

Wire sizes and power capacity chart

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Wire sizes and
power capacity

AWG Number	Diameter (inches)	Diameter (mm)	Cross-Section (mm ²)	Ohms per 1000 ft.	Ohms per km	Maximum amps for chassis wiring	Maximum amps for power transmission	Maximum frequency for 100% skin depth for solid conductor copper	Breaking force Soft Annealed Cu 37000 PSI	Ampacity (at 75 °C)	Current Ratings 2 Cables Single Phase Amp.	watts at 220v	watts at 48v	watts at 24v	watts at 12v
1000MCM			500												
750MCM			400												
600MCM			300												
500MCM			240												
350MCM			185												
300MCM			150												
120 mm ²			120 mm ²								260	57200	12480	6240	3120
0000 (4/0) AWG	0.4600 in	11.684 mm	107 mm ²	0.05	0.16	380	302	125 Hz	6120 lbs	230		50600	11040	5520	2760
37/.083											218	47960	10464	5232	2616
95 mm ²			95 mm ²								230	50600	11040	5520	2760
000 (3/0) AWG	0.4096 in	10.405 mm	85.0 mm ²	0.06	0.2	328	239	160 Hz	4860 lbs	200		44000	9600	4800	2400
37/.072											180	39600	8640	4320	2160
70 mm ²			70 mm ²								185	40700	8880	4440	2220
00 (2/0) AWG	0.3648 in	9.266 mm	67.4 mm ²	0.08	0.26	283	190	200 Hz	3860 lbs	175		38500	8400	4200	2100
0 (1/0) AWG	0.3249 in	8.251 mm	53.5 mm ²	0.1	0.32	245	150	250 Hz	3060 lbs	150		33000	7200	3600	1800
50 mm ²			50 mm ²								145	31900	6960	3480	1740
19/.083											140	30800	6720	3360	1680
1 AWG	0.2893 in	7.348 mm	42.4 mm ²	0.12	0.41	211	119	325 Hz	2430 lbs	130		28600	6240	3120	1560
35 mm ²			35 mm ²								90	19800	4320	2160	1080
2 AWG	0.2576 in	6.544 mm	33.6 mm ²	0.16	0.51	181	94	410 Hz	1930 lbs	115		25300	5520	2760	1380
19/.072											122	26840	5856	2928	1464
3 AWG	0.2294 in	5.827 mm	26.7 mm ²	0.2	0.65	158	75	500 Hz	1530 lbs	100		22000	4800	2400	1200
25 mm ²			25 mm ²								73	16060	3504	1752	876
19/.064											97	21340	4656	2328	1164
4 AWG	0.2043 in	5.189 mm	21.2 mm ²	0.25	0.82	135	60	650 Hz	1210 lbs	85		18700	4080	2040	1020
5 AWG	0.1819 in	4.621 mm	16.8 mm ²	0.31	1.03	118	47	810 Hz	960 lbs	-					
16 mm ²			16 mm ²								56	12320	2688	1344	672
19/.052											74	16280	3552	1776	888
6 AWG	0.1620 in	4.115 mm	13.3 mm ²	0.4	1.3	101	37	1100 Hz	760 lbs	65		14300	3120	1560	780

7 AWG	0.1443 in	3.665 mm	10.5 mm2	0.5	1.63	89	30	1300 Hz	605 lbs	-					
10 mm2			10 mm2								42	9240	2016	1008	504
7/.064											53	11660	2544	1272	636
8 AWG	0.1285 in	3.264 mm	8.37 mm2	0.63	2.06	73	24	1650 Hz	480 lbs	50		11000	2400	1200	600
7/.052											43	9460	2064	1032	516
9 AWG	0.1144 in	2.906 mm	6.63 mm2	0.79	2.6	64	19	2050 Hz	380 lbs	-					
6 mm2			6 mm2								31	6820	1488	744	372
7/.044											36	7920	1728	864	432
10 AWG	0.1019 in	2.588 mm	5.26 mm2	1	3.28	55	15	2600 Hz	314 lbs	35		7700	1680	840	420
11 AWG	0.0907 in	2.305 mm	4.17 mm2	1.26	4.13	47	12	3200 Hz	249 lbs	-					
4 mm2			4 mm2								24	5280	1152	576	288
7/.036											28	6160	1344	672	336
12 AWG	0.0808 in	2.053 mm	3.31 mm2	1.59	5.21	41	9.3	4150 Hz	197 lbs	25		5500	1200	600	300
2.5 mm2			2.5 mm2								18	3960	864	432	216
2 mm2			2 mm2								15	3300	720	360	180
13 AWG	0.0720 in	1.828 mm	2.62 mm2	2	6.57	35	7.4	5300 Hz	150 lbs	-					
7/.029											20	4400	960	480	240
14 AWG	0.0641 in	1.628 mm	2.08 mm2	2.53	8.28	32	5.9	6700 Hz	119 lbs	20		4400	960	480	240
15 AWG	0.0571 in	1.450 mm	1.65 mm2	3.18	10.44	28	4.7	8250 Hz	94 lbs	-					
16 AWG	0.0508 in	1.291 mm	1.31 mm2	4.02	13.17	22	3.7	11 k Hz	75 lbs	17		3740	816	408	204
1.5 mm2			1.5 mm2								13	2860	624	312	156
17 AWG	0.0453 in	1.150 mm	1.04 mm2	5.06	16.61	19	2.9	13 k Hz	59 lbs	-					
1 mm2			1 mm2								11	2420	528	264	132
3/.036											15	3300	720	360	180
18 AWG	0.0403 in	1.024 mm	0.823 mm2	6.39	20.94	16	2.3	17 kHz	47 lbs	14		3080	672	336	168
19 AWG	0.0359 in	0.912 mm	0.653 mm2	8.05	26.41	14	1.8	21 kHz	37 lbs	-					
20 AWG	0.0320 in	0.812 mm	0.518 mm2	10.15	33.29	11	1.5	27 kHz	29 lbs	11		2420	528	264	132
3/.029											10	2200	480	240	120
21 AWG	0.0285 in	0.723 mm	0.410 mm2	12.8	41.98	9	1.2	33 kHz	23 lbs	-					
22 AWG	0.0253 in	0.644 mm	0.326 mm2	16.14	52.94	7	0.92	42 kHz	18 lbs	7		1540	336	168	84
23 AWG	0.0226 in	0.573 mm	0.258 mm2	20.36	66.78	4.7	0.73	53 kHz	14.5 lbs	-					
1/.044											5	1100	240	120	60
24 AWG	0.0201 in	0.511 mm	0.205 mm2	25.67	84.2	3.5	0.58	68 kHz	11.5 lbs	3.5		770	168	84	42
25 AWG	0.0179 in	0.455 mm	0.162 mm2	32.37	106.17	2.7	0.46	85 kHz	9 lbs	-					
26 AWG	0.0159 in	0.405 mm	0.129 mm2	40.81	133.86	2.2	0.36	107 kHz	7.2 lbs	2.2		484	105.6	52.8	26.4
27 AWG	0.0142 in	0.361 mm	0.102 mm2	51.47	168.82	1.7	0.29	130 kHz	5.5 lbs	-					
28 AWG	0.0126 in	0.321 mm	0.0810 mm2	64.9	212.87	1.4	0.23	170 kHz	4.5 lbs	1.4		308	67.2	33.6	16.8
29 AWG	0.0113 in	0.286 mm	0.0642 mm2	81.83	268.4	1.2	0.18	210 kHz	3.6 lbs	-					
30 AWG	0.0100 in	0.255 mm	0.0509 mm2	103.2	338.5	0.86	0.14	270 kHz	2.75 lbs	0.86		189.2	41.28	20.64	10.32
31 AWG	0.0089 3 in	0.227 mm	0.0404 mm2	130.1	426.73	0.7	0.11	340 kHz	2.25 lbs	-					
32 AWG	0.0079 5 in	0.202 mm	0.0320 mm2	164.1	538.25	0.53	0.09	430 kHz	1.8 lbs	0.53		116.6	25.44	12.72	6.36
Metric 2.0				169.39	555.61	0.51	0.09	440 kHz							
33 AWG	0.0070 8 in	0.180 mm	0.0254 mm2	206.9	678.63	0.43	0.07	540 kHz	1.3 lbs	-					
Metric 1.8				207.5	680.55	0.43	0.07	540 kHz							

34 AWG	0.0063 0 in	0.160 mm	0.0201 mm ²	260.9	855.75	0.33	0.06	690 kHz	1.1 lbs	0.3		66	14.4	7.2	3.6
Metric 1.6				260.9	855.75	0.33	0.06	690 kHz							
35 AWG	0.0056 1 in	0.143 mm	0.0160 mm ²	329	1079.1 2	0.27	0.04	870 kHz	0.92 lbs	-					
Metric 1.4				339	1114	0.26	0.04	900 kHz							
36 AWG	0.0050 0 in	0.127 mm	0.0127 mm ²	414.8	1360	0.21	0.04	1100 kHz	0.72 lbs	-					
Metric 1.25				428.2	1404	0.2	0.03	1150 kHz							
37 AWG	0.0044 5 in	0.113 mm	0.0100 mm ²	523.1	1715	0.17	0.03	1350 kHz	0.57 lbs	-					
Metric 1.12				533.8	1750	0.16	0.03	1400 kHz							
38 AWG	0.0039 7 in	0.101 mm	0.00797 mm ²	659.6	2163	0.13	0.02	1750 kHz	0.45 lbs	-					
Metric 1				670.2	2198	0.13	0.02	1750 kHz							
39 AWG	0.0035 3 in	0.0897 mm	0.00632 mm ²	831.8	2728	0.11	0.02	2250 kHz	0.36 lbs	-					
40 AWG	0.0031 4 in	0.0799 mm	0.00501 mm ²	1049	3440	0.09	0.01	2900 kHz	0.29 lbs	-					

Imperial Sizes BSS-2004				Metric Sizes BSS-6004			
No & Nominal Diameter of Wires	Nominal Cross Sectional ares of conductor		Current Rating 2 Cables Single Phase	Nominal Cross Sectional ares of conductor	No. and Diameter of Wires	Current rating 2 Cables Single Phase	
	IN	IN²	MM²			AMP	AMP
1/.044	0.0015	0.96	9	1	1/1.13	11	9
3/.029	0.002	1.29	10	1.5	1/1.38	13	11
3/.036	0.003	1.94	15	1.5	1/1.39	13	11
7/.029	0.0045	2.9	20	2.5	1/1.78	18	16
7/.036	0.007	4.52	28	4	7/0.85	24	22
7/.044	0.01	6.45	36	6	7/1.04	31	28
7/.052	0.0145	9.35	43	10	7/1.35	42	39
7/.064	0.0225	14.52	53	16	7/1.70	56	50
19/.044	0.03		62	20		62	56
19/.052	0.04	25.81	74	25	7/2.14	73	66
19/.064	0.06	38.71	97	35	19/1.53	90	80
19/.072			120	50	19/1.78	145	125
19/.083	0.1	64.52	140	70	19/2.14	185	160
37/.072	0.15	96.77	180	95	19/2.52	230	195
37/.083	0.2	129	218	120	37/2.03	260	220
37/.093	0.25			150	37/2.25	355	320
37/.103	0.3	193.5	284	185	37/2.52	405	365
61/.093	0.4			240	61/2.25	480	430
61/.103	0.5			300	61/2.52	560	500
91/.093	0.6			400	61/2.85	680	610
91/.103	0.75			500	61/3.20	800	710

Imperial Sizes BSS-2004				Metric Sizes BSS-6004			
127/.103	1			630	91/2.98	910	820
				FLEXIBLE			
14/.0076	0.0006	0.39	2	0.5	16/0.20	3	
23/.0076	0.001	0.65	5	0.75	24/0.20	6	
40/.0076	0.0017	1.1	10	1	32/0.20	10	
70/.0076	0.003	1.94	15	1.5	30/0.25	15	
110/.0076	0.0048	3.1	20	2.5	50/0.25	20	
162/.0062	0.007	4.52	25	4MM ²	56/0.30	25	

[Wire Size Calculator](#)