CI
Noncontact Infrared Temperature Sensor

- Type J or K, or 0-5V 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
- Powered by 12–24VDC at 20mA
- Accessories for Cooling and Air Purging

**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 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’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).

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

**Dimensions:**

**Nominal Optical Specifications:**

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

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

**Noncontact Infrared Temperature Sensor (cont’d.)**

**Environmental Rating**: IP 65 (NEMA-4)

**Ambient Temp Range**
- 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)

### Electrical Specifications:

- **Cable Length**: 3 m (9.8 ft) standard, longer cables optional
- **Output Impedance**: 50 ohms
- **Min Load Impedance**: 50K ohms
- **Power Supply**: 12–24VDC (≤ 2.5% ripple) @ 20mA

### 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

### Sensor Specifications:

<table>
<thead>
<tr>
<th>Model No. – Output Signal</th>
<th>Accuracy Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI1A—J-type thermocouple</td>
<td>±2% or ±3°C (±6°F), whichever is greater, between 0 to 115°C (32 to 240°F)</td>
</tr>
<tr>
<td>CI2A—K-type thermocouple</td>
<td>±5% or ±6°C (±10°F), whichever is greater, between 115 to 225° (240 to 440°F);</td>
</tr>
<tr>
<td>CI3A—10mV/°C*</td>
<td>&gt;±5% between 225 to 350°C (440 to 662°F)</td>
</tr>
<tr>
<td>CI1B—J-type thermocouple</td>
<td>±2% or ±3°C (±6°F), whichever is greater, between 100 to 500°C (212 to 932°F)</td>
</tr>
<tr>
<td>CI2B—K-type thermocouple</td>
<td>±5% or ±6°C (±10°F), whichever is greater, between 30 to 100°C (86 to 212°F)</td>
</tr>
<tr>
<td>CI3B—10mV/°C*</td>
<td></td>
</tr>
</tbody>
</table>

*Output scaled 0-5V (0-500°C)*

### Ordering Information:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Range</th>
<th>PCN</th>
<th>Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>CI-1-A-10L*</td>
<td>J TC out, 10ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>337690</td>
<td>S</td>
</tr>
<tr>
<td>CI-2-A-10L*</td>
<td>K TC out, 10ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>337703</td>
<td>NS</td>
</tr>
<tr>
<td>CI-3-A-10L*</td>
<td>0-5Vdc out, 10ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>337711</td>
<td>NS</td>
</tr>
<tr>
<td>CI-1-B-10H*</td>
<td>J TC out, 10ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>337720</td>
<td>S</td>
</tr>
<tr>
<td>CI-2-B-10H*</td>
<td>K TC out, 10ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>337738</td>
<td>S</td>
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<tr>
<td>CI-3-B-10H*</td>
<td>0-5Vdc out, 10ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>337746</td>
<td>NS</td>
</tr>
<tr>
<td>CI-1-A-50L*</td>
<td>J TC out, 50ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>CI-2-A-50L*</td>
<td>K TC out, 50ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>NS</td>
<td></td>
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<tr>
<td>CI-3-A-50L*</td>
<td>0-5Vdc out, 50ft cable</td>
<td>32 to 240°F (0 to 155°C)</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>CI-1-B-50H*</td>
<td>J TC out, 50ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>NS</td>
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</tr>
<tr>
<td>CI-2-B-50H*</td>
<td>K TC out, 50ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>CI-3-B-50H*</td>
<td>0-5Vdc out, 50ft cable</td>
<td>212 to 932°F (100 to 500°C)</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>XXXCIACMN</td>
<td>Mounting Nuts</td>
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<td>337762</td>
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<td>XXXCIACFB</td>
<td>Fixed Mounting Bracket</td>
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<td>XXXCIAJFB</td>
<td>Adjustable Mounting Bracket</td>
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<td>337789</td>
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<tr>
<td>XXXCJDPS</td>
<td>Air Purge Collar</td>
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<td></td>
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<tr>
<td>XXXCIDPS</td>
<td>24Vdc Power Supply</td>
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<td>337797</td>
<td>S</td>
</tr>
</tbody>
</table>

* If water cooling is required, it must be specified at time of order, Add W to Model Number. Ex: CI-1A-10LW
MID
Two-Piece Infrared Temperature Sensor

- Small NEMA 4 Sensing Head Fits Where Other Sensors Can’t
- Ambient Operating Range to 85°C (185°F) Without Cooling
- 5-Digit Backlit LCD User Interface for Adjustable Output Types, Adjustable Emissivity, Temperature Value, Peak Hold, Valley Hold and Average Functions
- 1% Accuracy
- Range -40 to 1,200°C (-40 to 2190°F)
- Choice of 2:1 or 10:1 Optics
- Special Models for Glass and Metals Processing Applications
- Accessories for Cooling and Air Purging
- Remote Electronics Box

Description

The MID 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. And the MID electronics include a host of signal processing features which you won’t normally find in systems in this price range, including Emissivity, Peak Hold, Valley Hold, and Averaging function, all of which are adjustable on the 5-digit LCD user interface.

Designed for a wide range of applications where the target temperature is in the -40 to 1,200°C (-40 to 2,190°F) range, the sensor is housed in a rugged NEMA 4 stainless steel enclosure to ensure long term performance, even in harsh industrial environments with ambient temperatures up to 85°C (185°F) without cooling.

Although the MID is small in size, it still has the features you need, with 1% accuracy, a choice of spectral responses, 2:1 or 10:1 optics and user selectable output signals. The MID’s response time is as fast or faster than more costly systems.

The MID’s miniature size and low cost make it ideal for installation at multiple points along your process. Accurate. Easy to install. Affordable. With the MID, precision infrared temperature measurement is now an economical alternative.

Sensor Dimensions

Accessories/Options

Each standard MID package includes a sensing head, one mounting nut, 3 m (9.8 ft) of cable, die-cast housing with premounted electronics, and an operator’s manual. Longer cables up to 15m (50ft.) maximum are available and must be specified at time of order.

Adjustable or fixed mounting bracket for sensing head (XXMIAACAB or XXMIAFCB)

Air purge jacket to keep lens clean (XXMIAAJ)

Chromalox®