

Raytek CI

Noncontact Infrared Temperature Sensor



Product Description

The 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 type J or type K 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, and the sensor can 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 CI is ideal for both OEM and end-user applications.

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

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Models and Temperature Ranges

Model Number	Temperature	Accuracy Range
CI1—J-type Thermocouple	Range A 0 to 350°C (32 to 662°F)	±2% or ±3°C (±6°F), whichever is greater, btw 0 to 115°C (32 to 240°F);
CI2—K-type Thermocouple		±5% or ±6°C (±10°F), whichever is greater, btw 115 to 225°C (240 to 440°F); >±5% btw 225 to 350°C (440 to 662°F);
CI3—10 mV/°C Linear Voltage Scaled 0-5 V (0-500°C)	Range B 30 to 500°C (86 to 932°F)	±2% or ±3°C (±6°F), whichever is greater, btw 100 to 500°C (212 to 932°F); ±5% or ±6°C (±10°F), whichever is greater, btw 30 to 100°C (86 to 212°F)

Measurement Specifications

Spectral Response	7 to 18 microns
System Repeatability	±1% of measured value or ±1°C (2°F), whichever is greater
Temperature Resolution	<0.5°C or 1°F
Response Time (95%)	350 mSec
Emissivity	Fixed at 0.95

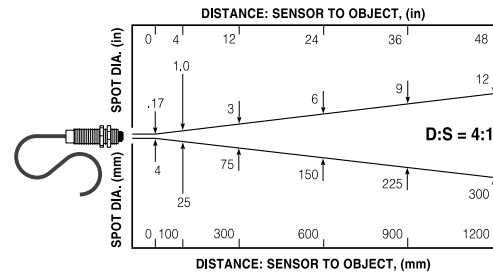
Electrical Specifications

Outputs:	User-selectable Thermocouple output (model specific, either J or K) or Voltage output 10 mV/°C
Cable Length	0.9 m (3 ft) standard, longer cables optional
Output Impedance	50 ohms
Minimum Load Impedance	50K ohms
Power Supply	12-24 VDC (≤2.5% ripple) @ 20 mA

General 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
Dimensions	19 mm L x 87 mm D (3.4 L in x 0.75 in D)
Weight	130 g (4.5 oz)

Nominal Optical Specifications

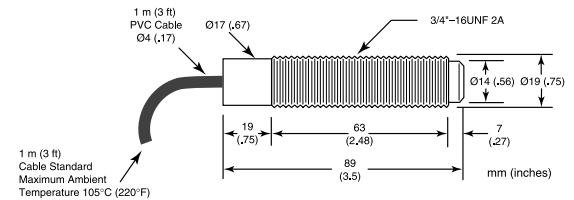


D:S is the optical resolution expressed as a ratio of the distance to the resolution spot divided by the diameter of the spot.

Optical resolution for the CI is 4:1.

Nominal spot size based on 90% energy

General Dimensions



Accessories / Options*

Sensing head comes with a 0.9 m (3 ft) cable, two mounting nuts, and an operator's manual

- GP monitor provides display, and 4-20 mA output
- Air-/water-cooled housing*
- High temperature cables (standard with air-/water-cooled housing)
- Adjustable or fixed mounting bracket
- Air purge collar
- Longer cables 3 m, (10 ft)*

*Must be specified at time of order

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