



Model TP-524D

Hydrogen Sulfide Sensor

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

Description

Detcon Model TP-524D is a “Smart” gas detection sensor designed to detect and monitor H₂S in air over the range of 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, Div. 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 has an infinite shelf life and is supported by an industry leading 10-year conditional warranty.



(shown as PN 965-015420-100 in Aluminum j-box)

Features

- ▶ Performance Certified to ISA 92.0.01 Part I-1998: Performance Requirements for H₂S
- ▶ FM and CSA-US 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-80 <60 sec.
- ▶ VERY wide operating temperature range: -40°C to +75°C
- ▶ 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

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R020212

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; T80 <60 seconds

Outputs

Linear 4-20 mA DC
HART (optional)

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
FM
Class I, Division 1, Groups B, C, D (Tamb = -40°C to +60°C)
ATEX
Ex d IIB+H2 T4 (Tamb = -40°C to +60°C)

Performance Approvals

ISA 92.0.01 Part I-1998;
H2S Performance Requirements

Safety Approvals

cCSAus
FM
ATEX
CE Marking

Ingress Protection

NEMA 4X, IP56

Warranty

Plug-in detector - 10 year conditional
Transmitter - 2 Years

Environmental Specifications

Operating Temperature Range

-40°F to +167°F; -40°C to +75°C

Storage Temperature Range

-31°F to +131°F; -35°C to +55°C

Operating Humidity Range

5-100% RH non-condensing

Operating Pressure Range

Atmospheric ±10%

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 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-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

Order Guide

Specify junction box options (below)

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

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