Glass Sealing

Temperature Measurement of Glass through Flame for Sealing Applications

Q
Question

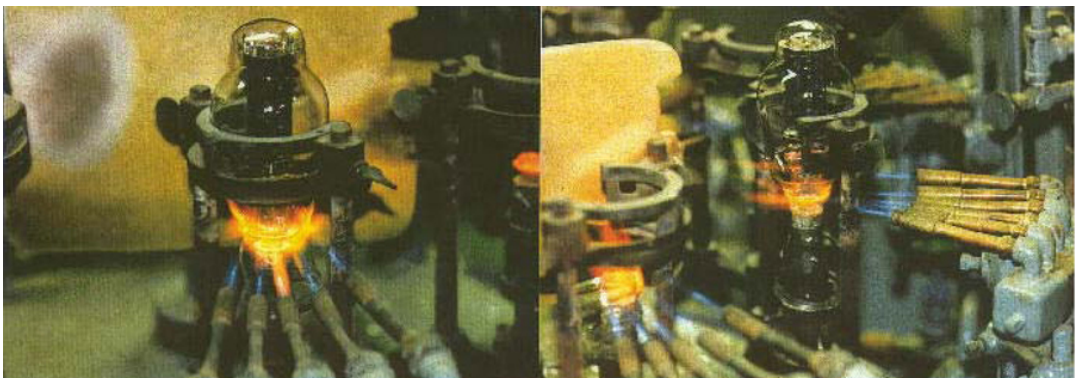
How can the correct bonding temperature be ensured while heating glass with a flame?

A
Answer

Situation Analysis

Accurate temperature measurement is critical to a stable process when sealing lamps, bulbs, and tubes. Because of the small area that needs to be temperature controlled, placement of the sensor head, as well as optical resolution, must be carefully considered. In addition, the sensor must be able to detect the surface temperature of glass through smoke and flame.

- Fast cycle times
- High ambient temperatures
- Rotating fixtures
- Small (1mm) measurement area



Raytek®
Fluke Process Instruments

A
Answer

Solution and Improvements

Raytek Marathon Series sensors are designed for high performance in demanding applications. In this case, two possible solutions exist. Depending on installation specifics, either the MMG5 or FR product solves the problem. With the FR Ratio (2-color) sensors, the accuracy and repeatability are not affected by smoke and dust that may be present during this process and thus overcome the environmental conditions that are a part of the glass sealing process. High optical resolution, close focus optics and high temperature fiber-optic cables allow for flexibility in sensor head placement. High signal attenuation is present, so lowering the attenuation shutdown value is required. The historic approach to this problem is the use of a 5-micron spectral-response detector that measures only the surface temperature of the glass and not that of the flame.

Raytek Product

RAYMMG5LSF1V or
RAYFR1ACF103H

Accessories

- Adjustable Mounting Bracket
- ThermoJacket
- High-temperature wire
- Protective windows
- Air Purge Collar
- Sight Tube

- DataTemp Multidrop software

Benefits

- Increased Throughput
- Savings on Fuel Costs
- Process Stability

References

- Osram Sylvania, Inc.
- GE Lighting
- Federal Mogul

For customized solutions to your process, please contact:
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