



Model TP-524D

Combustible Gas Sensor



Description

Model TP-524D is a "Smart" gas detection sensor designed to detect and monitor H₂S in air over the ranges of 0-20 ppm, 0-50 ppm, and 0-100 ppm using a proprietary solid state metal oxide semiconductor technology. This innovative design offers several advantages including longer sensor life and better temperature and humidity performance.

Model TP-524D 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 MOS H₂S sensors dating back more than 20 years. The sensor assembly includes a MOS 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 B, C, D).

Model TP-524D is equipped with a standard analog 4-20 mA current signal equivalent to the sensor range of detection, self-adjusting zero and span, and LED indicators for fault and calibration status. A HART communications option is also available. Detcon's solid state MOS sensor is supported by an industry leading 10-year conditional warranty.

Features

- cCSAus approved for Class I, Division 1, Groups B, C, & D
- Transmitter design fits all existing Detcon MOS H₂S Sensors dating back 20 years
- Simple menu driven calibration - less than 3 minutes
- LED display and LED indicators for FAULT and CAL status
- Plug-in field-replaceable transmitter
- Response similar to electrochemical sensors: T-50 <30 sec., T-90 <60 sec.
- 10 year conditional sensor warranty
- Direct response constant temperature control
- Withstands exposure to high range concentrations of H₂S and other acid gases
- Impervious to high moisture environments in both powered and non-powered mode
- Extensive Fault diagnostics

Applications

- Oil and Gas Drilling Rigs
- Oil and Gas Production Sites
- Refining and Petrochemical
- Pulp and Paper Mills
- Waste Water Treatment Plants



Model TP-524D

Hydrogen Sulfide Sensor

System Specifications

Sensor Type

Continuous diffusion/adsorption
CHEMFET Solid State Metal Oxide Semiconductor

Sensor Life

5 to 10 years typical

Measurement Range

0-20 ppm, 0-50 ppm, 0-100 ppm

Accuracy/Repeatability

±10% of reading or ±2 ppm (greater of)

Response/Clearing Time

T50 <30 seconds; T90 <60 seconds

Outputs

Linear 4-20 mA DC
HART (optional)

Electrical Classification

Explosion proof

CSAus

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

Class I, Zone 1, Group IIB+H2

cCSA

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

Class I, Zone 1, Group IIB+H2

FM

Class I, Division 1, Groups B, C, D (Tamb = -40°C to +60°C)

Complies with ANSI/ISA 92.00.01-2010

ATEX

Ex d IIB+H2 T4 (Tamb = -40°C to +60°C)

Ingress Protection

NEMA 4X, IP66

Warranty

Plug-in detector - 10 year conditional

Transmitter - 2 year

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

-35°C to +55°C; -13°F to +131°F

Operating Humidity Range

5-100% RH non-condensing

Operating Pressure Range

Atmospheric ±10%

Order Guide

PN 965-015420-100 Model TP-524D in Aluminum Junction Box
PN 965-01542B-100 Model TP-524D-316SS in Stainless Steel Junction Box
PN 9H5-015420-100 Model TP-524D with HART in Aluminum Junction Box
PN 9H5-01542B-100 Model TP-524D-316SS with HART in Stainless Steel Junction Box

*Note above part numbers are for 0-100 ppm range. For 0-20 ppm or 0-50 ppm range replace -100 with -020 or -050 respectively.

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 = 85mA (2 watts)

RFI/EMI Protection

Complies with EN 50270

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-digit LED display with gas concentration

Full-script menu prompts for AutoSpan,

Set-up Options, and Fault Reporting

LEDs for Fault and Calibration

Faults Monitored

Heater, Loop, Input Voltage

Sensor, Processor, Memory, Calibration

Cable Requirements

Power/Analog

3-wire shielded cable

Maximum distance is 13,300 feet with 14 AWG

I/O Protection

Over-voltage, Miswiring, EMI/RFI Immunity

Specifications subject to change without notice

Teledyne Detcon quality assurance programmes demand the continuous assessment and improvement of all Teledyne Detcon products. Information in this leaflet could thus change without notification and does not constitute a product specification. Please contact us or our representative if you require more details.



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