

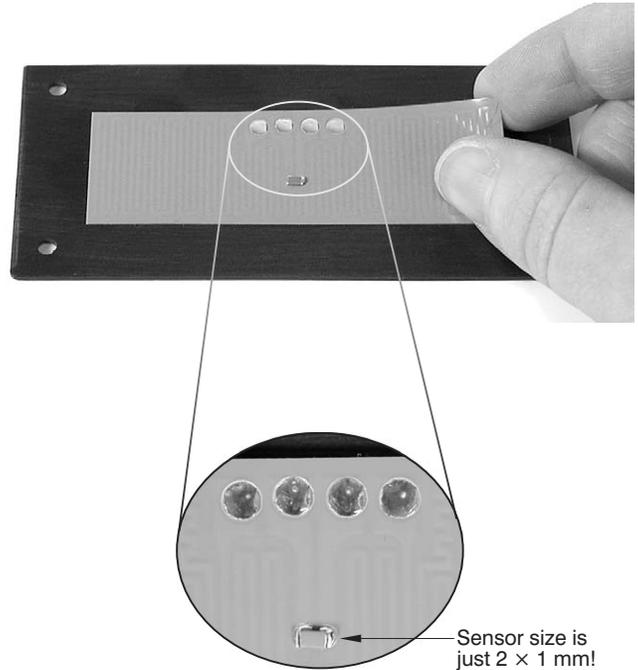
Thermofoil™ Heater/Sensors

- ◆ Etched-foil heating element provides fast warm-up
- ◆ Integrated sensor element for control or monitoring
- ◆ Standard off-the-shelf designs to fit most applications

Integrated heater/sensors are the ideal solution for many temperature control problems. Combining an etched foil heating element with an accurate RTD or thermistor sensor in a single package provides a reliable system with reduced parts count and simplified installation.

Minco standard heater/sensors have the sensor element located in a non-heating area to measure the heat sink temperature – not the heating element temperature. The result is a more accurate reading and better control. Precise location of the sensor ensures consistent readings every time.

These standard models can be used for prototype testing or a short production series. For larger volume OEM applications a custom design can include wire or flex circuit leads, heater size and resistance to your exact requirements, or additional components such as thermal cut-offs.



Specifications

Temperature range: -200 to 150°C (-32 to 100°C with PSA adhesive backing).

Material: Kapton polyimide film/acrylic, 0.002/0.001" (0.05/0.03 mm).

Resistance tolerance: ±10% (±0.5 Ω minimum).

Sensor element: 100 Ω or 1000 Ω platinum RTD, R(100°C)/R(0°C)=1.385 per IEC 751, or 50k Ω NTC thermistor. Etched sensor leads add up to 0.4 Ω resistance to measured value.

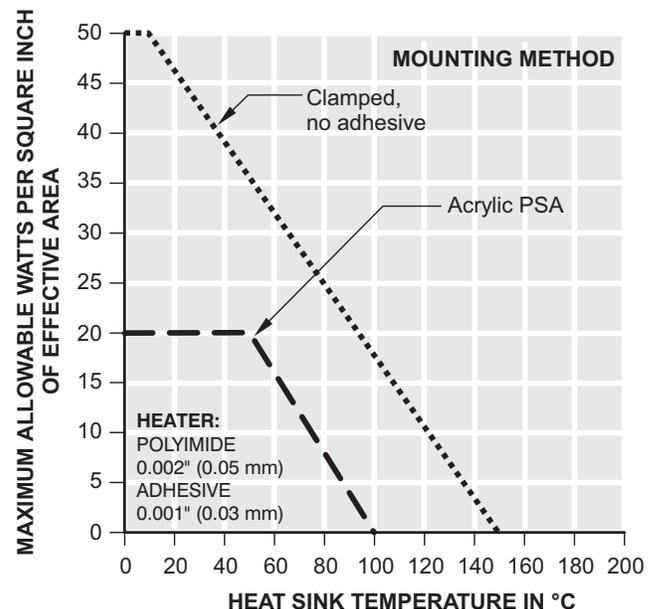
Minimum bend radius: 0.030" (0.8 mm) except in sensor area 0.5" (12.7 mm).

Electrical connections: Solder pads for two sensor and two heater connections. Four AWG 26 PTFE insulated wires 12" (305 mm) long with stripped and tinned ends are included. Attach an additional wire to one of the sensor connection points for 3-wire sensor systems.

Sensor time response: Less than 0.1 second in water at 3ft/sec (sensor only); less than 0.5 second system time.

Sensor stability: Drift less than 0.1°C/year in normal use.

Maximum allowable watt density:



Thermofoil heater/sensors

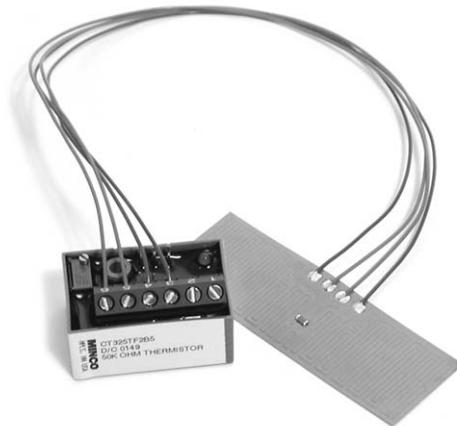
| Size (inches) | | Size (mm) | | Resistance in ohms ±10% (±0.5 Ω minimum) | | | | Effective area (in ²) | Model number |
|---------------|------|---------------|-------|---|------|------|------|-----------------------------------|--------------|
| W | L | W | L | | | | | | |
| 1.00 | 2.00 | 25.4 | 50.8 | 71.4 | 32.0 | 23.2 | 16.9 | 1.35 | ASI5900 |
| 1.00 | 3.00 | 25.4 | 76.2 | 43.9 | 19.7 | 14.3 | 10.4 | 2.23 | ASI5901 |
| 3.00 | 3.00 | 76.2 | 76.2 | 21.2 | 9.50 | 6.90 | 5.00 | 7.99 | ASI5902 |
| 4.00 | 4.00 | 101.6 | 101.6 | 21.1 | 9.50 | 6.80 | 5.00 | 14.7 | ASI5903 |
| 5.00 | 5.00 | 127.0 | 127.0 | 21.4 | 9.60 | 6.90 | 5.00 | 23.5 | ASI5904 |
| 1.50 diameter | | 38.1 diameter | | 73.1 | 32.8 | 23.7 | 17.3 | 1.25 | ASI5905 |
| 3.00 diameter | | 76.2 diameter | | 21.1 | 9.50 | 6.80 | 5.00 | 6.93 | ASI5906 |

How to order

| | |
|--------------------------------------|---|
| ASI5900 | Model number from table above |
| R71.4 | Heater resistance from table above |
| PD | Sensor element: PD = Platinum 100 Ω ±0.12% at 0°C PF = Platinum 1000 Ω ±0.12% at 0°C TF = NTC Thermistor 50k Ω ±1% at 25°C S0 = No sensor element installed Note: Etched sensor leads add up to 0.4 Ω resistance to measured value. |
| A | Backing options: A = No adhesive B = Pressure sensitive adhesive (PSA) |
| ASI5900R71.4PDA ← Sample part number | |

CT325 miniature DC temperature controller

The CT325 temperature controller is the perfect companion to Minco's heater/sensors. The miniature size (only 1.0 × 1.0 × 1.5 inches) allows it to fit into almost any application. Rugged design and simple operation make it easy to use, and the economical cost lets you specify a complete system for less than the cost of a typical temperature controller. Request Bulletin CT325 for complete specifications.



MINCO
ISO 9001

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