	45.5	2.559926
46 AWG	0.001568	0.03983	46	2.458553
46.5 AWG	0.00148	0.03759	46.5	2.190337
47 AWG	0.001397	0.03548	47	1.951553
47.5 AWG	0.001318	0.03348	47.5	1.737074
48 AWG	0.001244	0.0316	48	1.547492
49 SWG	0.0012	0.03048	48	1.439959
48.5 AWG	0.001174	0.02982	48.5	1.378236
49 AWG	0.001108	0.02814	49	1.227629
49.5 AWG	0.001045	0.02654	49.5	1.091994
50 SWG	0.001	0.0254	49	0.999971
50 AWG	0.000986	0.02505	50	0.97276
50.5 AWG	0.000931	0.02364	50.5	0.866364
51 AWG	0.000878	0.02231	51	0.771389
51.5 AWG	0.000829	0.02105	51.5	0.687055
52 AWG	0.000782	0.01987	52	0.611819
52.5 AWG	0.000738	0.01875	52.5	0.544776
53 AWG	0.000697	0.01769	53	0.485238
53.5 AWG	0.000657	0.0167	53.5	0.432031
54 AWG	0.00062	0.01576	54	0.384761
54.5 AWG	0.000585	0.01487	54.5	0.342683
55 AWG	0.000552	0.01403	55	0.305137
55.5 AWG	0.000521	0.01324	55.5	0.271746
56 AWG	0.000492	0.01249	56	0.241959
56.5 AWG	0.000464	0.01179	56.5	0.215475
57 AWG	0.000438	0.01113	57	0.191926
57.5 AWG	0.000413	0.0105	57.5	0.170895
58 AWG	0.00039	0.00991	58	0.152174
58.5 AWG	0.000368	0.00935	58.5	0.135494
59 AWG	0.000347	0.00882	59	0.120683
59.5 AWG	0.000328	0.00833	59.5	0.10745
60 AWG	0.000309	0.00786	60	0.095726