Description

Detcon Model DM-700-C2H2 is a non-intrusive "Smart" sensor designed to detect and monitor Acetylene in air over the range of 0-100 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.

Electrochemical Fuel Cell
(shown as PN 967-12EG94-100 in SS junction box)

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

Applications
▶ Oil & Gas
▶ Chemical Plants
▶ Food and Beverage
▶ Steel Mills
▶ Pulp and Paper
▶ Refineries
▶ Wastewater Treatment Plants
▶ Utilities

Scrolling Full Message/Text Display

PGM1   ZERO   PGM2
⊗   ⊗
ZERO   SPAN

System Specifications

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

Measurement Range
0-100 ppm, Other ranges available

Accuracy/Repeatability
±2% FS

Response/Clearing Time
T90 <140 seconds

Span Drift
<5% signal loss per year

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℃ to +50℃)
Class I, Zone 1, Group IIC
ATEX
II 2 G Ex d ib IIC T4 Gb (Tamb = -40℃ to +50℃)

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℃ to +50℃

Storage Temperature Range
-31°F to +131°F; -35℃ to +55℃ (typical)

Operating Humidity Range
15% to 90% RH non-condensing

Operating Pressure Range
Atmospheric ±10%

Specifications subject to change without notice

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

Weight
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

Order Guide   Specify junction box options (below)

PN 967-12EG90-100   DM-700-C2H2 Sensor Assembly (no junction box)
PN 967-12EG91-100   DM-700-C2H2 Sensor Assembly with Aluminum J-Box
PN 967-12EG94-100   DM-700-C2H2 Sensor Assembly with 316 SS J-Box

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