Model TP-624D

Hydrogen Sulfide Sensor

Description

Model TP-624D is a "Smart" gas detection sensor designed to detect and monitor H2S in air over the ranges of 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-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, , one-man remote calibration, self-adjusting zero and span, and LED indicators for 2 alarm relays and 1 fault relay 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

Applications

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

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
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
cCSA
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
IP66

Warranty
Plug-in detector - 10 year conditional
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
-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 966-014520-100   TP-624D Solid State MOS H2S Sensor Assembly Alum Condulet
PN 966-01452B-100   TP-624D-HRT Solid State MOS H2S Sensor Assembly Alum condulet with Hart
PN 9H6-014520-100   TP-624D-HRT Solid State MOS H2S Sensor Assembly Alum condulet with Hart
PN 9H6-01452B-100   TP-624D-HRT Solid State MOS H2S Sensor Assembly 316SS condulet with Hart

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

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

* 12 VDC available by special order
Specifications subject to change without notice

TELEDYNE
GAS AND FLAME DETECTION
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