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, Div. 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 has an infinite shelf life and is supported by an industry leading 10-year conditional warranty.

(shown as PN 966-014520-100 in Aluminum j-box)

Features

▶ Performance Certified to ISA 92.0.01 Part I-1998: Performance Requirements for H2S
▶ 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
▶ Compatible with PLCs, SCADA, DCS, via 0-20 mA, and/or RS-485, and/or alarm relays
▶ Sensor status and 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 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

RO51812

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

Performance Approvals
ISA 92.0.01 Part I-1998;
H2S Performance Requirements

Safety Approvals
CSA/NRTL (US OSHA Certified)
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°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%

Specifications subject to change without notice

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

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

Order Guide Specify junction box options (below)

PN 966-014520-100   Model TP-624D in Aluminum Junction Box
PN 966-01452B-100   Model TP-624D-316SS in Stainless Steel Junction Box

Houston ▪ Odessa ▪ Shanghai ▪ Dammam ▪ Del Carmen ▪ Europe