



Benchmark Thermal’s Motor Heater Specification Sheet

Heater’s Intended Use

Benchmark Thermal’s Motor Heaters are intended for the use in electrical motors to prevent moisture condensation that will cause swift failure of the electrical winding in the motor. Moisture Condensation in the motor occurs when humid air comes in contact with the cool metal of the motor. Motor Heaters warm the metal electrical winding, not allowing the moisture to condense.

Heater Construction

- Manufactured using fiberglass reinforced silicone rubber.
- Heating element is a wire-strung circuit or etched foil circuit.
- Power leads are 22 AWG Teflon insulated at 24 inches in length.

Electrical Properties

Chart below shows electrical properties of the Motor Heaters:

Motor Heater Electrical Properties				
			Amperes Draw	
Width(inches)	Length(inches)	Wattage (watts)	120-volt model	240-volt model
1	5	25	0.21	0.1
1	10	50	0.42	0.21
1	15	75	0.63	0.31
1	20	100	0.83	0.42
1	25	125	1.04	0.52
2	15	150	1.25	0.63
2	20	200	1.67	0.84
2	25	250	2.08	1.04

All Motor Heaters have a watt density of 5 watt per square inch.

Resistance of the heaters has a $\pm 10\%$ of the nominal resistance value. Nominal resistance is given per the following equation:

$$\text{Resistance (nominal)} = (\text{volts}) / (\text{amperes})$$

Amperes are given in the table above for each of the given heaters.



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Thermal Properties

- Motor Heaters can operate in a wide temperature range up to 400 °F.
- They are capable of operating in cold temperature environments down to -70 °F.
- Potential of temperature rise up to 275 °F.
(Temperature rise of the heater will depend on the size of the heat sink that the heater is mounted to and the atmospheric conditions that the heater is operating in. In most cases the temperature rise will not be this high.)

Heater Temperature Control

Motor heaters are not equipped with a temperature controller. If the heater is being used in a temperature sensitive environment, a thermal device should be used (i.e. thermostat) to ensure that the temperature is controlled.

Heater Grounding

Motor heaters do not have a grounding plane in the heater. Electrical motor should be grounded to prevent electrical build-up.

Part Numbering

Benchmark Thermal's part numbering of the Motor Heater is shown in the following example:

EFH – 105 - 120
 1 2

1. Represents the size of the heater. First digit is the width of the heater and the second and third digits is the length of the heater...
2. Represents the operating voltage of the unit.

Electrical Recognitions

Benchmark Thermal's Motor Heaters are recognized through both UL & CSA.

UL file #: E119144

CSA file #: LR84035-1