Installation Guidelines—
IR5500 Open Path Gas Detector

General Monitors

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.

If the units do not receive adequate power, this can affect unit performance and have the potential to cause erroneous behavior.

Electrical Recommendations	
INPUT POWER	20–36 VDC range
SOURCE	24 VDC @ 12 W (max.)
RECEIVER (W/RELAYS)	24 VDC @ 10 W (max.)

	Source	Receiver
OPERATING	0.64 A maximum at 20 VDC input voltage	0.50 A maximum at 20 VDC input voltage
IN-RUSH*	1.66 A maximum at 36 VDC	1.3 A maximum at 36 VDC

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

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:

Terminal Type	Push	Screw
MAX WIRE SIZE	16 AWG 1.5 mm^2	14 AWG 2.5 mm^2
TYPICAL RESISTANCE	5.00 ohms/1,000 ft 16.0 ohms/1,000 m	3.00 ohms/1,000 ft 9.00 ohms/1,000 m
SOURCE	625 ft 195 m	1,040 ft 347 m
RECEIVER	800 ft 250 m	1330 ft 444 m

Sample distances from Receiver to analog output load:

AWG	Ohms/1,000 ft	Feet	Meters
#20	11	4550	1,390
#18	7	7140	2,180
#16	5	10,000	3,050

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

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3 Environmental Considerations

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

4 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.

Did you know...

MSA has an experienced and dedicated service team that can be hired to commission new installations to ensure optimum performance of your gas detection system. Contact us at *field.service@msasafety.com* for more information.

5 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.

Figure 1—Correct Placement

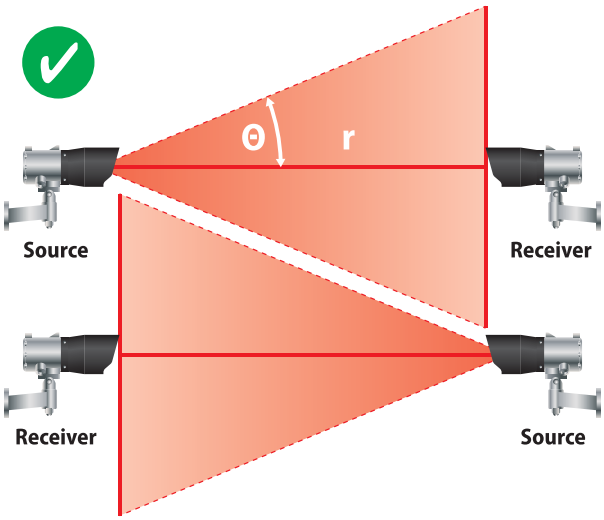
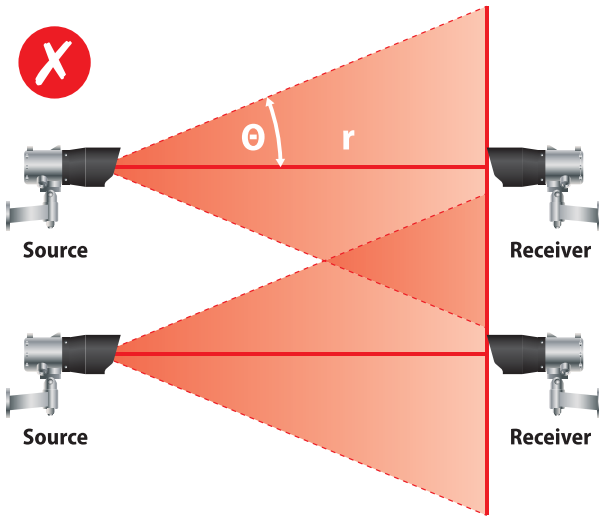


Figure 2—Incorrect Placement



Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products. Specifications subject to change without notice.

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