



**MACALLISTER POWER SYSTEMS**  
EVENT SERVICES • BACKUP POWER & UTILITY SOLUTIONS

# FORMULAS

## POWER

To Obtain	Single Phase*	Three Phase*
Kilowatts	$\frac{v \times I \times PF}{1000}$	$\frac{1.732 \times v \times I \times PF}{1000}$
kVA	$\frac{v \times I}{1000}$	$\frac{1.732 \times v \times I}{1000}$
Horsepower required when generator kW is known (if generator efficiency is unknown, use 0.93)	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$
kW input when motor hp is known (if motor efficiency is unknown, use 0.85 x hp)	$\frac{hp \times 0.746}{\text{Efficiency (Motor)}}$	$\frac{hp \times 0.746}{\text{Efficiency (Motor)}}$
Amperes when motor hp known	$\frac{hp \times 746}{v \times PF \times \text{Efficiency}}$	$\frac{hp \times 746}{1.732 \times v \times PF \times \text{Efficiency}}$
Amperes when kW known	$\frac{kW \times 1000}{v \times PF}$	$\frac{kW \times 1000}{1.732 \times v \times PF}$
Amperes when kVA known	$\frac{kVA \times 1000}{v}$	$\frac{kVA \times 1000}{1.732 \times v}$

\* Alternating Current

## TEMPERATURE CONTROL

Tons (Fluid)	= $\frac{GPM \times 500 \text{ sp.heat} \times \text{sp.gravity} \times \Delta T}{12,000}$
Tons (Air)	= $\frac{cfm \times 4.45 \times \Delta h \text{ (enthalpy)}}{12,000}$
kW Heat (Structure)	= $\frac{\text{Surface area} \times u \text{ factor} \times \Delta T}{3413}$
cfm	= $\frac{\text{Volume} \times \# \text{ of required air changes}}{60}$
kW Heat	= $\frac{cfm \times 1.08 \times \Delta T}{3413}$
kW (Temperature)	= $\frac{\text{Btu / hr}}{3413}$
Tons (Refrigeration)	= $\frac{\text{Btu / hr}}{12,000}$
Tons (Nominal)*	= $\frac{\text{Tons (effective) or Btu /hr of work}}{\text{deration factor}}$

\* =Below 45 degree Low Temperature Applications

## RENTAL POWER UNIT DIMENSIONS

Size	Voltage	Fuel Capacity	GPH	Trailer	Dimensions	Weight
20kW	480/208	46	1.9	Y	78" x 32"	2,350
30kW	480/208	56	2.08	Y	96" x 44"	3,600
60kW	480/208	149	4.27	Y	144" x 44"	4,900
75kW	480/208	149	5.3	Y	114" x 44"	5,000
100kW	480/208	190	7.2	Y	124" x 74"	5,800
125kW	480/208	223	9	Y	165" x 45"	10,000
200kW	480/208	306	14	Y	158" x 44"	14,000
300kW	480/208	470	20	Y	200" x 61"	17,000
400kW	480/208	470	25	Y	200" x 61"	17,000

Above listed units have the ability to provide simultaneous voltage Units equipped customer convenience panels, Fuel Capacity in Gallons, GPH rated at 100%, Units can be skid mounted

500kW	480/208	660	30	Y	20' x 8'	32,000
600kW	480/208	660	40	Y	40' x 8'	37,000
750kW	480/208	660	55	Y	40' x 8'	39,500

Above listed units can be used at either 208 or 480 VAC

1000kW	480	1250	70	Y	40' x 8'	49,000
1250kW	480	1250	95	Y	40' x 8'	50,000
1500kW	480	1250	95	Y	40' x 8'	59,000
1750kW	480	1250	127	Y	40' x 8'	64,000
2000kW	480	1250	138	Y	40' x 8'	89,000

MacAllister Power Systems offers a complete line of cable, distribution panels, transformers, and fuel tanks

\* All information above is approximate. For specific information, please contact your MacAllister Power Systems Representative.

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**EMERGENCY RENTAL**

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