

Raytek Infrared Temperature Sensors

CI Series Compact Infrared Sensor



- Type J or K, or 0-5 V Output
- IP 65 (NEMA-4) Stainless Steel Electronics Housing
- 4:1 Optics at 90% Energy
- Powered by 12-24VDC at 20mA

Replaces traditional probes with J-type or K-type thermocouple output.

Functions accurately when used in conjunction with the thermocouple break protection circuitry in most controllers, displays, and transmitters.

SPECIFICATIONS

Spectral Response	7 to 18 μm
Accuracy	$\pm 2\%$ or $\pm 3^\circ\text{C}$
Resolution	0.5°C
Response Time	350ms (95%)
Emissivity	fixed at 0.95
D:S Ratio	4:1
Cable	1m (3.3') standard
Output Impedance (J/K)	50 Ω
Minimum Load (mV)	50k Ω
Power	12-24VDC $\pm 5\%$, 20mA
Ambient Temperature:	
Sensing head	0 to 70°C
With air cooling	up to 90°C
With water cooling	up to 260°C
Relative Humidity	10 to 95%, non-condensing
Size	0.75" dia. x 3.4" long

ORDERING INFORMATION

RA/CI-1A	IR Temperature Sensor, J T/C, 0-155 $^\circ\text{C}$
RA/CI-2A	IR Temperature Sensor, K T/C, 0-155 $^\circ\text{C}$
RA/CI-3A	IR Temperature Sensor, 10mV/ $^\circ\text{C}$ Linear Voltage, 0-155 $^\circ\text{C}$
RA/CI-1B	IR Temperature Sensor, J T/C, 100-500 $^\circ\text{C}$
RA/CI-2B	IR Temperature Sensor, K T/C, 100-500 $^\circ\text{C}$
RA/CI-3B	IR Temperature Sensor, 10 mV/ $^\circ\text{C}$ Linear Voltage, 100-500 $^\circ\text{C}$

OPTIONS / ACCESSORIES

-10L	3m (10') Cable, 105 $^\circ\text{C}$
-W	Air/water cooled jacket with lens purge & 1m (3.3') 260 $^\circ\text{C}$ cable
RA/CIADJB	Adjustable mounting bracket
RA/CIACFB	Fixed mounting bracket
RA/CIACRA	Right angle mirror
RA/CIAP	Air purge collar
RA/CI1CON	Thermocouple cable extension connector kit for CI1
RA/CI2CON	Thermocouple cable extension connector kit for CI2
RA/CIACCB10H	3 Meter (10', 260 $^\circ\text{C}$) extension cable
RA/CIACCB50H	15 Meter (50', 260 $^\circ\text{C}$) extension cable

MI Series Miniature Infrared Sensors

- Adjustable Emissivity, Peak/Valley Hold & Averaging
- 1% Accuracy from -40 to 600°C (-40 to 1112°F)
- 10:1 Optics
- Sensing Head Accessible for Cleaning
- RS-232 Communications (RS-485 optional)



Two-piece infrared temperature measurement system with a miniature sensing head and die-cast electronics housing.

SPECIFICATIONS

Resolution	0.3°C or 0.5°F
Temperature Range	-40°C to 600°C (-40°F to 1112°F) -25°C to 600°C for JT/C Output
Outputs	4-20mA, 0-20mA, 0-5V (scaleable) J or K thermocouple 10 mV/ $^\circ\text{C}$ head ambient signal
Output Impedance (T/C)	20 Ω
Minimum Load Impedance (mV)	100k Ω
Maximum Loop Impedance	(mA output) 500 Ω with 24VDC power supply
Power	11-26VDC, 100mA
Environmental Rating	IP65 (NEMA-4)
Ambient Temperature:	
MID Sensing Head	0 to 85°C (32 to 185°F)
MIC Sensing Head	0 to 125°C (32 to 257°F)
MIH Sensing Head	0 to 180°C (32 to 356°F)
With air cooling	up to 200°C
Electronics housing	0 to 65°C
Temperature Coefficient	MID 0.15K/K or 0.15%/K MIC, MIH 0.05K/K or 0.05%/K
Size	Sensor 0.55" dia x 1.1" long Housing 3.2" x 2.4" x 1.0"
Spectral Response:	8 to 14 μm
System Accuracy:	(18-28 $^\circ\text{C}$ ambient)
LT	$\pm 1\%$ or $\pm 1^\circ\text{C}$
Thermocouple output	$\pm 1\%$ or $\pm 2.5^\circ\text{C}$
Repeatability	$\pm 0.5\%$ or $\pm 0.5^\circ\text{C}$
System Response Time	150ms (95%)
Emissivity Transmission	0.100 to 1.100 digitally adjustable

ORDERING INFORMATION

RA/MID-10LT	Univ. Output, 10:1 optics, 1m cable, 85 $^\circ\text{C}$ max sensor ambient
RA/MIC-10LT	Univ. Output, 10:1 optics, 1m cable, 125 $^\circ\text{C}$ max sensor ambient
RA/MIH-10LT	Univ. Output, 10:1 optics, 1m cable, 185 $^\circ\text{C}$ max sensor ambient

OPTIONS/ACCESSORIES

- 4	RS485 Multidrop Communication
- CB3	3m (10') Cable
- CB8	8m (26') Cable
- CB15	15m (49') Cable
- V	Display window in electronic housing
RA/XXXMIACFB	Fixed Mounting Bracket
RA/XXXMIACAB	Adjustable Mounting Bracket
RA/XXXMIACAJ	Air Purge Collar
RA/XXXMIACCJ	Air Cooling and Purge System (includes 2.8' insulated air hose)
RA/XXXCIDCPS	Power Supply, 24VDC