

Press Fit Temperature Sensor

Melt and cavity temperature can be critical to many parts, especially those made with semi-crystalline materials and requiring tight dimensional tolerances. Thermodynamic stability in injection molding with crystalline material is an extremely critical variable. Achieving proper temperatures after a cycle break can require numerous cycles. Monitoring the temperature inside the cavity itself helps troubleshoot processing problems.

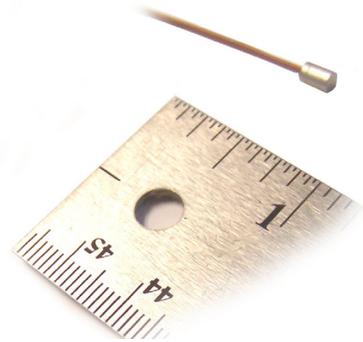
RJG developed the Press Fit Cavity Temperature Sensor as a tool to analyze temperature variation inside the actual mold cavity. These sensors work in conjunction with RJG's eDART™ Process Control System to assist molders in diagnosing processing problems relating to temperature issues. The temperature of both the melt and mold make up two of the four "Plastics Variables" that determine how a part is formed.

The press-fit cavity temperature sensor is simple to install by drilling a small hole for the wire, and a flat bottomed pocket with the tolerance necessary to press fit the device in from the cavity face.

Locate the sensors near areas where short shots, dimensional errors or warp are likely to occur. Placing sensors in different areas of the part can show problems with non-uniform cooling. The best use of temperature sensors for control is with valve gates, particularly when there is little or no pressure at the point you wish to actuate a gate. For example you can open a gate when the flow front just passes the gate by placing a temperature sensor there. A sudden rise in temperature indicates the arrival of the flow front.

Features

- 3 mm in diameter and 4.5 mm long
- Type K thermocouple
- Sensors can withstand cavity pressures up to 30,000 psi
- Teflon wire coating allows the sensors to work in molds up to 400 °F
- 1 ms response time to see a 1-2°C temperature rise
- Reduces installation costs by over 50%
- Made of hardened steel
- Sensor head can be textured or contoured



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