

Ampacity per National Electric Code (USA)

Calculation of the max. ampacity (Based on „NEC 2017 Edition“)

Allowable Ampacities of Insulated Conductors Rated 0 Through 2000 Volts, 60°C - 90°C (140°F - 194°F), Not More Than Three Current Carrying Conductors in Raceway, Cable or Earth (Directly Buried), Based on Ambient Temperature of 30°C (86°F)* (Based on Table 310.15(B)(16))

	Temperature Rating of Conductor		
	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)
	Types TW, UF	Types RHW, THHW, THW, THWN, XHHW, USE, ZW	Types TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW-2, ZW-2
Copper size AWG or kcmil			
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	5	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
350	260	310	350
500	320	380	430
750	400	475	535

* Refer to 310.15(B)(2) for the ampacity correction factors where the ambient temperature is other than 30°C (86°F)

** Refer to 240.4(D) for conductor overcurrent protection limitations

Correction Factors

1. Ambient temperature (Based on Table 310.15(B)(2))

For ambient temperatures other than 30 °C (86 °F),

multiply the allowable ampacities shown above by the appropriate factor shown below.

Ambient temp. °C	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)
21-25 (70-77 °F)	1.08	1.05	1.04
26-30 (78-86 °F)	1	1	1
31-35 (87-95 °F)	0.91	0.94	0.96
36-40 (96-104 °F)	0.82	0.88	0.91
41-45 (105-113 °F)	0.71	0.82	0.87
46-50 (114-122 °F)	0.58	0.75	0.82
51-55 (123-131 °F)	0.41	0.67	0.76
56-60 (132-140 °F)	–	0.58	0.71
61-65 (141-149 °F)	–	0.47	0.65
66-70 (150-158 °F)	–	0.33	0.58

2. Number of current carrying conductors (Based on Table 310.15(B)(3)A)

Adjustment Factors for more than three current carrying conductors in Raceway or cable.

Number of Current-Carrying Conductors	Percent of Values in Tables 310.15(B) through 310.15(B)(19) as Adjusted for Ambient Temperature if Necessary
1-3	100
4-6	80
7-9	70
10-20	50
21-30	45
31-40	40
40 and more	35

Number of conductors Is the total number of conductors in the raceway or cable adjusted in accordance with 310.15(B)(5) and (6)

Example:

Application with a Lutze DRIVEFLEX® XLPE (C) Servo I PVC, Shielded with control pair and an ambient temperature of 43 °C and a required ampacity of 34 Ampere.

1. Factor ambient temperature:

0.87

2. Percentage factor current carrying conductors:

80

55 A x 0.87 x 0.8 = 38 A > 34 A

Our recommendation is a AWG8 + 1 TSP AWG14, Item no. **A2170804**

Note: The given values are reference numbers to calculate the required cable sizes. LUTZE Inc. is not responsible for the conformity of the values provided by the NEC.