Installation Guidelines—
IR5500 Open Path Gas Detector

1 Location

Factors to consider when selecting locations:
• It is recommended to install the detector on a solid foundation not prone to future ground settling.
• The system should be accessible for occasional response checks.
• The Receiver and Source should be mounted so that the display is visible to aid in alignment.
• Install in low traffic areas—the line of sight between the Source and Receiver should be free from obstructions such as:
  - Parked vehicles or moveable machinery
  - Frequent operator traffic or animal crossings
• Although the Source and Receiver are designed to resist radio frequency interferences, they should not be mounted close
to radio sources, near strong magnetic fields or around concentrated sources of heat (i.e. boiler, engine).
• There should be a 3 ft clearance around both the Source and Receiver free from piping, the ground etc.
• Highly reflective surfaces can interfere with units placed in close enough proximity.
• Although the IR5500 is FM 6325 approved, which ensures vibration tolerance, it is recommended to mount away from sources
  of excessive vibration and away from high voltage/high current power lines.
• Avoid process areas that release vented gas or steam.

2 Power & Wiring Requirements

Power Requirements

The IR5500 Open Path Gas Detector is powered by 24 VDC ± 10% operating.

Cable Requirements

Customers must derive the distance from power supply to device based on cable specifications, expected maximum ambient
temperature and cable temperature rise, estimated connection losses, allowances for error in distance measurement, and other
variables particular to the customer installation.

Sample distances from power supply to Source and Receiver:

<table>
<thead>
<tr>
<th>Terminal Type</th>
<th>Push</th>
<th>Screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX WIRE SIZE</td>
<td>16 AWG</td>
<td>14 AWG</td>
</tr>
<tr>
<td></td>
<td>1.5 mm²</td>
<td>2.5 mm²</td>
</tr>
<tr>
<td>TYPICAL RESISTANCE</td>
<td>5.00 ohms/1,000 ft</td>
<td>3.00 ohms/1,000 ft</td>
</tr>
<tr>
<td></td>
<td>16.0 ohms/1,000 ft</td>
<td>9.00 ohms/1,000 ft</td>
</tr>
<tr>
<td>SOURCE</td>
<td>625 ft</td>
<td>1,040 ft</td>
</tr>
<tr>
<td></td>
<td>195 m</td>
<td>347 m</td>
</tr>
<tr>
<td>RECEIVER</td>
<td>800 ft</td>
<td>1,330 ft</td>
</tr>
<tr>
<td></td>
<td>250 m</td>
<td>444 m</td>
</tr>
</tbody>
</table>

Sample distances from Receiver to analog output load:

<table>
<thead>
<tr>
<th>AWG</th>
<th>Ohms/1,000 ft</th>
<th>Feet</th>
<th>Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>#20</td>
<td>11</td>
<td>4550</td>
<td>1,390</td>
</tr>
<tr>
<td>#18</td>
<td>7</td>
<td>7140</td>
<td>2,180</td>
</tr>
<tr>
<td>#16</td>
<td>5</td>
<td>10,000</td>
<td>3,050</td>
</tr>
</tbody>
</table>

*In-Rush refers to the instantaneous input current drawn by the device when first turned on

Failure to use shielded cable or poor earth grounding will result in poor product performance.
Environmental Considerations

- Heaters are installed on the windows to prevent condensation—the heater is not designed to keep ice off the lenses.

Start Up & Warm Up Procedure

- After the initial application of power and warm-up, verify that all signal outputs to and from devices and modules are within specification.
- Initial alignment, alignment checking and testing should be performed.

Alignment

Once the units are installed, it is important to have proper alignment between the Source and Receiver.

1. Measure the distance between the Source and Receiver. This will be required during alignment.
2. It is recommended that two people are involved in aligning the unit to speed up the process.
   One person should be at the Source and one person should be at the Receiver.

For additional guidance on alignment, please refer to the Alignment Guideline document.