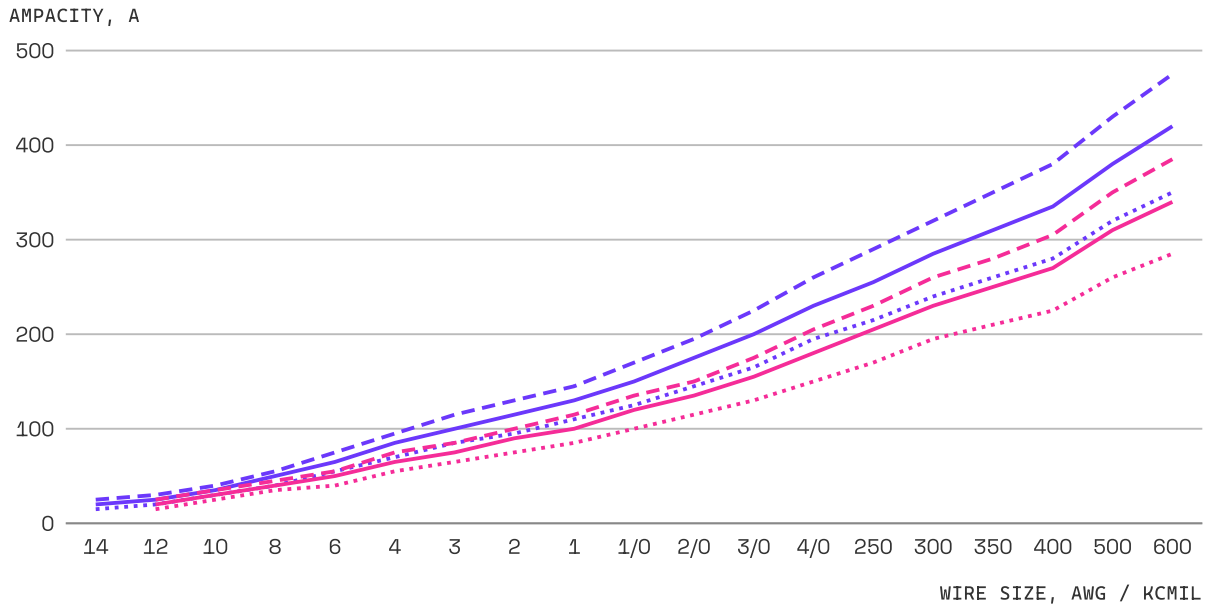
Wire ampacity chart

12 AWG copper is rated 20 A at 60 °C, 25 A at 75 °C and 30 A at 90 °C, but it may be protected by a breaker of no more than 20 A. Use the column that matches the lowest temperature rating in the circuit.

Ampacity of copper and aluminum wire in amps at 60, 75 and 90 °C, up to three current-carrying conductors at 30 °C (86 °F) ambient

SIZE	COPPER 60 °C, A	COPPER 75 °C, A	COPPER 90 °C, A	ALUMINUM 60 °C, A	ALUMINUM 75 °C, A	ALUMINUM 90 °C, A	SMALL-WIRE BREAKER LIMIT CU / AL
14 AWG	15	20	25	—	—	—	15 / n/a
12 AWG	20	25	30	15	20	25	20 / 15
10 AWG	30	35	40	25	30	35	30 / 25
8 AWG	40	50	55	35	40	45	—
6 AWG	55	65	75	40	50	55	—
4 AWG	70	85	95	55	65	75	—
3 AWG	85	100	115	65	75	85	—
2 AWG	95	115	130	75	90	100	—
1 AWG	110	130	145	85	100	115	—
1/0 AWG	125	150	170	100	120	135	—
2/0 AWG	145	175	195	115	135	150	—
3/0 AWG	165	200	225	130	155	175	—
4/0 AWG	195	230	260	150	180	205	—
250 kcmil	215	255	290	170	205	230	—
300 kcmil	240	285	320	195	230	260	—
350 kcmil	260	310	350	210	250	280	—
400 kcmil	280	335	380	225	270	305	—

SIZE	COPPER 60 °C, A	COPPER 75 °C, A	COPPER 90 °C, A	ALUMINUM 60 °C, A	ALUMINUM 75 °C, A	ALUMINUM 90 °C, A	SMALL-WIRE BREAKER LIMIT CU / AL
500 kcmil	320	380	430	260	310	350	—
600 kcmil	350	420	475	285	340	385	—



Ampacity by wire size, copper and aluminum at 60, 75 and 90 °C.

Which ampacity column to use

Values are for up to three current-carrying conductors in a raceway or cable at 30 °C (86 °F) ambient. NM-B cable is limited to the 60 °C column. THHN in conduit can use the 75 °C column when the breaker, panel and device terminals are all rated 75 °C. The 90 °C column is the starting point for derating in hot locations or crowded conduits, not a rating to size a breaker from.

Small-conductor breaker limits

The last column shows breaker limits that apply regardless of the ampacity column. Sizes without a value there are protected according to their ampacity.

SOURCES

- NFPA 70, National Electrical Code (2023): Allowable ampacities of insulated conductors, Table 310.16

- NFPA 70, National Electrical Code (2023): Overcurrent protection of small conductors, Section 240.4(D)

▶ Compared with 6 published documents, last on 2026-11-13

Calculated by Calculate.diy with the method of the National Electrical Code® (NEC®), 2023 edition; not the NEC text. Methodology. For planning only: check local code and use a licensed electrician.