



3M™ Detcon™ Model IR-640

Non-dispersive Infrared Optical Carbon Dioxide Sensor

Description

Detcon Model IR-640 sensors are non-intrusive “Smart” sensors designed to detect and monitor Carbon Dioxide. Available ranges of detection are 0-0.3%, 0-1%, 0-3%, and 0-5% by volume. The sensor assembly consists of a miniature infrared optical sensor in a stainless steel housing that includes a splashguard with integral calport, a plug-in control transmitter circuit, a base connector board and an explosion proof enclosure.

Features

- cCSAus 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



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Carbon Dioxide Sensor

System Specifications

Sensor Type

Non-dispersive Infrared Optical (NDIR)

Measurement Range

0 - 0.3%/0 - 1%/0 - 3%/0 - 5% by volume

Accuracy/Repeatability

±5% full scale

Response/Clearing Time

T50 <15 seconds

T90 <40 seconds

Zero Drift

<0.05% per year

Ambient Operating Temperature Range

-40°C to +40°C; -40°F to 104°F (CANADA)

-25°C to +40°C; -13°F to 104°F (USA)

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

Ingress Protection

NEMA 4X, IP66

Safety Approvals

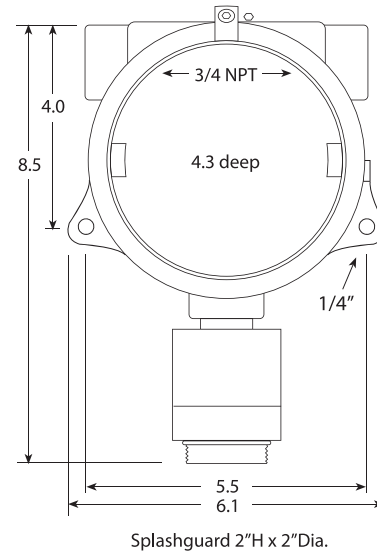
cCSAus

Sensor Life/Warranty

Sensor: 5 year warranty pro-rated

Transmitter: 2 year warranty

Dimensions



Order Guide

PN 966-404520-__ Model IR-640 in Aluminum Junction Box

PN 966-40542B-__ Model IR-640-316SS in Stainless Steel Junction Box

Complete the part number by choosing range

005 = 5%

003 = 3%

001 = 1%

OX3 = 0.3%

