

## Options

### Cartridge Heater Internal Sensor and Control Options

#### Type TF Thermal Fuses

Available on HDC, HDM, and LDC cartridge heaters 1/2" diameter and larger

Thermal fuses can be built into cartridge heaters to act as a high limit for the heater in applications where the temperature must be limited to avoid dangerous situations. When the trigger point is reached, the thermal fuse will open, cutting the electrical current to the cartridge heater. Once the thermal fuse opens, it cannot be reset. Many different trigger temperatures are available.

#### Type TS Thermostat

Available on HDC, HDM, and LDC cartridge heaters 5/8" diameter or larger

Cartridge heaters with built-in thermostats are very efficient and economical for heating and controlling temperatures. Available with NPT or special type mounting fittings, they provide a self-contained heater mainly recommended for immersion applications. They can also be used as over-temperature safety devices. The thermostats are factory preset for the trip temperature; therefore, prototyping and testing is required to determine the exact fixed setpoint. Maximum temperature—302°F (150°C). Maximum Amps—8@120 Volts.

A minimum 2-1/2" cold section is required to house the thermostat. Consult Tempco with your requirements.

#### Type TM Thermistor

#### Type RD RTD Temperature Sensors

Available on HDC, HDM, and LDC cartridge heaters

Tempco has the ability to custom design cartridge heaters with built-in temperature sensors such as thermistors and RTDs. For specific applications that have a limited or single set point range, thermistors or RTDs in conjunction with simple electronic controllers can be an economical choice.

**NOTE:** For thermocouples see page 2-58.

Type TS



### Cartridge Heater Option — Inspection Services and Test Reports

#### Standard Electrical Tests and Optional Test Reports

1. Resistance test — measures ohms at room temperature.
2. IR (insulation resistance) test — measures the insulation resistance to the flow of current. Standard test is done at 500VDC.
3. Hipot (high potential) test — a high voltage is applied between a product's current carrying conductors and its metallic enclosure to verify that the insulation is sufficient to protect the operator from electrical shock.
4. Leakage current test — measures the current that flows from any conductive part to ground.
5. Heaters can be serialized and test reports can be sent with each shipment if required. Contact Tempco with your requirements.

#### Optional Die Penetrant Test

This non-destructive testing can detect imperfections in weld joints. For critical applications, each individual heater's weld joints by end cap and fittings can be tested. Certified test reports will be sent with each shipment. Consult Tempco for details.

#### Optional Hydrostatic Pressure Test

Cartridge heaters with attached pipe fittings can be pressure tested to your specifications at Tempco. Our in-house testing capabilities can ensure that your products meet your exact specifications. Contact Tempco with your requirements.

### LDA and HAC Forced Air In-Line Process Cartridge Heaters

TEMPCO manufactures a variety of Air Process Cartridge Heaters. They can be standard units or designed to the customer's specifications. The following diameter sizes are available: 3/8", 1/2", 5/8" and 3/4".

These diameters can be adapted with various types of fittings and made into any practical length.

See Section 11, Pages 11-74 through 11-77  
for complete details

