

Model FP-624D

Combustible Gas Sensor



Description

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, Division 1, Groups 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, 2 alarm relays and 1 fault relay, 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.

Features

- Performance Certified to CSA 152
- cCSAus for Class I, Division 1, Groups 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: averaging +5 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



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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

HART (optional)

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

Contacts rated 5 amps

Electrical Classification

Explosion proof

CSAus

Class I, Division 1, Groups C, D (Tamb = -25°C to +40°C)

Class I, Zone 1, Group IIB

cCSA

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

Class I, Zone 1, Group IIB

Performance Approvals

CSA C22.2 #152

Safety Approvals

cCSAus

Ingress Protection

NEMA 4X, IP66

Warranty

Sensor: 2 year warranty

Transmitter: 2 year warranty

Environmental Specifications

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)

Storage Temperature Range

-40°C to +75°C; -40°F to +167°F

Operating Humidity Range

0-99% RH non-condensing

Operating Pressure Range

Atmospheric ±10%

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

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

Status Indicators

4-digital 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

Specifications subject to change without notice

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