



SmartWireless®

Model CXT-IR
Infrared LEL Gas Detection Sensor

GAS DETECTION SENSORS ■ INTEGRATED CONTROL SYSTEMS ■ SMARTWIRELESS® ■ PIPELINE ANALYZERS ■ ALARMS

Description

Detcon Model CXT-IR SmartWireless® gas detection sensors are easily and economically deployable in both permanent and temporary installations. This low power sensor assembly utilizes infrared technology for combustible hydrocarbons. All component parts are rated for Class 1; Division 1, Groups C, D hazardous areas. This advanced field device consists of a Detcon Model Series CXT low power infrared gas detection sensor, and wireless transceiver packaged in a single enclosure. Power is provided by an internal battery pack with disposable “C” cell (3.6V) batteries capable of continuous operation for greater than 60 days. An optional lithium ion rechargeable battery pack allows for 5 months operation. Solar power options allow for indefinite operation. An optional battery pack with disposable “D” cell (3.6V) batteries is capable of delivering up to 9 months operation.

Detcon’s proprietary “Self Healing Mesh” technology operates at 2.4 GHZ and conforms to non licensed radio frequency appliance usage around the world. Wireless network integrity and security is accomplished using direct sequence spread spectrum DSSS programming topology. Wireless applications can be as simple as a single field device communicating with a host display or any number of field devices forming a network of subscribers. Each device in the network is assigned its unique device identification or a UID. Every device in the network can act as a router and repeater for all other devices in the network. This means that subscribers can “hop” through neighboring devices to communicate with each other thereby widening network access points. This unique and innovative technology is designed to create a robust network that automatically routes around congestion and line-of-sight obstacles while improving throughput as subscriber device density increases.

Standard network configuration is of the master/slave type (320 Transceiver). An optional and proprietary technology referred to as “Fault Tolerant Safety Network” (300 Transceiver) is also available which guarantees that no single point of failure will interrupt communications between devices on the rest of the network, including loss of HMI. Processing power is, in a sense, shared among all devices. There is no controller dependence. Each device in the network is capable of acting as the network master, processing real time data and issuing commands to other devices in the network.



Features

- ▶ Detcon self healing mesh network topology
- ▶ Universally accepted 2.4 GHz non-licensed frequency
- ▶ Low power IR gas detection sensor with built-in transceivers
- ▶ Built-in display for gas sensor/field device HMI
- ▶ Disposable battery packs

Applications

- ▶ Oil and Gas Drilling Rigs
- ▶ Work-over and pulling units
- ▶ Oil and Gas Production
- ▶ Turn-a-rounds in Refining and Petrochemical Plants

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

Input/Output
 2.4Ghz DSSS Radio Transmission

Safety Approvals
 Explosion proof
 cCSAus Class I, Division 1, Groups C, D (Tamb = -40°C to +60°C)
 Class I, Zone 1, Group IIB
 ATEX* Ex d ib IIB T4 Gb (Tamb = -40°C to +60°C)
 CE Marking*
 IECEx*

* "C" cell battery pack version only

Performance Approvals
 cCSAus Performance tested to ISA 12.13.01-2000 and CSA 22.2 #152

Ingress Protection
 NEMA 4X

Warranty
 Plug-in detector - 2 years
 Transmitter - 2 Years

Mechanical Specifications

Dimensions
 With Stainless Steel Mini J-Box
 18"H x 3.62"W x 4.3"D; 457mmH x 92mmW x 109mmD
 18"H x 5.5"W x 4.3"D; 457mmH x 140mmW x 109mmD (with XP Power Switch)
 20.5"H; 520mmH (with splashguard)
 With Aluminum J-Box (rechargeable battery pack version)
 19"H x 5.8"W x 8.5"D; 482mmH x 147mmW x 216mmD
 19"H x 7.7"W x 8.5"D; 482mmH x 195mmW x 216mmD (with XP Power Switch)
 21.5"H; 546mmH (with splashguard)

Weight
 5.2 lbs/2.36 kg (w/stainless steel j-box)
 6 lbs/2.72 kg (w/aluminum j-box)

Order Guide

Part Number	Description
96C-IR0_0_-100	Model CXT-IR, 0-100 % LEL Combustible

To complete the part number please select from the options below. X X X - X X X _ X _ - X X X

Position "7" select SmartWireless Transceiver Option
 0 - CXT-DM with 300 fault tolerant transceiver
 2 - CXT-DM with 320 mesh transceiver

Position "9" Junction Box Selection & Power Selection
 1 - Aluminum Junction Box (no battery)
 2 - Stainless Steel Mini Junction Box, internal Battery Pack with Disposable "C" Cells (3.6V)
 3 - Stainless Steel Junction Box (no battery)
 4 - Aluminum Enclosure with Rechargeable Battery Pack
 7 - Aluminum Enclosure with High Output Rechargeable Battery Pack
 D - Aluminum Enclosure, internal Battery Pack with Disposable "D" Cells (3.6V)
 5 - None

Battery Specifications

Battery Pack with Disposable "C" Cells (3.6V): 2 months sensor run time full function (-55°C to +85°C; -67°F to +185°F discharge temperature).

Battery Pack with Disposable "D" Cells (3.6V): 9 months sensor run time full function (-55°C to +85°C; -67°F to +185°F discharge temperature).

Smart Lithium Ion Rechargeable Battery: 5 months sensor run time full function (-20°C to +60°C; -4°F to +140°F discharge temperature; -30°C intermittent).

Electrical Specifications

Power Input
 9-30 VDC and/or
 Internal Battery Pack with "C" Size (3.6V) disposable batteries
 Optional internal Battery Pack with "D" Size (3.6V) disposable batteries
 Optional Lithium Ion Rechargeable Battery Pack

Power Consumption
 25mW (typical), 420mW (max)

RF
 Outdoor RF Line of Sight (with standard antenna): 1.5 Miles
 Interface Data Rate: 9,600bps
 Throughput Data Rate: 19,200bps
 RF Data Rate: 250,000bps
 Transceiver Sensitivity: -102dBm
 Frequency: 2.40-2.48GHz
 RF Channels: 16, each 5Mz Wide
 Output Power: 100mW (20.5dBm) EIRP
 Spread Spectrum: DSSS (Direct Sequence Spread Spectrum)
 Modulation: 0-QPSK
 Supported Network Topologies: Mesh, Point-to-Point

Antenna
 5db Flex Whip; Screw on Radome Whip Antenna Guard Included

I/O Protection
 Over-voltage, Miswiring, EMI/RFI Immunity

Environmental Specifications

Operating Temperature Range
 -40°F to +167°F; -40°C to +75°C

Storage Temperature Range
 -40°F to +167°F; -40°C to +75°C

Operating Humidity Range
 0-100% RH non-condensing

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)
 7db Gain Antenna
 Solar Charging Panel

Refer to the CXT-300/320 data sheet for CXT-300/320 transceiver specific specifications
 Specifications subject to change without notice



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