

3M™ Detcon™ Model TP-624D

Hydrogen Sulfide Sensor

Description

Detcon Model TP-624D 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-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 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-624D is equiped 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 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
- Compatible with PLCs, SCADA, DCS, via 0-20 mA, and /or RS-485, and/ or alarm relays
- Sensor status ad 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 ststus
- Plug-in field-replaceable transmitter
- Response similar to electrochemical sensor:T50 <30sec., T80 <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

Applicatoins

- 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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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

RS-485 MODBUS-RTU

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

Contacts rated 5 amps

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

cCS/

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

+40°C)

Class I, Zone 1, Group IIB+H2

ATEX

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

Safety Approvals

cCSAus

ATEX

CE Marking

SIL2 FMEDA Rating

Ingress Protection

NEMA 4X, IP66

Warranty

Plug-in detector - 10 year conditional

Transmitter - 2 Years

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; -31°F to +131°F

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 EN 50270

Analog Output

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

OmA 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

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

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

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

