



## Description

Detcon Model FP-624D is a “Smart” gas detection sensor designed to detect and monitor combustible gas in air over the range of 0-100% LEL (lower explosive limit) using matched-pair catalytic bead technology.

Model FP-624D features Detcon's MicroSafe™ intelligent electronics, non-intrusive operator interface and comprehensive fault diagnostics. The sensor transmitter features an advanced universal design that fits all existing Detcon matched-pair catalytic bead sensors dating back more than 20 years. The sensor assembly includes the detector in stainless steel housing, a base connector board, an explosion proof enclosure (available in aluminum or stainless steel), a plug-in control transmitter circuit, and a splashguard with integral cal port. The packaging is Explosion Proof (Class I, Div. 1 Groups B, C, D).

Model FP-624D is equipped with a standard analog 4-20 mA current signal equivalent to the sensor range of detection, RS-485 serial communications port, 3 alarm relays, one-man remote calibration, self-adjusting zero and span, and LED indicators for fault, alarm, and calibration status. Detcon's combustible gas sensor has an infinite shelf life and is supported by a 2-year warranty.



(shown as PN 966-524520-100 in Aluminum j-box)

## Features

- ▶ Performance Certified to CSA 15.2
- ▶ CSA for Class I, Division 1, Groups B, C, & D
- ▶ Transmitter design fits all existing Detcon Catalytic Bead Sensors dating back 20 years
- ▶ 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 - less than 3 minutes
- ▶ LED display and LED indicators for FAULT and CAL status
- ▶ Plug-in field-replaceable transmitter
- ▶ Long sensor life expectancy:
  - ▶ averaging longer than five years in harsh offshore drilling/production environments
- ▶ High resistance to poisons such as sulfides, chlorides, silicon-based contaminants etc.
- ▶ Low power consumption (less than 3.5 watts versus 8+ watts on competitive brands)
- ▶ Extensive Fault diagnostics

## Applications

- ▶ Oil and Gas Drilling Rigs
- ▶ Oil and Gas Production Sites
- ▶ Offshore Production Platforms
- ▶ FPSOs
- ▶ LNG/CNG Plants
- ▶ Refining and Petrochemical
- ▶ Pulp and Paper Mills
- ▶ Waste Water Treatment Plants

## System Specifications

### Sensor Type

Matched-pair catalytic bead

### Sensor Life

3 to 5 years typical

### Measurement Range

0-100% LEL (lower explosive limit)

### Accuracy/Repeatability

±3% 0-50% LEL

±5% 50-100% LEL

### Response/Clearing Time

T50 <10 seconds; T90 <30 seconds

### Zero Drift

<5% per year

### Outputs

Linear 4-20 mA DC

RS-485 MODBUS-RTU

3 Relays (alarm 1, alarm 2, & fault)

Contacts rated 5 amps

### Electrical Classification

Explosion proof

CSA and US (NRTL)

Class I, Division 1, Groups B, C, D (Tamb = -40°C to +75°C)

Class I, Zone 1, Group IIB+H2

### Performance Approvals

CSA C22.2 #152

### Safety Approvals

cCSAus

### Ingress Protection

NEMA 4X, IP56

### Warranty

Sensor: 2 year warranty

Transmitter: 2 year warranty

## 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

0-99% RH non-condensing

### Operating Pressure Range

Atmospheric ±10%

Specifications subject to change without notice

## Mechanical Specifications

### Dimensions

10"H (including splashguard) x 6.1"W x 4.3"D

254mmH x 155mmW x 109mmD

Mounting holes (J-box) 5.5"; 140mm center to center

### Weight

6 lbs; 2.72kg (w/aluminum j-box)

9 lbs; 4.08kg (w/stainless steel j-box)

## Electrical Specifications

### Power Input

12-28 VDC

### Power Consumption

Normal operation = 68mA (<1.7 watt)

Maximum = 87mA (2 watts)

### RFI/EMI Protection

Complies with ISO 92.0.01

### Analog Output

Linear 4-20mA DC (1,000 ohms max loop load @ 24VDC)

0mA All Fault Diagnostics

2mA In-Calibration

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

Full-script menu prompts for AutoSpan,

Set-up Options, and Fault Reporting

4 LEDs for Alarm 1, Alarm 2, Fault, and Calibration

### Relay Outputs

Alarm 1, Alarm 2, and Fault

5A @ 250VAC

5A @ 30VDC

### Faults Monitored

Loop, Input Voltage, Zero

Sensor, Processor, Memory, Calibration

### Cable Requirements

Power/Analog

3-wire shielded cable

Maximum distance is 13,300 feet with 14 AWG

Serial Output

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

## Order Guide

Specify junction box options (below)

PN 966-524520-100 Model FP-624D in Aluminum Junction Box

PN 966-52452B-100 Model FP-624D-316SS in Stainless Steel Junction Box

Houston

Odessa

Shanghai

Dammam

Del Carmen

Europe



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ISO 9001: 2008  
Certified