

## Electrical Service

### GENERAL

 **Warning**

All wiring must conform to local, state and national codes.

### VOLTAGE

The maximum allowable voltage variation is  $\pm 10\%$  of the rated voltage at ice machine start-up (when the electrical load is highest).

 **Warning**

The ice machine must be grounded in accordance with national and local electrical codes.

### FUSE/CIRCUIT BREAKER

A separate fuse/circuit breaker must be provided for each ice machine. Circuit breakers must be H.A.C.R. rated (does not apply in Canada).

### MINIMUM CIRCUIT AMPACITY

The minimum circuit ampacity is used to help select the wire size of the electrical supply. (Minimum circuit ampacity is not the ice machine's running amp load.)

The wire size (or gauge) is also dependent upon location, materials used, length of run, etc., so it must be determined by a qualified electrician.

### GROUND FAULT CIRCUIT INTERRUPTER

Ground Fault Circuit Interrupter (GFCI/GFI) protection is a system that shuts down the electric circuit (opens it) when it senses an unexpected loss of power, presumably to ground. Manitowoc Ice, Inc. does not recommend the use of a GFCI/GFI circuit protection with our equipment. If code requires the use of a GFCI/GFI then you must follow the local code. The circuit must be dedicated, sized properly and there must be a panel GFCI/GFI breaker. We do not recommend GFCI/GFI outlets as they are known for more intermittent nuisance trips than panel breakers.

## Q320/370/420 Ice Machines

Ice Machine	Voltage Phase Cycle	Air-Cooled		Water Cooled	
		Maximum Fuse/Circuit Breaker	Minimum Circuit Amps	Maximum Fuse/Circuit Breaker	Minimum Circuit Amps
Q320	115/1/60	15	11.2	15	10.5
	208-230/1/60	15	4.8	15	4.2
	230/1/50	15	5.2	15	4.7
Q370	115/1/60	20	12.9	20	12.2
	208-230/1/60	15	6.2	15	5.8
	230/1/50	15	6.2	15	5.8
Q420	115/1/60	20	12.3	20	11.4
	208-230/1/60	15	7.8	15	7.4
	230/1/50	15	6.3	15	5.9

## Q280 - Q1000 Ice Machines

Ice Machine	Voltage Phase Cycle	Air-Cooled		Water Cooled		Remote	
		Maximum Fuse/Circuit Breaker	Minimum Circuit Amps	Maximum Fuse/Circuit Breaker	Minimum Circuit Amps	Maximum Fuse/Circuit Breaker	Minimum Circuit Amps
Q280	115/1/60	20	12.6	20	11.7	N/A	N/A
	208-230/1/60	15	5.7	15	5.2	N/A	N/A
	230/1/50	15	5.7	15	5.2	N/A	N/A
Q450	115/1/60	20	12.8	20	11.9	20	13.6
	208-230/1/60	15	7.8	15	7.4	N/A	N/A
	230/1/50	15	6.1	15	5.7	N/A	N/A
Q600	208-230/1/60	15	9.2	15	8.7	15	9.3
	230/1/50	15	9.2	15	8.8	15	9.4
Q800	208-230/1/60	20	12.1	20	11.4	20	11.9
	208-230/3/60	15	8.9	15	8.2	15	8.9
	230/1/50	20	12.0	20	10.6	20	11.2
Q1000	208-230/1/60	20	14.3	20	13.2	20	14.2
	208-230/3/60	15	9.8	15	8.8	15	9.9
	230/1/50	20	15.6	20	14.2	20	14.6
Q1300	208-230/1/60	30	19.5	30	18.1	30	19.8
	208-230/3/60	20	13.1	20	11.6	20	12.7
	230/1/50	30	15.7	30	14.3	30	14.7
	380-415/3/50	N/A	N/A	N/A	N/A	15	7.3
Q1600	208-230/1/60	N/A	N/A	30	17.2	30	18.2
	208-230/3/60	N/A	N/A	20	11.0	20	12.0
	230/1/50	N/A	N/A	N/A	N/A	N/A	N/A
	380-415/3/50	N/A	N/A	N/A	N/A	N/A	N/A
Q1800 Before SN 110603336	208-230/1/60	40	28.1	40	26.7	40	26.9
	208-230/3/60	20	15.5	20	14.1	20	13.9
	230/1/50	40	23.3	40	21.9	40	22.2
	380-415/3/50	N/A	N/A	N/A	N/A	15	9.1
Q1800 After SN 110603336	208-230/1/60	N/A	N/A	40	22.1	40	23.1
	208-230/3/60	N/A	N/A	20	12.0	20	13.0
	230/1/50	N/A	N/A	40	20.5	40	21.5

Self-Contained Electrical Wiring Connections

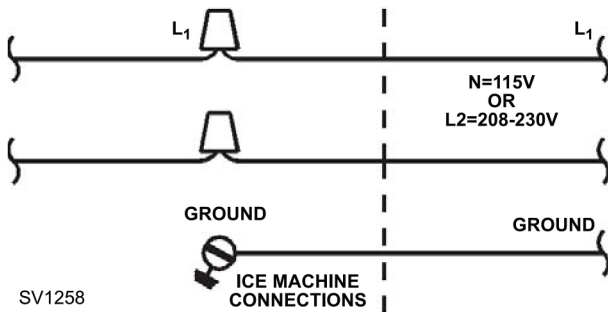
**Warning**

These diagrams are not intended to show proper wire routing, wire sizing, disconnects, etc., only the correct wire connections.

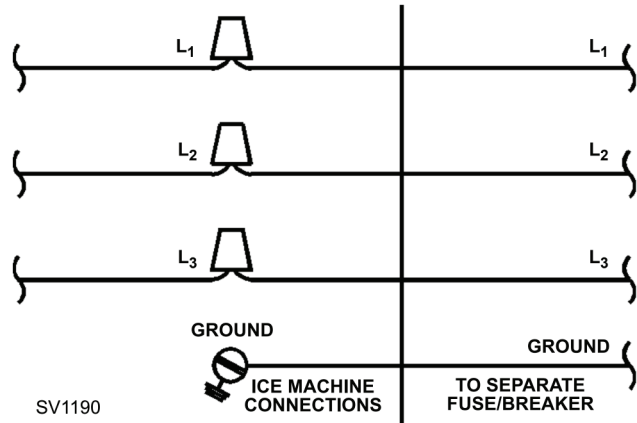
All electrical work, including wire routing and grounding, must conform to local, state and national electrical codes.

Though wire nuts are shown in the drawings, the ice machine field wiring connections may use either wire nuts or screw terminals.

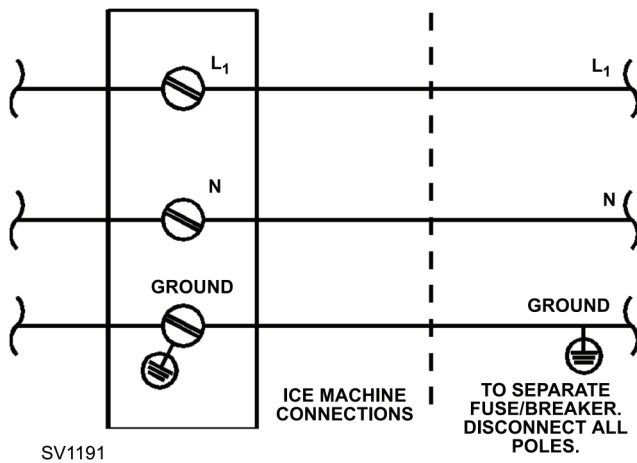
**SELF CONTAINED ICE MACHINE  
115/1/60 OR 208-230/1/60**



**SELF CONTAINED ICE MACHINE  
208-230/3/60**




**SELF CONTAINED ICE MACHINE  
230/1/50**



**For United Kingdom Only**

As the colours of the wires in the mains lead of the appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

- The wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth ground symbol  or coloured green or green and yellow.
- The wire coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
- The wire coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Remote Electrical Wiring Connections

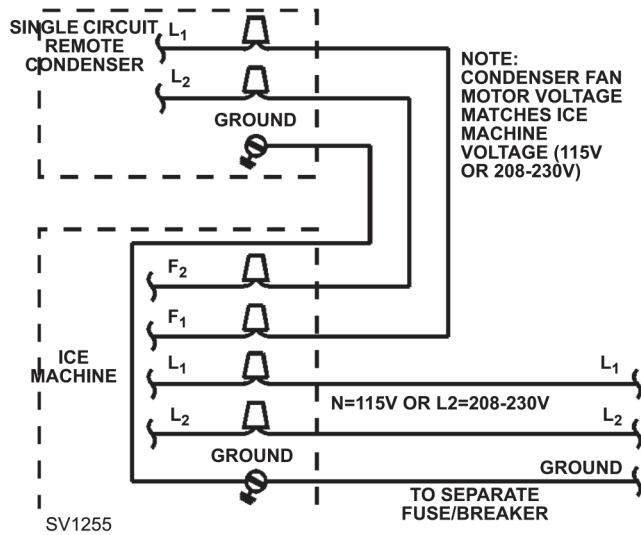
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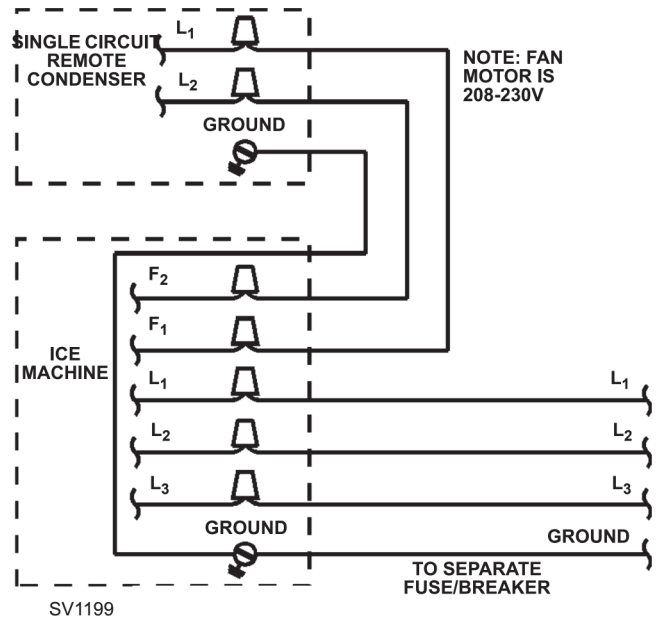
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**REMOTE ICE MACHINE WITH SINGLE CIRCUIT MODEL CONDENSER 115/1/60 OR 208-230/1/60**



**REMOTE ICE MACHINE WITH SINGLE CIRCUIT MODEL CONDENSER 208-230/3/60 OR 380-415/3/50**



**REMOTE ICE MACHINE WITH SINGLE CIRCUIT MODEL CONDENSER 230/1/50**

