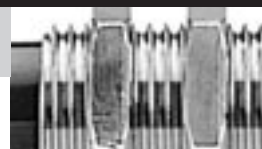


CI



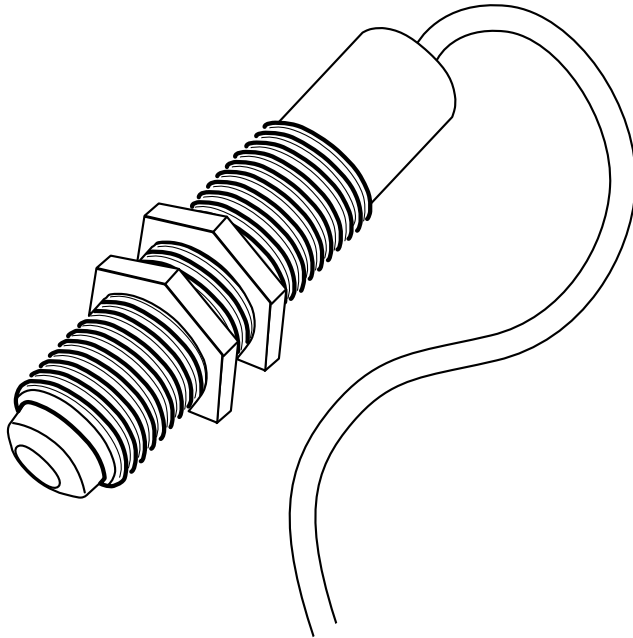
Noncontact Temperature Measurement for Industrial Applications



The Compact Series™ CI™

Integrated electronics enables simple installation and provides thermocouple or millivolt signals

Measurement Specifications



Model No.—Output Signal	Accuracy Range
CI1A—J-type thermocouple	$\pm 2\%$ or $\pm 3^\circ\text{C}$ ($\pm 6^\circ\text{F}$), whichever is greater, between 0 to 115°C (32 to 240°F);
CI2A—K-type thermocouple	$\pm 5\%$ or $\pm 6^\circ\text{C}$ ($\pm 10^\circ\text{F}$), whichever is greater, between 115 to 225°C (240 to 440°F);
CI3A— $10\text{mV}/^\circ\text{C}^*$	$>\pm 5\%$ between 225 to 350°C (440 to 662°F)
CI1B—J-type thermocouple	$\pm 2\%$ or $\pm 3^\circ\text{C}$ ($\pm 6^\circ\text{F}$), whichever is greater, between 100 to 500°C (212 to 932°F)
CI2B—K-type thermocouple	$\pm 5\%$ or $\pm 6^\circ\text{C}$ ($\pm 10^\circ\text{F}$), whichever is greater, between 30 to 100°C (86 to 212°F)
CI3B— $10\text{mV}/^\circ\text{C}^*$	
*CI3 Output scaled 0-5V (0- 500°C)	
Spectral Response	7 to 18 microns
System Repeatability	$\pm 1\%$ of measured value or $\pm 1^\circ\text{C}$ (2°F), whichever is greater
Temperature Resolution	$<0.5^\circ\text{C}$ or 1°F
Response Time (95%)	350 mSec
Emissivity	Fixed at 0.95

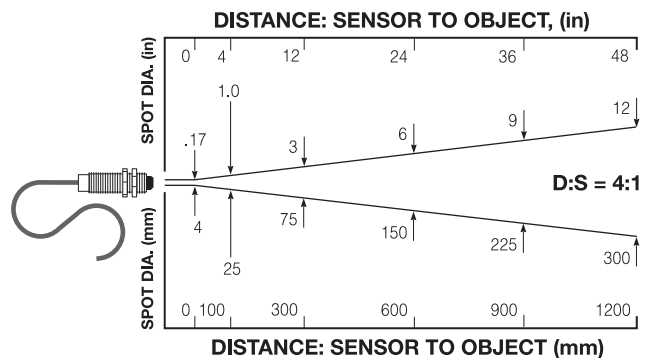
The Raytek CI provides the advantages of infrared temperature measurement in a compact, low cost, integrated sensor. Designed for easy integration into a standard 4-wire system, the CI can easily replace traditional contact probes with a J-type or K-type thermocouple output, or with a 0-5 volt output if your application is susceptible to noise or requires a longer cable run.

The CI is designed to measure target temperatures ranging from 0 to 500°C (32 to 932°F). The CI's onboard electronics are protected by a rugged IP 65 (NEMA-4) stainless steel housing, allowing the sensor to function in ambient temperatures to 70°C (160°F) without cooling. With water cooling, the CI can withstand ambient temperatures to 260°C (500°F).

Because the CI has the same 50 Ohm 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.

Compact. Easy to install. Affordable. The Raytek CI is ideal for both OEM and end-user applications.

Nominal Optical Specifications



D:S is the optical resolution expressed as a ratio of the distance to the resolution spot divided by the diameter of the spot.

Optical resolution for the CI is 4:1. Nominal spot size based on 90% energy.

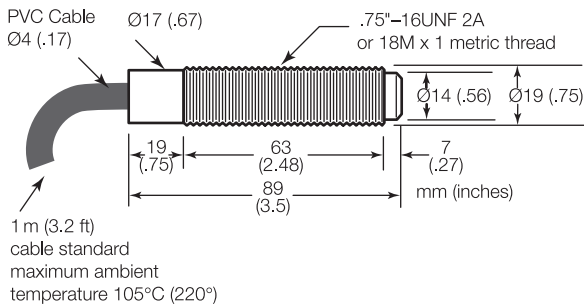
Electrical Specifications

Outputs	User-selectable thermocouple output (model specific, either J or K) or voltage output 10 mV/°C
Cable Length	1 m (3.2 ft) standard, longer cables optional
Output Impedance	50 ohms
Minimum Load Impedance	50K ohms
Power Supply	12–24 VDC ($\leq 2.5\%$ ripple) @ 20 mA

Sensor Specifications

Environmental Rating	IP 65 (NEMA-4)
Ambient Temperature Range	0 to 70°C (32 to 160°F)
With air cooling	0 to 90°C (32 to 200°F)
With water cooling	0 to 260°C (32 to 500°F)
Storage Temperature	-30 to 85°C (-22 to 185°F)
Relative Humidity	10 to 95%, non-condensing
Shock	IEC 68-2-27 (MIL STD 810D) 50 g's, 11 mSec, any axis
Vibration	IEC 68-2-27 (MIL STD 810D) 3 g's, any axis, 11–200 Hz
Weight	130 g (4.5 oz)

Sensor Dimensions



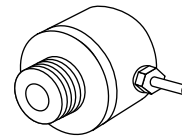
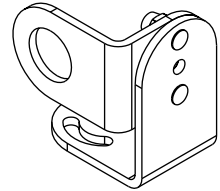
CI Highlights

- Type J or K, or 0-5 V output
- Two models cover temperature ranges from 0 to 500°C (32 to 932°F)
- IP 65 (NEMA-4) stainless steel electronics housing
- 4:1 optics at 90% energy
- 350 mSec (95%) response time
- Powered by 12–24 VDC at 20 mA
- Accessories for cooling and air purging

Accessories Options

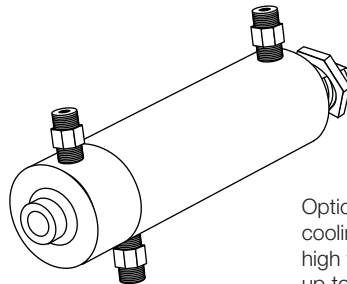
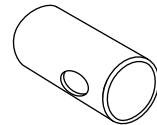
Each CI sensor includes two mounting nuts, 1 m (3.2 ft.) of cable, and an operator's manual. Longer cables up to 15 m (50 ft.) maximum are available and must be specified at the time of order.

Adjustable or fixed mounting bracket for sensing head (XXXCIADJB or XXXCIACFB)



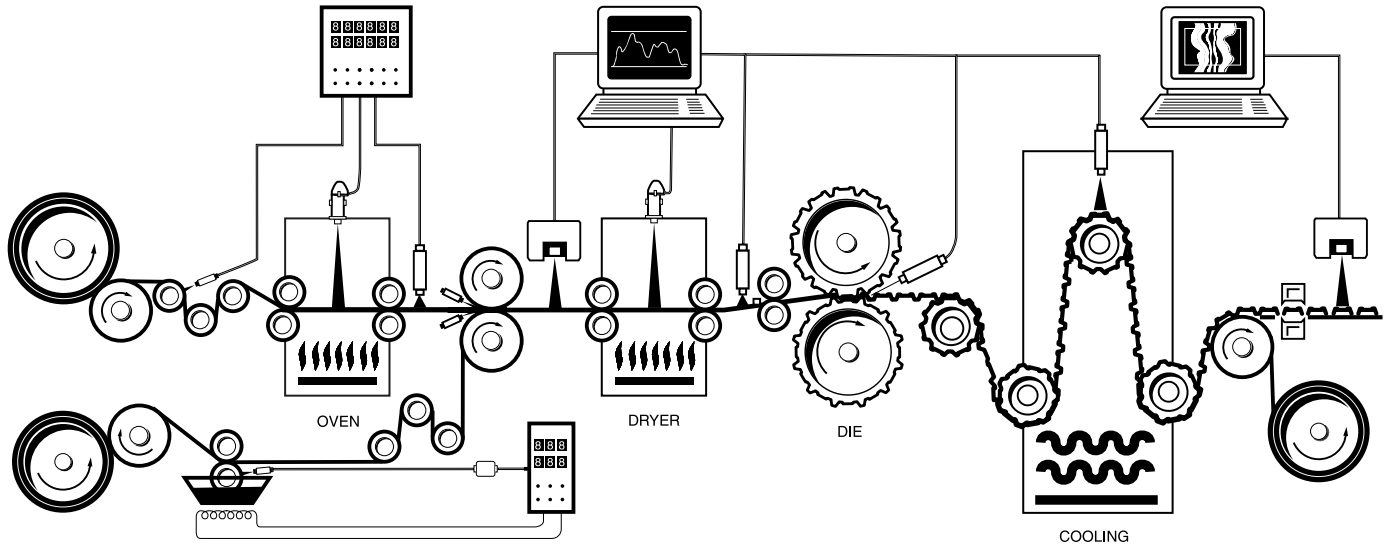
Air purge jacket to keep lens or right angle mirror clean (XXXCIACAP or XXXCIACAPM for metric version)

Right angle mirror to ease installation into tight locations (XXXCIACRA)



Optional water/air cooling/purging system for high temperature environments up to 260°C (500°F)

Optional cooling jacket must be specified at the time of order.



Industries That Use Raytek Thermometers

- Plastics
- Primary and Secondary Metal
- Printing, Paper, and Converting
- Primary and Secondary Glass
- Tempering, Annealing, Forming, Sealing, and Bending
- Semiconductors
- Petrochemical
- Utilities and Electrical Inspection
- Automotive
- Asphalt, Cement, and Construction Materials
- Textiles
- Food Processing

Raytek sensors measure the temperature of hot, moving, or inaccessible materials safely, accurately, and with repeatability you can count on. As part of a process control loop, a Raytek sensor can help you improve and maintain product quality and provide the data needed to optimize throughput and minimize downtime.

www.raytek.com
for up-to-the-minute features

Raytek Automation Products: Noncontact Temperature Measurement for Industrial ApplicationsSM

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