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National Electrical Code
Allowable Ampacities of Insulated Conductors Rated 0-2000 Volts

As Excerpted from the 2002 National Electrical Code

Ampacities of Not More Than Three Current-Carrying Conductors in Raceway, Cable or Earth. Based on Ambient Temperature of 30°C (86°F)

SIZE AWG OR kcmil	Copper Conductors			Aluminum Conductors			SIZE AWG OR kcmil
	Temperature Rating of Conductor			Temperature Rating of Conductor			
	60°C	75°C	90°C	60°C	75°C	90°C	
	TYPES	TYPES	TYPES	TYPES	TYPES	TYPES	
	TW UF	RHW THW THWN USE	RHH RHW-2 THHN XHHW XHHW-2 XHH	TW UF	RHW THW THWN USE	RHH RHW-2 THHN THWN-2 XHHW XHHW-2 XHH	
14*	20	20	25	-	-	-	-
12*	25	25	30	20	20	25	12**
10*	30	35	40	25	30	35	10**
8	40	50	55	30	40	45	8
6	55	65	75	40	50	60	6
4	70	85*	95*	55	65	75	4
3	85	100*	110*	65	75	85	3
2	95	115*	130*	75	90*	100*	2
1	110	130*	150*	85	100*	115*	1
1/0	125	150*	170*	100	120*	135*	1/0
2/0	145	175*	195*	115	135*	150*	2/0
3/0	165	200*	225*	130	155*	175*	3/0
4/0	195	230*	260*	150	180*	205*	4/0
250	215	255*	290*	170	205*	230*	250
300	240	285	320	190	230*	255*	300
350	260	310*	350*	210	250*	280*	350
400	280	335*	380*	225	270	305	400
500	320	380	430	260	310*	350*	500
600	355	420	475	285	340*	385*	600
700	385	460	520	310	375	420	700
750	400	475	535	320	385	435	750
800	410	490	555	330	395	450	800
900	435	520	585	355	425	480	900
1000	455	545	615	375	445	500	1000
1250	495	590	665	405	485	545	1250
1500	520	625	705	435	520	585	1500
1750	545	650	735	455	545	615	1750
2000	560	665	750	470	560	630	2000

Full Load Currents (In Amperes) For Single-Phase Transformers
Voltage (Line-to-Line)

KVA Rating	120 V	208 V	240 V	277 V	480 V	600 V
.050	.42	.24	.21	.18	.10	.08
.075	.63	.36	.31	.27	.16	.13
.100	.83	.48	.42	.36	.21	.17
.150	1.25	.72	.63	.54	.31	.25
.250	2.08	1.20	1.04	.90	.52	.42
.500	4.16	2.40	2.08	1.8	1.04	.83
.750	6.25	3.60	3.13	2.7	1.56	1.25
1	8.3	4.8	4.2	3.6	2.1	1.7
1.5	12.5	7.2	6.2	5.4	3.1	2.5
2	16.7	9.6	8.3	7.2	4.2	3.3
3	25	14.4	12.5	10.8	6.2	5.0
5	41.7	24	20.8	18.0	10.4	8.3
7.5	62.5	36.1	31.2	27	15.6	12.5
10	83.4	48	41.6	36	20.8	16.7
15	125	72	62.5	54	31.2	25
25	208	120	104	90	52	41.7
37.5	312	180	156	135	78	62.5
50	417	240	208	180	104	83.5
75	625	361	312	270	156	125
100	834	480	416	361	208	167
167	1396	805	698	602	349	279

Full Load Currents (In Amperes) For Three-Phase Transformers
Voltage (Line-to-Line)

KVA Rating	208 V	240 V	480 V	600 V
3	8.3	7.2	3.6	2.9
6	16.6	14.4	7.2	5.8
9	25	21.6	10.8	8.7
15	41.6	36.0	18.0	14.4
30	83	72	36	29
45	125	108	54	43
75	208	180	90	72
112.5	312	270	135	108
150	416	360	180	144
225	625	542	271	217
300	830	720	360	290
500	1390	1200	600	480
750	2080	1800	900	720

For Other Single-Phase KVA Ratings or Voltages

$$\text{Amperes} = \frac{\text{KVA} \times 1000}{\text{Volts}}$$

For Other Three-Phase KVA Ratings or Voltages

$$\text{Amperes} = \frac{\text{KVA} \times 1000}{\text{Volts} \times 1.732}$$

NEMA electrical motor starters refer to a standardized rating system for the electrical performance of the most common style of American-built motor starters. NEMA starters are rated by size: *00, 0, 1, 2, 3, 4, 5, 6 and 7.*

Three Phase Motors - Maximum electrical motor horsepower for different NEMA starters for three phase motors can be found in the table below:

Maximum Horsepower *(hp)*										
NEMA Size	NEMA Continuous Amp Rating *(amps)*	Full Voltage Starting			Part Winding Starting			Wye Delta Starting		
		200V	230V	460V 575V	200V	230V	460V 575V	200V	230V	460V 575V
00	9	1 1/2	1 1/2	2						
0	18	3	3	5						
1	27	7.5	7.5	10	10	10	15	10	10	15
2	45	10	15	25	20	25	40	20	25	40
3	90	25	30	50	40	50	75	40	50	75
4	135	40	50	100	75	75	150	60	75	150
5	270	75	100	200	150	150	350	150	150	300
6	540	150	200	400		300	600	300	350	700
7	810		300	600		450	900	500	500	1,000

Single Phase Motors - Maximum horsepower with full voltage starting and two pole contactors are indicated below:

Maximum Horsepower *(hp)*		
NEMA Size	115 volts	230 volts
00	1/3	1
0	1	2
1	2	3
2	3	7.5
3	7.5	15