



## Model CX-IR

Infrared LEL Gas Detectors



### Description

Detcon Model CX-IR gas detection sensors are easily and economically deployable in both permanent and temporary installations. These low power sensor assemblies utilize infrared technology for combustible hydrocarbons. Model CX-IR sensors are equipped with standard analog 4-20mA, and Modbus™ RTU RS-485 outputs and can be used with Detcon's SmartWireless® Site Sentinel CX/CXT Controllers as well as other Detcon control systems. Relay and battery options available.

Model DM-IR Series sensors feature non-intrusive operator interface and comprehensive fault diagnostics. The sensor is packaged in an electro-polished 316 stainless steel housing fitted with a 3/4 inch NPT thread. The plug-in, field replaceable sensor cell features large surface area gold-plated pins that reduce the effects of corrosion in harsh industrial environments. Signal conditioning electronics are completely encapsulated in the sensor housing adding a high level of durability. This innovative design virtually eliminates sensor failure due to water ingress, corrosion, vibration, and transient spikes. The packaging is XP-intrinsically safe. A primary feature of the Model CX-IR is embedded intuitive software that simplifies operator interface by guiding the user through routine calibration, configuration, and fault diagnostic functions using a built-in alpha/numeric display.

Each sensor is shipped with a splash guard with integral calibration port. Detcon's IR combustible hydrocarbon sensors have a long shelf life and are supported by an industry-leading warranty.

### Features

- Low Power Infrared Gas Detection Sensors
- Built-in Display
- Class I, Div. 1, Groups C, & D
- Non-intrusive Magnetic Interface
- Built-in Diagnostics
- Fully Encapsulated Electronics
- Electropolished 316SS Construction
- Quick Thread Release (for sensor replacement)
- Relays optional
- Battery power options

### Applications

- Oil and Gas Drilling Rigs
- Work-over and pulling units
- Oil and Gas Production
- Turn-a-rounds in Refining and Petrochemical Plants
- One year run time on a single battery charge



# Model CX-IR

## Infrared LEL Gas Detectors

### System Specifications

#### Sensor Type

Continuous diffusion/adsorption  
Non-dispersive Infrared Optical (NDIR) - Combustible Gas  
Sub-miniature plug-in field replaceable

#### Sensor Life

5 years typical

#### Measurement Range

0-100% LEL (lower explosive limit)

#### Accuracy/Repeatability

±3% 0-50% LEL; ±5% 51-100% LEL

#### Response Time

T50 < 10 seconds, T90 < 30 seconds

#### Outputs

Linear 4-20 mA DC  
RS-485 Modbus™  
3 Relays - alarm 1, 2, fault, contacts 5 amp (optional)

#### Electrical Classification

Explosion proof  
Class I, Division 1, Groups C, D (Tamb = -40°C to +60°C)  
Class I, Zone 1, Group IIB  
Ex db ib IIB T4 Gb (Tamb = -40°C to +60°C)

#### Safety Approvals

cCSAus Performance to ISA 12.13.01-2000 and CSA 22.2 #152  
ATEX  
CE Marking  
IECEX

#### Warranty

Plug-in detector - 2 years  
Transmitter - 2 Years

### Environmental Specifications

#### Operating Temperature Range

-40°F to +140°F; -40°C to +60°C

#### Storage Temperature Range

-40°F to +140°F; -40°C to +40°C

#### Operating Humidity Range

0-100% RH non-condensing

### Mechanical Specifications

#### Dimensions

With Stainless Steel Mini J-Box  
10"H x 3.62"W x 4.3"D; 254mmH x 92mmW x 109mmD  
10"H x 5.5"W x 4.3"D; 254mmH x 140mmW x 109mmD (with XP  
Power Switch)  
12.2"H; 310mmH (with splashguard)

#### Weight

5.2 lbs/2.36 kg

### Order Guide

Part Number	Description
96C-IR0402-100	Model CX-IR, 0-100% LEL Combustible in Stainless Steel Mini Junction Box

### Electrical Options

#### Power Input

9-30 VDC  
Internal "D" Size Disposable Battery Pack (optional)  
Lithium Ion Rechargeable Battery Pack (optional for CSA units only)

#### Power Consumption

100mW (Typical); 660mW (Max)

#### RFI/EMI Protection

Complies with EN50270

#### Analog Output

Linear 4-20mA DC (750 ohms max loop load @ 24VDC)  
0mA All Fault Diagnostics  
4-20mA 0-100% full-scale  
22mA Over-range condition

#### Serial RS-485 Output

RS-485 Modbus™ RTU

#### Baud Rate

9600 BPS (9600,N,8,1 Half Duplex)

#### Status Indicators

4-digit LED display with gas concentration & fault

#### Faults Monitored

Missing Sensor, Zero,  
Calibration

#### Cable Requirements

Power/Analog  
3-wire shielded cable  
Maximum distance is 13,300 feet with 14 AWG  
Serial Output (optional)  
2-wire twisted-pair shielded cable specifically for use with  
RS-485 installations  
Maximum distance is 4,000 feet to last sensor

#### I/O Protection

Over-voltage, Miswiring, EMI/RFI Immunity

### Accessory Options

Tripod for Mounting (specify pole mount and/or leg mount  
brackets)  
Mini Tripod for Mounting (specify pole mount and/or leg mount brackets)

*Specifications subject to change without notice*

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