

ELECTRICAL CONDUCTORS INTERNATIONAL STANDARD SIZES CONVERSION CHART (ANNEALED COPPER STRANDED CONDUCTORS)

Nominal Area			B & SG (AWG)	Stranding and Wire Diameter		Approx Overall (Equivalent) Diameter		Calculated Electrical Area			Nominal Weight		Standard Resistance at 20°C (68°F) (Plain Wire)	
inch ²	mm ²	cir mils		inch	mm	inch	mm	inch ²	mm ²	cir mils	lb/K yd.	kg/km	Ω/K yd	Ω/km
—	0.50	1,020	20			0.032	0.81	0.0008042	0.5188	1024	9.30	4.613	30.38	33.23
—	—	1,020	20	7/0.0121	7/0.307	0.036	0.91	0.0007914	0.5106	1008	9.47	4.698	30.88	33.77
0.001	—	—	—			0.036	0.91	0.001018	0.6567	1296	11.77	5.838	24.01	26.26
0.001	—	—	—	3/0.020	3/0.508	0.043	1.09	0.000924	0.5961	1176	11.11	5.512	26.45	28.92
—	0.75	—	—			0.039	0.99	0.001195	0.7707	1521	13.81	6.851	20.46	22.37
—	—	1,620	18	1/0.0403	1/1.02	0.040	1.02	0.00128	0.8239	1630	14.75	7.316	19.16	20.95
—	—	1,620	18			0.046	1.16	0.001249	0.8057	1590	14.94	7.410	19.57	21.40
0.0015	—	—	—	1/0.044	1/1.12	0.044	1.12	0.001521	0.9810	1936	17.58	8.721	16.07	17.58
—	1.0	—	—			0.045	1.14	0.001590	1.026	2025	18.39	9.122	15.36	16.80
—	1.0	—	—	7/0.017	7/0.432	0.051	1.30	0.001562	1.008	1989	18.68	9.266	15.64	17.11
0.002	—	—	—			0.062	1.59	0.001943	1.253	2474	23.37	11.59	12.58	13.76
—	—	2,580	16	1/0.0508	1/1.29	0.051	1.29	0.00203	1.308	2585	23.43	11.63	12.06	13.19
—	—	2,580	16			0.058	1.46	0.001993	1.286	2537	23.83	11.82	12.26	13.41
—	1.5	—	—	1/0.055	1/1.40	0.055	1.40	0.002376	1.533	3025	27.47	13.63	10.29	11.25
—	1.5	—	—			0.063	1.60	0.002384	1.538	3035	28.51	14.14	10.25	11.21
0.003	—	—	—	3/0.036	3/0.914	0.078	1.97	0.002994	1.931	3812	36.01	17.86	8.163	8.927
0.003	—	—	—			0.064	1.63	0.003217	2.075	4096	37.20	18.45	7.596	8.307
—	—	4,110	14	1/0.0641	1/1.63	0.064	1.63	0.00323	2.082	4113	37.31	18.351	7.572	8.281
—	—	4,110	14			0.073	1.84	0.003166	2.042	4031	37.86	18.78	7.719	8.442
—	2.5	—	—	1/0.071	1/1.80	0.071	1.80	0.003959	2.554	5041	45.78	22.71	6.172	6.750
—	2.5	—	—			0.081	2.06	0.003941	2.542	5017	47.13	23.38	6.201	6.782
0.0045	—	—	—	7/0.029	7/0.737	0.087	2.21	0.004546	2.933	5788	54.37	26.97	5.375	5.879
—	—	6,530	12			0.081	2.05	0.00513	3.308	6532	59.29	29.41	4.766	5.212
—	—	6,530	12	7/0.0305	7/775	0.092	2.32	0.005028	3.244	6402	60.14	29.84	4.860	5.315
—	4	—	—			0.089	2.26	0.006221	4.014	7921	71.93	35.68	3.928	4.296
—	4	—	—	7/0.034	7/0.864	0.102	2.59	0.006249	4.032	7956	74.74	37.08	3.911	4.277
0.007	—	—	—			0.108	2.74	0.007005	4.520	8920	83.80	41.57	3.489	3.815
—	—	10,380	10	1/0.1019	1/2.59	0.102	2.59	0.008155	5.261	10380	94.29	46.77	2.996	3.277
—	—	10,380	10			0.116	2.93	0.008012	5.169	10200	95.83	47.54	3.050	3.335
—	6	—	—	1/0.109	1/2.77	0.109	2.77	0.09331	6.020	11880	107.9	53.52	2.619	2.864
—	6	—	—			0.126	3.21	0.009535	6.152	12140	114.0	56.55	2.563	2.803
—	—	13,090	9	1/0.114	1/2.91	0.1144	2.91	0.01028	6.634	13090	118.8	58.93	2.377	2.600
—	—	13,090	9			0.130	3.30	0.01009	6.508	12840	120.7	59.86	2.422	2.649
0.01	—	—	—	7/0.044	7/1.12	0.132	3.35	0.01046	6.751	13320	125.2	62.11	2.335	2.555
—	—	16,510	8			0.128	3.26	0.01297	8.366	16510	150.0	74.36	1.884	2.061
—	—	16,510	8	7/0.0486	7/1.23	0.146	3.70	0.01277	8.237	18260	152.7	75.75	1.914	2.093
0.0145	—	—	—			0.156	3.96	0.01462	9.430	18610	174.8	86.71	1.672	1.828
—	10	—	—	1/0.141	1/3.58	0.141	3.58	0.01561	10.07	19880	180.5	89.54	1.565	1.711
—	10	—	—			0.162	4.12	0.01576	10.17	20070	188.5	93.51	1.550	1.695
—	—	20,820	7	1/0.1443	1/3.67	0.144	3.67	0.01635	10.55	20820	189.1	93.80	1.494	1.634
—	—	20,820	7			0.164	4.15	0.01606	10.36	20440	192.0	95.24	1.522	1.664
—	—	26,240	6			0.162	4.11	0.02061	13.30	26240	238.3	118.2	1.185	1.296
—	—	26,240	6	7/0.0612	7/1.55	0.184	4.66	0.02025	13.06	25780	242.2	120.1	1.207	1.320
0.0225	—	—	—			0.192	4.68	0.02214	14.28	28190	264.9	131.4	1.104	1.207
—	16	—	—	7/0.068	7/173	0.204	5.18	0.02499	16.12	31820	299.0	148.3	0.9777	1.069
—	—	33,090	5			0.206	5.24	0.02559	16.51	32580	306.0	151.8	0.9550	1.044
0.03	—	—	—	19/0.044	19/1.12	0.220	5.59	0.02835	18.29	36100	340.4	168.9	0.8619	0.9425
—	—	41,740	4			0.232	5.88	0.03222	20.78	41020	385.3	191.1	0.7585	0.8295
—	25	—	—	7/0.085	7/2.16	0.255	6.48	0.3905	25.19	49720	467.1	231.7	0.6257	0.6843
0.04	25	—	—	19/0.052	19/1.32	0.260	6.60	0.03960	25.55	50420	475.3	235.8	0.6171	0.6748
—	—	52,620	3			0.260	6.61	0.04063	26.21	51730	486.0	241.1	0.6014	0.6577
—	—	66,360	2	7/0.0974	7/2.47	0.292	7.42	0.05128	33.08	65290	613.3	304.2	0.4765	0.5211
—	35	—	—			0.300	7.62	0.05405	34.87	68820	646.5	320.7	0.4521	0.4944
—	35	—	—	19/0.061	19/1.55	0.305	7.75	0.05450	35.16	69390	654.2	324.5	0.4484	0.4904
0.06	—	—	—	19/0.064	19/1.63	0.320	8.13	0.05999	38.70	76380	720.2	357.3	0.4074	0.4455
—	—	83,690	1			0.332	8.43	0.06457	41.66	82210	775.1	384.5	0.3784	0.4139
0.075	—	—	—	19/0.072	19/1.83	0.360	9.14	0.07592	48.98	96660	911.4	452.1	0.3219	0.3520
—	50	—	—			0.365	9.27	0.07805	50.35	99380	936.9	464.8	0.3131	0.3424
—	—	105,600	1/0	.0745	19/1.89	0.373	9.46	0.08129	52.44	103500	975.8	484.1	0.3006	0.3288
1	—	—	—			0.415	10.5	0.1009	65.09	128500	1212.0	601.2	0.2422	0.2649
—	—	133,100	2/0	19/0.0837	19/2.13	0.419	10.6	0.1026	66.19	130600	1232.0	611.1	0.2382	0.2605
—	70	—	—			0.430	10.9	0.1083	69.87	137900	1300.0	645.0	0.2256	0.2467

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0.12	—	—	—	37/0.064	37/1.63	0.448	11.4	0.1168	45.33	148700	1403	696.0	0.2093	0.2289
—	—	167,800	3/0	19/0.094	19/2.39	0.470	11.9	0.1294	83.49	164800	1553	770.4	0.1888	0.2065
—	—	167,800	3/0	37/0.0673	37/1.71	0.471	12.0	0.1291	83.29	164400	1551	469.4	0.1888	0.2070
—	95	—	—	19/0.101	19/2.57	0.505	12.8	0.1494	96.39	190200	1793	889.4	0.1893	0.1789
0.15	95	—	—	37/0.072	37/1.83	0.504	12.8	0.1478	95.34	188100	1776	881.0	0.1636	0.1808
—	—	211,600	4/0	19/0.1055	19/2.68	0.528	13.4	0.1630	105.2	207500	1957	970.8	0.1499	0.1639
—	120	—	—	37/0.081	37/2.06	0.567	14.4	0.1870	120.7	238100	2247	1115	0.1307	0.1429
—	—	250,000	—	37/0.0822	37/2.09	0.575	14.6	0.1926	124.3	245200	2314	1148	0.1269	0.1388
0.20	—	—	—	37/0.083	37/2.11	0.581	14.8	0.1964	126.7	250000	2360	1171	0.1244	0.1361
—	150	300,000	—	37/0.090	37/2.29	0.630	16.0	0.2309	149.0	294000	2774	1376	0.1058	0.1157
0.25	—	—	—	37/0.093	37/2.36	0.651	16.5	0.2465	159.1	313900	2963	1470	0.09911	0.1084
—	—	350,000	—	37/0.0973	37/2.47	0.681	17.3	0.2699	174.1	343600	3243	1609	0.09055	0.09903
—	185	—	—	37/1.00	37/2.54	0.700	17.8	0.2851	183.9	363000	3426	1699	0.08572	0.09375
0.30	—	—	—	37/0.103	37/2.62	0.721	18.3	0.3024	195.1	385000	334	1803	0.08081	0.08837
—	—	400,000	—	37/0.104	37/2.64	0.728	18.5	0.3083	198.9	392500	3705	1838	0.07926	0.08668
—	240	—	—	37/0.114	37/2.90	0.798	20.3	0.3705	239.0	471700	4452	2208	0.06596	0.07214
—	240	—	—	61/0.089	61/2.26	0.801	20.3	0.3722	240.0	473900	4474	2219	0.06566	0.07181
—	—	500,000	—	37/0.1162	37/2.95	0.813	20.7	0.3849	248.3	490100	4625	2294	0.06349	0.06943
—	—	500,000	—	61/0.0905	61/2.30	0.814	20.7	0.3848	248.3	490000	4626	2295	0.06350	0.06944
0.40	—	—	—	61/0.093	61/2.36	0.837	21.3	0.4064	262.2	517400	4885	2423	0.06013	0.06576
—	300	—	—	61/0.099	61/2.51	0.891	22.6	0.4605	297.1	586500	5536	2746	0.05306	0.05803
—	—	600,000	—	61/0.0922	61/2.52	0.893	22.7	0.4624	298.3	588700	5558	2747	0.05285	0.05780
0.50	—	—	—	61/0.103	61/2.62	0.927	23.5	0.4985	321.6	634700	5992	2972	0.04902	0.05361
—	—	700,000	—	61/0.1071	61/2.72	0.964	24.5	0.5389	347.7	686200	6479	3214	0.04534	0.04959
—	—	750,000	—	61/0.1109	61/2.82	0.998	25.4	0.5779	372.8	735800	6947	3446	0.04229	0.04625
—	—	750,000	—	91/0.0908	91/2.31	0.999	25.4	0.5778	372.8	735700	6948	3447	0.04229	0.04625
0.60	—	—	—	91/0.093	91/2.36	1.023	26.0	0.6062	391.1	771800	7289	3616	0.04032	0.04409
—	400	—	—	61/0.114	61/2.90	1.026	26.1	0.6106	393.9	777400	7341	3642	0.04002	0.04377
—	—	800,000	—	61/0.1145	61/2.91	1.031	26.2	0.6160	397.4	784300	7405	3673	0.03967	0.04338
—	—	800,000	—	91/0.0938	91/2.38	1.032	26.2	0.6166	397.8	785100	7414	3678	0.03963	0.04334
0.75	—	—	—	91/0.103	91/2.62	1.133	28.8	0.7435	479.7	946700	8940	4435	0.03287	0.03594
—	500	1,000,000	—	61/0.1280	61/3.25	1.152	29.3	0.7698	496.6	980100	9254	4590	0.03174	0.03472
—	—	1,000,000	—	91/0.1048	91/2.66	1.153	29.3	0.7697	496.6	980100	9255	4591	0.03175	0.03472
0.85	—	—	—	127/0.093	127/2.36	1.209	30.7	0.8459	545.8	1077000	10173	5046	0.02889	0.03159
—	625	—	—	91/0.117	91/2.97	1.287	32.7	0.9594	619.0	1222000	11536	5722	0.02547	0.02786
—	—	1,250,000	—	91/0.1172	91/2.98	1.289	32.7	0.9627	621.1	1226000	11575	5742	0.02538	0.02776
—	—	1,250,000	—	127/0.0992	127/2.52	1.290	32.8	0.9625	620.9	1225000	11574	5741	0.02539	0.02777
1.0	—	—	—	127/0.103	127/2.62	1.339	34.0	1.0375	669.4	1321000	12478	6190	0.02355	0.02575
—	—	1,500,000	—	91/0.1284	91/3.26	1.412	35.9	1.155	745.5	1471000	13893	6892	0.02115	0.02313
—	—	1,500,000	—	127/0.1087	127/2.76	1.413	35.9	1.156	745.6	1471000	13897	6894	0.02115	0.02312
—	800	—	—	91/0.132	91/3.35	1.452	36.9	1.221	787.7	1555000	14683	7284	0.02001	0.02188
1.25	—	—	—	127/0.112	127/2.84	1.456	37.0	1.227	791.5	1562000	14784	7319	0.01992	0.02178
1.50	—	—	—	169/0.107	169/2.72	1.605	40.8	1.490	961.3	1897000	17920	8889	0.01640	0.01794
—	1000	—	—	91/0.147	91/3.73	1.617	41.1	1.514	976.8	1928000	18210	9033	0.01614	0.01765
—	—	2,000,000	—	127/0.1255	127/3.19	1.632	41.5	1.540	993.8	1961000	18525	9189	0.01586	0.01735
—	—	2,000,000	—	169/0.1088	169/2.76	1.632	41.5	1.541	993.9	1962000	18528	9191	0.01586	0.01735

Technical Reference

British Sizes

- B.S.7: 1953 and B.S480: 1954

B & SG (AWG) Sizes

- Based on C.E.S.A. C68A; A.S.T.M. B8-53 and I.P.C.E.A. 5-19-8
- Classes B & C (preferred sizes)

Metric Sizes

- V.D.E. 0255/551 and 026/52

British Sizes

The following tolerances on resistance are permitted in:

British Standard Specifications	Percent
Single Wires, Tinned, below 0.036 in. diameter	+5
Single Wires, Tinned, 0.036 in diameter and above	+4
Single Wires, Plain	+3
Standard conductor, Tinned, below 0.036 in. diameter	+4
Standard Conductor, tinned, 0.036 in. diameter and above	+3
Standard Conductor, Plain	+2

A further increase in resistance of 2 percent is allowable for the laying-up of twin and multicore cables.