Smart Sensors

“Smart IR Temperature Sensors”

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What is a smart sensor?

- “Smart sensors answer precision sensing needs”
- Smart sensors are information sensors. These integrate sensors and circuits to process information obtained from the environment without a significant human interference.
Smallest smart sensor

- Today’s new smart IR sensors represent a union of two rapidly evolving sciences that combine IR temperature measurement with high-speed digital technologies usually associated with the computer.

- Photo 1. The new Raytek Digital MI is the smallest smart sensor available today. All settings and monitoring can be controlled from a remote computer in safety away from the production area.

- picture

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How IR temperature sensor works?

- IR spectrum extends from 0.7 - 1000 microns, only 0.7-14 micron is used for temperature measurement.
- Matter, picture

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Digital electronics support fast, smart sensors

- With a few modifications in the ir sensors (analog type), they gave linearised outputs.
- Now ir sensors are smart transducers with fast response time
Software adds functionality

- Smart IR temperature sensors with two-way digital communications are now available, as are software programs that feature remote sensor setup, diagnostics, and calibration.
- Pic
Application making a space heater smart sensor

- By taking advantage of the comparators, you can easily design a simple, low-cost control for either radiant or forced-air heaters.
- Figure 1. The IR thermometer mounted on the heater face will average all the IR energy the sensor “sees” in its field of view. This capability allows the heater to react to the actual temperature of the area being heated rather than the temperature at the heater itself.
- pic
Benefits of smart IR temperature sensors

- The IR sensor has the advantage of seeing what’s in front of it
- The sensor adds a safety feature too
THE END