Model TP-524D

Hydrogen Sulfide 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 humidityperformance.

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

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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

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