Model DM-700-SO2

Sulfur Dioxide Sensor

GAS DETECTION SENSORS

INTEGRATED CONTROL SYSTEMS

SMARTWIRELESS® ■

PIPELINE ANALYZERS

Description

Detcon Model DM-700-SO2 is a non-intrusive "Smart" sensor designed to detect and monitor Sulfur Dioxide in air over the range of 0-20 ppm using electrochemical sensor technology. The intelligent plug-in, field replaceable cell provides automatic recognition of gas type and range, and features over-sized gold-plated connections that help prevent corrosion. The Model 700's rugged framework includes an intrinsically safe electro-polished 316 stainless steel housing with fully encapsulated electronics and dual layer surge protection. This innovative design virtually eliminates sensor failure due to water ingress, corrosion, vibration, and transient spikes. A primary feature of the Model 700 is embedded intuitive software that simplifies operator interface by guiding the user through routine calibration, configuration, and fault diagnostic functions using a built-in alpha/numeric display. The Model 700 is equipped with standard analog 4-20mA, and Modbus™ RS-485 outputs. Among its unique features is a wireless option that can be used with Detcon's SmartWireless® product line. Additional integration options include a Remote Alarm Module (RAM), HART, and Foundation Fieldbus. Detcon's toxic gas sensors have a long shelf life and are supported by an industry-leading warranty.

Features

Failsafe User-Friendly Interface

- ► LED Display (With Antiglare Cover)
- ► Full Text Display Method
- ► Non-intrusive Interface
- Auto Zero/Auto Span
- Pre-emptive Fault Diagnostics

Environmentally Bulletproof

- ► Electropolished 316SS Construction
- ▶ 100% Epoxy Encapsulated Circuitry
- ▶ Bulletproof I/O Protection
- ▶ Water-Proof, Corrosion-Proof, Vibration-Proof

Modular and Serviceable

- Modular Design
- Plug and Play Components
- Quick Thread Release (For Sensor Replacement)
- Integral Calibration Port

Electrochemical Fuel Cell

(shown as PN 967-555594-020 in SS junction box)









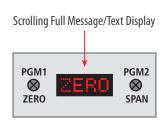






Applications

- Oil & Gas
- Chemical Plants
- ► Food and Beverage
- Steel Mills
- Pulp and Paper
- Refineries
- **Wastewater Treatment Plants**
- Utilities



R082514

System Specifications

Sensor Type

Continuous diffusion/adsorption 3-electrode electrochemical cell Plug-in field replaceable Intelligent Type

Measurement Range

0-20 ppm, Other ranges available

Accuracy/Repeatability

±2% FS

Response/Clearing Time

T90 ≤20 seconds

Span Drift

<2% signal loss per month

Outputs

Linear 4-20 mA DC RS-485 MODBUS-RTU

Electrical Classification

Explosion proof CSA and US (NRTL)

Class I, Division 1, Groups B, C, D (Tamb = -40°C to +50°C) Class I, Zone 1, Group IIC

ATEX

II 2 G Ex d ib IIC T4 Gb (Tamb = -40°C to +50°C)

Ingress Protection

NEMA 4X, IP66

Safety Approvals

cCSAus ATEX

CE Marking

SIL2 Certified to IEC 61508

Sensor Life/Warranty

Plug-in cell - 2 years; Transmitter - 2 Years

Environmental Specifications

Operating Temperature Range

-4°F to +122°F; -20°C to +50°C

Storage Temperature Range

-31°F to +131°F; -35°C to +55°C (typical)

Operating Humidity Range

15% to 90% RH non-condensing

Operating Pressure Range

Atmospheric ±10%

Specifications subject to change without notice

Order Guide Specify junction box options (below)

PN 967-555590-020 DM-700-S02 Sensor Assembly (no junction box)
PN 967-555591-020 DM-700-S02 Sensor Assembly with Aluminum J-Box
PN 967-555594-020 DM-700-S02 Sensor Assembly with 316 SS J-Box

Mechanical Specifications

Dimensions

7"H x 2.2" Dia.; 178mmH x 65mm Dia. (sensor assembly only) 11"H x 6.1"W x 3.75"D; 280mmH x 155mmW x 96mmD (with junction box) Mounting holes (J-box) 5.5"; 140mm center to center

Weiaht

2 lbs; 0.907kg (sensor only) 6 lbs; 2.72kg (w/aluminum j-box) 9 lbs; 4.08kg (w/stainless steel j-box)

Electrical Specifications

Power Input

11-30 VDC

Power Consumption

Normal operation = 30mA (<0.75 watt) Maximum = 50mA (1.2 watts)

Inrush Current

500mA @ 24V (typical)

RFI/EMI Protection

Complies with EN61000

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

Faults Monitored

Loop, Input Voltage, Missing Sensor, Zero,

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

Integration Options

Remote Alarm Module (Remote Operation and 2 Alarm Relays plus Fault)
Hart Integration Module (Hart Communication Protocol version 7.0, HART Registered)
Foundation Fieldbus Integration Module (Foundation Fieldbus version 5.01)
Wireless Integration Module (Detcon Model RXT-320 SmartWireless® Transceivers)

Houston Odessa Shanghai Dammam Del Carmen



ISO 9001: 2008 Certified