



Current Carrying Capacity of Copper Conductors

The current carrying capacity is defined as the current in amps that can be applied on a conductor before it causes a temperature rise which would exceed its rated values. There are many factors which influence what the current capacity is, including conductor resistance (size and material), ambient temperature of the environment, Temperature rating of wire (Conductor and insulation material), installation method, number of conductors, and elevation.

Because of these factors it is not a simple task to provide a rating when asked. The below are tables which address single and small bundles of wire in free air. Material confined in conduit, or bundled with other wires are not covered by these tables.

Table 1

Single Conductor in Free Air

AWG Size	Amperes					
	Temperature Difference (Maximum Wire Rating - Ambient Air Temperature)					
	60°C	75°C	95°C	120°C	150°C	170°C
30	3	3	4	4	5	5
28	4	4	5	6	6	6
26	6	7	8	9	9	10
24	8	8	10	11	12	13
22	11	12	13	15	17	18
20	14	16	18	20	22	23
18	19	22	23	26	30	32
16	22	24	28	32	34	37
14	30	33	36	40	45	50
12	38	44	50	54	60	68
10	50	60	68	74	80	86
8	80	90	100	110	120	130
6	110	120	130	150	170	180
4	150	160	180	200	230	240
2	200	220	240	280	300	320
1	230	260	300	330	350	380
1/0	280	300	330	380	410	450
2/0	310	330	380	430	470	510
3/0	360	380	460	510	580	610
4/0	450	480	520	600	680	720

Table 2



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Correction Factors for Number of Conductors

Number of Conductors	Factor
1	1.0
2	.85
3	.72
4	.64
5	.60
6	.56
7	.53
8	.50
9	.48
10	.46

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