

Allowable Ampacity Tables



NFPA 70: NEC - 2023

Table 310.16

Ampacities Of Insulated Conductors with Not More Than Three Current-Carrying Conductors In Raceway, Cable, or Earth (Directly Buried)

Size AWG or kcmil	Temperature Rating of Conductor		
	60°C (140°F)	75°C (167°F)	90°C (194°F)
	Type: TW, UF	Type: RHW, THHW, THW, THWN, XHHW, XHWN, ZW	Type: TBS, SA, SIS, FEP, FEPB, MI, PFA, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, XHWN, XHWN-2, XHHN, Z, ZW-2
COPPER			
18*	-	-	14
16*	-	-	18
14*	15	20	25
12*	20	25	30
10*	30	35	40
8	40	50	55
6	55	65	75
4	70	85	95
3	85	100	115
2	95	115	130
1	110	130	145
1/0	125	150	170
2/0	145	175	195
3/0	165	200	225
4/0	195	230	260
250	215	255	290
300	240	285	320
350	260	310	350
400	280	335	380
500	320	380	430
600	350	420	475
700	385	460	520
750	400	475	535
800	410	490	555
900	435	520	585
1000	455	545	615
1250	495	590	665
1500	525	625	705
1750	545	650	735
2000	555	665	750

Notes:

- Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F).
 - Section 310.15(C)(1) shall be referenced for than three current-carrying conductors.
 - Section 310.16 shall be referenced for conditions of use.
- *Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere by the Code. Overcurrent protection for conductor types marked with an asterisk shall not exceed 7 amperes AWG18, 10 amperes for AWG16, 15 amperes for AWG14, 20 amperes for AWG12, and 30 amperes for AWG10, after any correction factors for ambient temperature and number of conductors have been applied.

Table 310.17

Ampacities of Single-Insulated Conductors in Free Air

Size AWG or kcmil	Temperature Rating of Conductor		
	60°C (140°F)	75°C (167°F)	90°C (194°F)
	Type: TW, UF	Type: RHW, THHW, THW, THWN, XHHW, XHWN, ZW	Type: TBS, SA, SIS, FEP, FEPB, MI, PFA, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, XHWN, XHWN-2, XHHN, Z, ZW-2
COPPER			
18	-	-	18
16	-	-	24
14*	25	30	35
12*	30	35	40
10*	40	50	55
8	60	70	80
6	80	95	105
4	105	125	140
3	120	145	165
2	140	170	190
1	165	195	220
1/0	195	230	260
2/0	225	265	300
3/0	260	310	350
4/0	300	360	405
250	340	405	455
300	375	445	500
350	420	505	570
400	455	545	615
500	515	620	700
600	575	690	780
700	630	755	850
750	655	785	885
800	680	815	920
900	730	870	980
1000	780	935	1055
1250	890	1065	1200
1500	980	1175	1325
1750	1070	1280	1445
2000	1155	1385	1560

Notes:

- Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F).
 - Section 310.17 shall be referenced for conditions of use.
- *Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere by the Code. Overcurrent protection for conductor types marked with an asterisk shall not exceed 15 amperes for AWG14, 20 amperes for AWG12, and 30 amperes for AWG10, after any correction factors for ambient temperature and number of conductors have been applied.

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Table 310.15(B)(1)(1)

Ambient Temperature Correction Factors
Based on 30°C (86°F)

For ambient temperatures other than 30°C (86°F), multiply the ampacities specified in the ampacity tables by the appropriate correction factor shown below.				
Ambient Temperature		Temperature Rating of Conductor		
°C	°F	60°C (140°F)	75°C (167°F)	90°C (194°F)
<10	<50	1.29	1.20	1.15
11-15	51-59	1.22	1.15	1.12
16-20	60-68	1.15	1.11	1.08
21-25	69-77	1.08	1.05	1.04
26-30	78-86	1.00	1.00	1.00
31-35	87-95	0.91	0.94	0.96
36-40	96-104	0.82	0.88	0.91
41-45	105-113	0.71	0.82	0.87
46-50	114-122	0.58	0.75	0.82
51-55	123-131	0.41	0.67	0.76
56-60	132-140	-	0.58	0.71
61-65	141-149	-	0.47	0.65
66-70	150-158	-	0.33	0.58
71-75	159-167	-	-	0.50
76-80	168-176	-	-	0.41
81-85	177-185	-	-	0.29

Note:
Table 310.15(B)(1)(1) shall be referenced with Table 310.16 and Table 310.17 as required

Table 310.15(C)(1)

Adjustment Factors for More Than Three Current-Carrying Conductors

Number of Conductors	Percent of Values in Tables Adjusted for Ambient Temperature if Necessary
4-6	80
7-9	70
10-20	50
21-30	45
31-40	40
41 & above	35

*Number of conductors is the number of conductors in the raceway or cable, including spare conductors. The count shall be adjusted in accordance with 310.15(E) and (F). The count shall not include conductors that are connected to electrical components that cannot be simultaneously energized.

Example

PN: 710466 - TRAYCONTROL® 600 7C AWG8 (6C + G/Y Ground)

Use Example PN at 90°C

Ampacity @ 30°C	Current-Carrying Conductor Adjustment Factor Table 310.15(C)(1) Value	Allowable Ampacity
55	0.80	44

Use Example PN at 40°C

Ampacity @ 30°C	Current-Carrying Conductor Adjustment Factor Table 310.15(C)(1) Value	Ambient Temperature Correction Factor Table 310.15(B)(1)(1) Value	Allowable Ampacity
55	0.80	0.91	40

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	60°C (140°F)	75°C (167°F)	90°C (194°F)
	ALUMINUM or COPPER-CLAD ALUMINUM		
18	-	-	-
16	-	-	-
14*	-	-	-
12*	25	30	35
10*	35	40	45
8	45	55	60
6	60	75	85
4	80	100	115
3	95	115	130
2	110	135	150
1	130	155	175
1/0	150	180	205
2/0	175	210	235
3/0	200	240	270
4/0	235	280	315
250	265	315	355
300	290	350	395
350	330	395	445
400	355	425	480
500	405	485	545
600	455	545	615
700	500	595	670
750	515	620	700
800	535	645	725
900	580	700	790
1000	625	750	845
1250	710	855	965
1500	795	950	1070
1750	875	1050	1185
2000	960	1150	1295

Notes:
 1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F)
 2. Section 310.17 shall be referenced for conditions of use.
 *Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere by the Code

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	ALUMINUM or COPPER-CLAD ALUMINUM		
18*	-	-	-
16*	-	-	-
14*	-	-	-
12*	15	20	25
10*	25	30	35
8	35	40	45
6	40	50	55
4	55	65	75
3	65	75	85
2	75	90	100
1	85	100	115
1/0	100	120	135
2/0	115	135	150
3/0	130	155	175
4/0	150	180	205
250	170	205	230
300	195	230	260
350	210	250	280
400	225	270	305
500	260	310	350
600	285	340	385
700	315	375	425
750	320	385	435
800	330	395	445
900	355	425	480
1000	375	445	500
1250	405	485	545
1500	435	520	585
1750	455	545	615
2000	470	560	630

Notes:
 1. Section 310.15(B) shall be referenced for ampacity correction factors where the ambient temperature is other than 30°C (86°F)
 2. Section 310.15(C)(1) shall be referenced for than three current-carrying conductors.
 3. Section 310.16 shall be referenced for conditions of use.
 *Section 240.4(D) shall be referenced for conductor overcurrent protection limitations, except as modified elsewhere by the Code