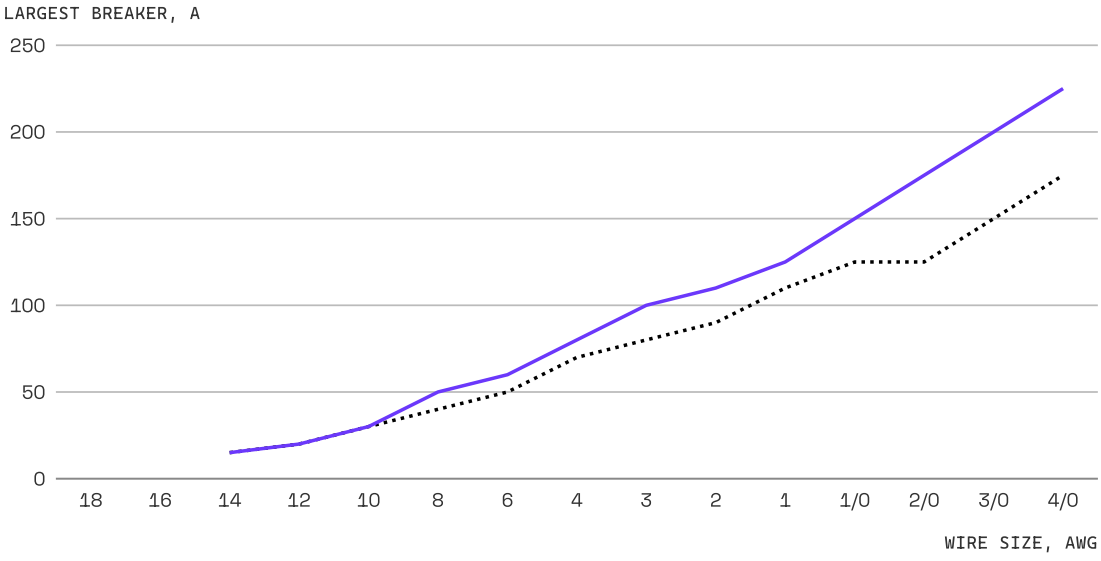
Wire gauge chart

The smaller the AWG number, the thicker the wire. In NM-B cable, 14 AWG copper is used on a 15 A breaker, 12 AWG on 20 A and 10 AWG on 30 A. 18 and 16 AWG are for cords and low-voltage wiring only.

Wire gauge chart: diameter, area, the largest breaker for copper in NM-B cable and at 75 °C, and common uses

AWG	DIAMETER, IN.	MM²	BREAKER, COPPER NM-B	BREAKER, COPPER 75 °C	COMMON USE
18 AWG	0.0403	0.823	—	—	Lamp cords and light-duty extension cords
16 AWG	0.0508	1.31	—	—	Light-duty extension cords
14 AWG	0.0641	2.08	15	15	Lighting and general outlet circuits
12 AWG	0.0808	3.31	20	20	Kitchen, bathroom, laundry and garage outlet circuits
10 AWG	0.1019	5.26	30	30	Electric dryer and water heater circuits
8 AWG	0.1285	8.37	40	50	Cooktops and wall ovens
6 AWG	0.1620	13.3	50	60	Electric ranges and EV chargers
4 AWG	0.2043	21.2	70	80	Feeders to sub panels
3 AWG	0.2294	26.7	80	100	Feeders to sub panels and detached buildings
2 AWG	0.2576	33.6	90	110	Feeders to sub panels and detached buildings
1 AWG	0.2893	42.4	110	125	Feeders and service entrance conductors
1/0 AWG	0.3249	53.5	125	150	Service entrance conductors
2/0 AWG	0.3648	67.4	125	175	Service entrance conductors
3/0 AWG	0.4096	85	150	200	Service entrance conductors and large feeders
4/0 AWG	0.4600	107.2	175	225	Service entrance conductors and large feeders



Largest breaker for copper wire by AWG size.

How to read the wire gauge chart

Breaker columns give the largest standard breaker the copper wire may be used on: its ampacity, capped by the small-conductor limits for 14, 12 and 10 AWG. Use the NM-B column for Romex cable in a house and the 75 °C column for THHN in conduit when every termination is rated 75 °C. Aluminum wire carries less current at the same size; see the ampacity chart.

Above 4/0, sizes are given in thousands of circular mils (kcmil): 600 kcmil is the largest size on this site.

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)
- NFPA 70, National Electrical Code (2023): Conductor properties, Chapter 9 Table 8

▶ Compared with 8 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.