



User Instructions for Kapton Heaters

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Issue 4

GENERAL INFORMATION

Kapton® is a polyimide material that has high dielectric strength, allowing for a very thin heater construction. It also has excellent tensile strength, tear resistance, cut-through resistance and dimensional stability which produce an extremely strong, flexible and lightweight heater.

INSTALLATION

⚠ WARNING

IMPROPER INSTALLATION

- Ensure the heater is installed by qualified personnel.
- Ensure the heater is not exposed to damaging or flammable chemicals, acids, alkalis, oils, fluids, liquids or other substances.
- Ensure the heater is not cut, pierced, folded or otherwise mishandled.
- Ensure proper measures are taken to control heater temperature if heater is insulated.
- Ensure the heater is attached to an appropriate heat sink and not energized free standing in air.
- Ensure that the heater's exposed thermostat sensor is not damaged.
- Do not overlap heaters.
- Do not repair a damaged heater.

Failure to comply with these instructions could result in death or serious injury.

CAUTION

HEATER DAMAGE

- Ensure that the entire heater is in contact with the mounting surface (heat sink) with no air packets trapped underneath.

Failure to comply with these instructions could result in product damage.

1. Attach the heater to an appropriate heat sink (may be flat or curved) by one of the following means. Ensure that the heat sink is clean and oil/grease-free:
 - Mechanical clamping.
 - Factory-applied pressure sensitive adhesive (PSA).
 - A thin layer of room temperature vulcanizing (RTV) silicone.
2. Install a method of temperature control (such as a thermostat, thermocouple and temperature controller, or a variable voltage transformer).
3. Place the temperature sensor close enough to the heater to sense the heater temperature.

OPERATION

⚠ WARNING

IMPROPER OPERATION

- Ensure the heater is used by qualified personnel.
- Ensure the heater does not exceed:
 - Specified or rated voltage.
 - Maximum operating and surface temperature ratings.
- Ensure the heater is not exposed to damaging or flammable chemicals, acids, alkalis, oils, fluids, liquids or other substances.
- Ensure the heater is not immersed in liquids.
- Ensure the heater is not cut, pierced, folded or otherwise mishandled.
- Ensure proper safety controls are installed for unattended operating heaters.
- Ensure that the heater's exposed thermostat sensor is not damaged.
- Do not repair a damaged heater.

Failure to comply with these instructions could result in death or serious injury.

Table 1. General Specifications

Characteristic	Value
Material and construction	etched foil elements covered on both sides with Kapton film insulation, bonded with Teflon® FEP
Voltage	28V, 115V
Power densities available (28V, 115V)	2.5W/in. ² , 5W/in. ² , 10W/in. ²
Operating temperature range	-328°F to 392°F
Exposure temperature range	-328°F to 392°F
Resistance tolerance	±10%
Thickness	0.007in. (except at lead exit)
Leads: gage insulation length	varies according to heater wattage and voltage Teflon® insulated wires 12.0in. min.
Approvals	none
High-potential dielectric testing (115V)	1250V
Serviceable parts	none

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