## Model DM-700-C2H2

Acetylene Sensor

**GAS DETECTION SENSORS** 

**INTEGRATED CONTROL SYSTEMS** 

SMARTWIRELESS® ■

PIPELINE ANALYZERS

ALARMS

## 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<sup>TM</sup> 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, Foundation Fieldbus, and Profibus. 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 967-12EG94-100 in SS junction box)





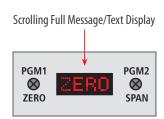






## **Applications**

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



## **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 =  $-40^{\circ}$ C to  $+50^{\circ}$ C) Class I, Zone 1, Group IIC

ATEX

II 2 G Ex d [ib] ib IIC T4 (Tamb =  $-40^{\circ}$ C to  $+50^{\circ}$ C)

**Ingress Protection** 

NEMA 4X, IP66

**Safety Approvals** 

c**CSA**us

ATEX CE Marking

SIL2 FMEDA Rating

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 967-12EG90-100 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

**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)
Profibus Integration Module (Certified to Profibus DP Standard)
Foundation Fieldbus Integration Module (Foundation Fieldbus version 5.01)
Wireless Integration Module (Detcon Model RXT-320 SmartWireless® Transceivers)

Houston 
Odessa 
Shanghai 
Dammam 
Del Carmen



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