

Industrial Connected Load Calculator

Totals industrial equipment rows into connected kW, connected kVA, and line-current estimates from entered power factor, voltage, and phase basis.

Generated October 10, 2026

<https://www.elecatrix.com/commercial-industrial-loads/industrial-connected-load-calculator/>

Inputs

Input	Value	Unit
Industrial equipment rows	Rows: 3	
Row 1 - Equipment label	Process motor	
Row 1 - Quantity	2	units
Row 1 - Connected power per unit	15	kW
Row 1 - Power factor	85	%
Row 2 - Equipment label	Heater bank	
Row 2 - Quantity	1	units
Row 2 - Connected power per unit	20	kW
Row 2 - Power factor	100	%
Row 3 - Equipment label	Controls	
Row 3 - Quantity	1	units
Row 3 - Connected power per unit	2	kW
Row 3 - Power factor	95	%
System voltage	480	V
Phase	Balanced three-phase	
Inventory note	Record manufacturer, model, source, duty, and process group separately.	

Results

Result	Value	Unit
Connected load	52	kW

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Connected apparent load	57.3994	kVA
Connected current screen	69.0407	A
Largest row load	30	kW
Counted equipment rows	3	rows
Calculation details		

Detail	Value	Unit
Calculation basis	Each equipment row is multiplied by quantity. kVA is calculated from row kW and entered power factor, then total current is estimated from system voltage and phase.	
Industrial boundary	Connected-load inventory screen only; no demand factor, feeder, transformer, OCPD, SCCR, arc-flash, protection, or code-compliance result is made.	

Formulas

$$P_{row} = N_{row} \times P_{unit}$$

$$S_{row} = \frac{P_{row}}{PF}$$

$$P_{total} = \sum_i P_{row,i}$$

$$S_{total} = \sum_i S_{row,i}$$

$$I_{screen} = \frac{S_{total}}{1000m_phaseV}$$

Warnings and limitations

This is an industrial connected-load inventory screen. It does not apply production diversity, select feeders or transformers, size protection, calculate SCCR or arc flash, or prove code compliance.