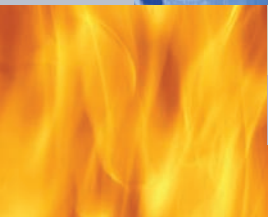# CI, MI, GP

Noncontact Temperature Measurement for Industrial Applications

Infrared thermometers measure the energy radiated from an object, without touching it. This measurement technique is important in applications where contact would damage or alter the surface, such as a sheet of plastic film, or contaminate the product, such as food processing.

Unlike contact sensors, there is no delay while the infrared thermometer reaches the correct temperature. This makes it ideal for measuring moving or discrete processes. The result is fast, accurate noncontact temperature measurement and tighter control of your process.

Highlights: GP Sensor

- Laser sighting available (GPS head)

- Compact 1/8 DIN monitor with large four-digit display

- Adjustable emissivity and T-ambient compensation

- Adjustable dual setpoints and deadband for alarm outputs

- Standard and close focus optics available

- Accessories for cooling and air purging

Highlights: CI Sensor

- IP 65 stainless steel electronics housing

- Ambient temperatures to 70°C without cooling

- Accessories for cooling and air purging

- Powered by 12 – 24 VDC at 20 mA

- 350 ms (95%) response time

- Two models cover temperature ranges from 0 to 500°C

Compact. Accurate. Affordable.

Bring the advantages of a complete infrared temperature measurement system to your process.

Raytek Compact Series temperature monitoring systems make infrared temperature measurement an economical alternative. The systems are easy-to-install and to integrate into your existing process control system.

GP - Sensor with Laser Sighting

The GP Series is a versatile, two-piece temperature monitoring system which combines a compact, value-priced monitor with an infrared sensing head. The GP system can be used with a choice of sensing heads allowing you to configure an infrared temperature monitoring system that best matches your application. If the sensor is located near the measurement target, or the target is large, a sensing head such as the MI or CI is appropriate. If the measurement spot is small, or the sensor must be located further from the target, the GPS with its 50:1 optics is required.

And the attractive pricing means you can install these sensors at multiple points along your process for enhanced monitoring coverage.

The laser sighted GPS sensing head provides 50:1 optics and 1% accuracy.

CI - The Thermocouple Alternative

When a low-maintenance solution to thermocouples is required, consider the CI. The CI is a rugged, integrated unit with the same output impedance as a thermocouple. It functions accurately without offset errors when used in conjunction with the thermocouple break protection circuitry in most controllers, displays, and transmitters. Combine the CI with the GP monitor to add a display and power supply.

The CI has a rugged stainless steel housing to ensure continuous, long-term performance, even in hostile environments.

The compact CI is an integrated, stainless steel sensor that makes a low-cost thermocouple replacement.

MI - The Versatile Sensor

The Raytek MI is a two-piece infrared temperature measurement system with miniature sensing head and separate electronics. The sensor is small enough to be installed just about anywhere, yet it performs as well as much larger systems. The MI electronics include a host of signal processing features which you won't normally find in systems in this price range.

Designed for a wide range of applications where the target temperature is in the -40 to 600°C range, the sensor is housed in a rugged stainless steel enclosure to ensure long term performance, even in harsh industrial environments with ambient temperatures up to 180°C without cooling. Cooling accessories not only add installation costs, they can leak and contaminate products, or condensation produced by cooling can obscure the sensors's field of view and interfere with measurement accuracy.

Although the MI unit is small in size, it still has the features you need, with 1% accuracy, up to 22:1 optics, user selectable output signals, and fast response time.

The MI unit's miniature size and low cost make it ideal for installation at multiple points along your process.

Process Software

More features are available with the RS232 or optional RS485 communications and the DataTemp MultiDrop Software including remote control and monitoring of all sensor variables, a 5 V alarm output signal, an 8-position "recipe" table that can be easily interfaced to an external control system, and even external inputs for analog emissivity adjustment or reflected energy compensation.

Plot temperature values of multiple sensors simultaneously. High and low alarms are shown, making it easy to identify an out-of-range condition.

MI	GP Monitor with GP sensor	GP Monitor with CI	CI
Temperature Range			
-40 to 600°C	-18 to 538°C	0 to 500°C	0 to 500°C
Accuracy			
1%	1%	2%	2%
Signal Processing			
MAX MIN AVG	MAX MIN AVG	MAX MIN AVG	NO
Optics			
22:1 10:1 2:1	50:1 35:1	4:1	4:1
Power Supply			
12-24 VDC	110-230 VAC	110-230 VAC	12-24 VDC
Outputs			
0/4-20 mA, mV J, K* RS232 or RS485, Alarm	4-20 mA, J, K, R, S* 2 Alarms	4-20 mA, J, K, R, S* 2 Alarms	J, K* or 0 - 5V

* Thermocouple type
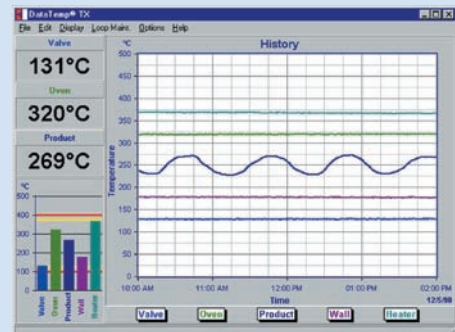
The GP Monitor

The 1/8 DIN GP Monitor provides a compact, easy-to-use interface and display for process instruments. The GP Monitor accepts inputs from any 0-5 V sensor, 4-20 mA sensor or thermocouple type J, K, E, N, R, S, T. For signal processing requirements, the monitor provides Peak Hold, Valley Hold, and Averaging and a user adjustable offset. Best of all, there are no internal jumpers used for setup, as all monitor functions are configured via the front panel. The GP Monitor accepts 110-220 VAC power and provides a 24 VDC/50 mA excitation voltage, capable of providing loop power to external sensors.

The 1/8 DIN GP Monitor provides a compact display for a wide variety of Raytek sensing heads.

Monitoring edge temperature and drying uniformity for paper production results in higher yields and reduced downtime.

From paint curing to thermoforming, noncontact temperature measurement provides consistent product quality in the automobile industry.

Raytek Service Ensures Long Use

With over forty years experience, Raytek knows infrared temperature measurement. Our application specialists are located around the world to help answer your technical questions. Each Compact product includes a two year warranty. In addition, maintenance, training, calibration, and other customized services are available to ensure that you receive the maximum benefits from your Raytek infrared, noncontact thermometer. For more information on Raytek infrared temperature measurement solutions, contact your Raytek application specialist today.

Raytek Automation Products: Noncontact Temperature Measurement for Industrial Applications

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