

Wire Size for Home Appliances (AC, Geyser, EV Charger, Pump)

A quick chart of the recommended copper house-wire size and MCB for common home appliances.

Overview

Matching the wire size to the appliance keeps circuits cool and safe. This chart gives a starting-point copper conductor size and MCB rating for common household loads on a 230 V single-phase supply. For an exact figure by load and run length, use the wire-size calculator.

Appliance / circuit	Typical load	Copper wire	MCB
Lighting & fans	≤ 800 W	1.0 sq mm	6 A
5 A socket points	$\leq 1,100$ W	1.5 sq mm	10 A
15 A power sockets	$\leq 2,900$ W	2.5 sq mm	16 A
Geyser / water heater (2 kW)	2,000 W	2.5 sq mm	16 A
Geyser / water heater (3 kW)	3,000 W	4 sq mm	20 A
Air-conditioner (1–1.5 ton)	$\sim 1,800$ W	2.5 sq mm	16 A
Air-conditioner (2 ton)	$\sim 2,500$ W	4 sq mm	20 A
Kitchen appliance / microwave	$\leq 3,000$ W	2.5–4 sq mm	16–20 A
Submersible pump (1 HP)	$\sim 1,100$ W	2.5 sq mm	16 A
EV home charger (3.3 kW)	3,300 W	4 sq mm	20 A
EV home charger (7.4 kW)	7,400 W	6 sq mm	40 A

Size up for long runs, high ambient temperature or bunched cables. Browse matching APAR house wires.

Guidance only. Figures follow common Indian domestic practice (IS 732 / IS 694), assume copper conductors unless stated, and depend on run length, grouping, ambient temperature and installation. Always have the final design confirmed by a licensed electrician.