



# MODEL IR-642

## CARBON DIOXIDE SENSOR

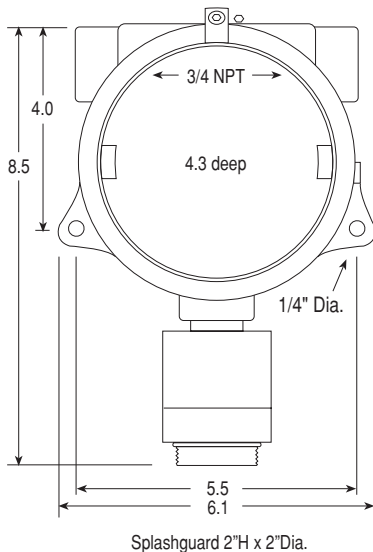
ISO 9001:2008  
Certified

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### SPECIFICATIONS

- Sensor Type**  
Non-dispersive Infrared Optical (NDIR)
- Measurement Range**  
0-10%/0-25%/0-50%/0-100% by volume
- Accuracy/Repeatability**  
±5% full scale
- Response/Clearing Time**  
T50 <15 seconds  
T90 <40 seconds
- Zero Drift**  
<0.05% per year
- Operating Temperature Range**  
-40°F to +167°F; -40°C to +75°C
- Operating Humidity Range**  
0-99% RH non-condensing
- Outputs**  
Linear 4-20 mA DC  
RS-485 Modbus™  
3 Relays (alarm 1, alarm 2, & fault)  
Contacts rated 5 amps
- Input Voltage**  
22.5-28 VDC
- Power Consumption**  
<3 watts @ 24 VDC
- Electrical Classification**  
Explosion proof  
Class I, Division 1, Groups B, C, D
- Safety Approvals**  
CSA/NRTL (US OSHA Certified)
- Sensor Life/Warranty**  
Sensor: 5 year warranty pro-rated  
Transmitter: 2 year warranty

### DIMENSIONS



Non-dispersive  
Infrared Optical

**MicroSafe™**  
Intelligent Sensor

### DESCRIPTION

Detcon Model IR-642 sensors are non-intrusive "Smart" sensors designed to detect and monitor Carbon Dioxide. Available ranges of detection are 0-10%, 0-25%, 0-50%, and 0-100% by volume. The sensor assembly consists of a miniature infrared optical sensor in a stainless steel housing that includes a splashguard with integral cal port, a plug-in control transmitter circuit, a base connector board and an explosion proof enclosure.



### FEATURES

- ▶ CSA-NRTL Approved: Class I, Division 1, Groups B, C, & D
- ▶ Compatible with PLCs, SCADA, DCS, via 4-20 mA, and/or RS-485, and/or alarm relays
- ▶ Sensor status and parameters accessible via RS-485 (Modbus™)
- ▶ Menu programmable relays standard (two alarms plus fault)
- ▶ Simple menu driven calibration - takes less than 3 minutes
- ▶ Backlit LCD and LED indicators for FAULT and CAL status
- ▶ Unique miniature field-replaceable optical sensor
- ▶ Plug-in field-replaceable transmitter
- ▶ Low power consumption
- ▶ 5-year expected sensor life

### ORDER GUIDE

- PN 966-424520-\_\_\_ Model IR-642 in Aluminum Junction Box
- PN 966-42542B-\_\_\_ Model IR-642-316SS in Stainless Steel Junction Box

Complete the part number by choosing range  
010 = 10%  
025 = 25%  
050 = 50%  
100 = 100%

[www.detcon.com](http://www.detcon.com)