

Heat Pump Electrical Load Calculator

Estimates heat-pump equipment VA, auxiliary-heat VA, total load, and panel current from nameplate MCA, auxiliary heat, voltage, and phase.

Generated October 10, 2026

<https://www.elecatrix.com/residential-load-service/heat-pump-electrical-load-calculator/>

Inputs

Input	Value	Unit
Heat pump MCA	24	A
Auxiliary heat	10	kW
System voltage	240	V
Phase	Single-phase	

Results

Result	Value	Unit
Heat pump equipment load	5760	VA
Auxiliary heat load	10000	VA
Total heat pump load	15760	VA
Panel load current	65.6667	A
Phase multiplier	1	x

Calculation details

Detail	Value	Unit
Calculation basis	Heat pump equipment VA uses entered MCA, voltage, and phase. Auxiliary heat kW is converted to VA and added for a panel-load comparison.	
Selection boundary	Heat pump load estimate only; no branch circuit, conductor, breaker, nameplate interpretation, demand method, equipment listing, or code-compliance result is made.	

Formulas

$k_{\phi} = 1$ for single-phase; $\sqrt{3}$ for balanced three-phase

Heat pump equipment VA = Heat pump MCA x System voltage x k_{ϕ}

Heat Pump Electrical Load Calculator

Estimates heat-pump equipment VA, auxiliary-heat VA, total load, and panel current from nameplate MCA, auxiliary heat, voltage, and phase.

Generated October 10, 2026

<https://www.elecatrix.com/residential-load-service/heat-pump-electrical-load-calculator/>

Auxiliary heat VA = Auxiliary heat (kW) x 1000

Total heat pump load VA = Heat pump equipment VA + Auxiliary heat VA

Panel load current = $\frac{\text{Total heat pump load VA} \times \text{phi}}{\text{System voltage}}$

Warnings and limitations

This heat pump electrical load estimate uses entered nameplate and auxiliary-heat values. It does not select conductors, breakers, demand methods, equipment settings, or prove code compliance.