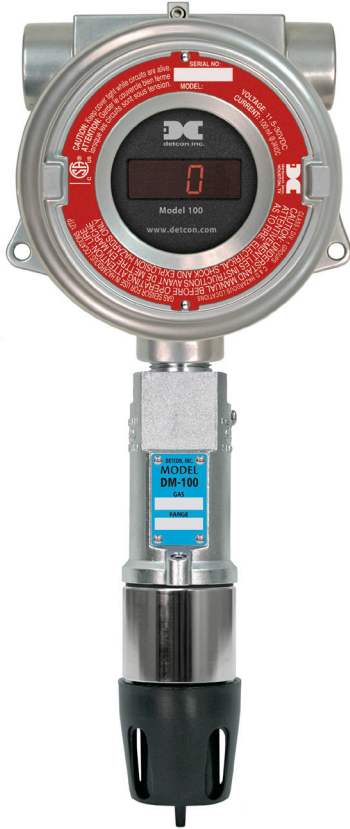




Gas & Flame Detection



3M™ Detcon™ Model 100

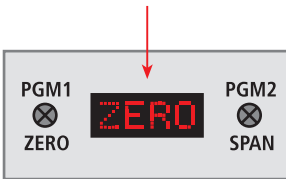
Toxic Gas Sensors

Description

Model DM-100 Series sensors feature intelligent electronics, non-intrusive operator interface and comprehensive fault diagnostics. The sensor is packaged in an electro-polished 316 stainless steel housing fitted with a ¼ inch NPT thread. The plug-in, field replaceable sensor cell features large surface area gold-plated pins that reduce the effects of corrosion in harsh industrial environments. Signal conditioning electronics are completely encapsulated in the sensor housing adding a high level of durability to the design. The packaging is XP-intrinsically safe. This innovative design marks a return to a simple, more affordable, and durable gas detection sensor without compromising quality.

Model DM-100 sensors provide a 2-wire loop powered 4-20 mA current signal equivalent to the sensor range of detection. Upper enclosure options are aluminum and stainless steel (includes a transient protection terminal board). Additional accessories include wireless communications, a loop powered digital display. Each sensor is shipped with a splash guard with integral calibration port. Detcon's toxic gas sensors have a long shelf life and are supported by an industry-leading warranty.

Scrolling Full Message/Text Display



Electrochemical Fuel Cell

(shown as PN 961-340022-25P in Aluminum j-box with Loop Powered Display)



Features

- XP-intrinsically Safe
- Class I, Div. 1, Groups B, C & D
- 2 Wire Loop powered
- Field Replaceable Electrochemical Sensor
- Non-intrusive Magnetic Interface
- Built-in Diagnostics
- Fully Encapsulated ITM Electronics
- Electropolished 316SS Construction ITM
- Quick Thread Release (for sensor replacement)
- Integral Calibration Port

Applications

- Oil and Gas
- Chemical Plants
- Food and Beverage
- Steel Mills
- Pulp and Paper
- Refineries
- Waste Water Treatment Plants
- Utilities



3M™ Detcon™ Model 100

Toxic Gas Sensor

Gas	Part Number	Warranty	Measuring Accuracy	Response Time	Operating Temp	Storage Temp	Operating Humidity
Ammonia	961-500022-100	2 years	0-100 ppm ±2% FS	T90≤90 seconds	-40 to 122°F/-40 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Arsine	961-190022-001	1.5 years	0-1 ppm ±2% FS	T90≤60 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	20-95% RH non-condensing
Bromine	961-750022-005	2 years	0-5 ppm ±2% FS	T90≤60 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-95% RH non-condensing
Butadiene	961-EB0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Carbon Monoxide	961-440022-100	3 years	0-100 ppm ±2% FS	T50≤10 sec./ T90≤30 sec.	-40 to 122°F/-40 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Chlorine	961-740022-010	2 years	0-10 ppm ±2% FS	T90≤60 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Chlorine Dioxide 700	961-760022-050	2 years	0-50 ppm ±2% FS	T90≤120 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	10-95% RH non-condensing
Chlorine Dioxide 701	961-770022-001	2 years	0-1 ppm ±2% FS	T90≤60 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Diborane	961-210022-005	1.5 years	0-5 ppm ±2% FS	T90≤60 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	20-95% RH non-condensing
Ethanol	961-EO0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Ethylene (*See Note 2)	961-ED0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Ethylene Oxide	961-EJ0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-4 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Fluorine	961-270022-001	1.5 years	0-1 ppm ±2% FS	T90≤80 seconds	14 to 104°F/-10 to 40°C	-31 to 131°F/-35 to 55°C	10-95% RH non-condensing
Formaldehyde	961-EP0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-40 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Germane	961-250022-002	1.5 years	0-2 ppm ±2% FS	T90≤60 seconds	-40 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	20-95% RH non-condensing
Hydrazine	961-260022-001	1 year	0-1 ppm ±2% FS	T90≤120 seconds	14 to 104°F/-10 to 40°C	-31 to 131°F/-35 to 55°C	10-95% RH non-condensing
Hydrogen (1%)	961-070022-01P	2 years	0-1% volume ±2% FS	T90≤60 seconds	-4 to 104°F/-40 to 40°C	-31 to 131°F/-35 to 55°C	5-90% RH non-condensing
Hydrogen PPM	961-840022-100	2 years	0-100 ppm ±2% FS	T90≤30 seconds	-40 to 122°F/-20 to 50°C	-31 to 131°F/-35 to 55°C	15-90% RH non-condensing
Hydrogen Bromide	961-080022-030	1.5 years	0-30 ppm ±2% FS	T90≤70 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	10-95% RH non-condensing
Hydrogen Chloride	961-090022-030	1.5 years	0-30 ppm ±2% FS	T90≤70 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to 55°C	10-95% RH non-condensing
Hydrogen Cyanide	961-130022-030	2 years	0-30 ppm ±2% FS	T90≤40 seconds	-40 to 104°F/-40 to 40°C	-31 to 131°F/-35 to 55°C	5-95% RH non-condensing
Hydrogen Fluoride	961-330022-010	1.5 years	0-10 ppm ±2% FS	T90≤90 seconds	-4 to 95°F/-20 to 35°C	-31 to 131°F/-35 to 55°C	10-80% RH non-condensing
Hydrogen Sulfide	961-240022-100	2 years	0-100 ppm ±2% FS	T50≤10 sec./ T80≤30 sec.	-40 to 122°F/-40 to 50°C	-31 to 131°F/-35 to 55°C	5-90% RH non-condensing
Methanol	961-EE0022-100	2 years	0-100 ppm ±2% FS	T90≤140 seconds	-4 to 122°F/-20 to 50°C	-31 to +131°F/-35 to 55°C	15-90% RH non-condensing
Methyl Mercaptan	961-EK0022-100	2 years	0-100 ppm ±2% FS	T90≤45 seconds	-40 to 122°F/-40 to 50°C	-31 to +131°F/-35 to 55°C	15-90% RH non-condensing
Nitric Oxide	961-940022-100	3 years	0-100 ppm ±2% FS	T90≤10 seconds	-4 to 122°F/-20 to 50°C	-31 to +131°F/-35 to 55°C	15-90% RH non-condensing
Nitrogen Dioxide	961-640022-010	2 years	0-10 ppm ±2% FS	T90≤40 seconds	-4 to 122°F/-20 to 50°C	-31 to +131°F/-35 to 55°C	15-90% RH non-condensing
Oxygen	961-340022-025	2 years	0-25% volume ±1% FS	T90≤10 seconds	-4 to 122°F/-20 to 50°C	-40 to 122°F/-40 to 50°C	15-90% RH non-condensing
Ozone	961-390022-001	2 years	0-1 ppm ±2% FS	T90≤120 seconds	14 to 104°F/-10 to 40°C	-31 to +131°F/-35 to 55°C	10-95% RH non-condensing
Phosphine	961-200022-005	1.5 years	0-5 ppm ±2% FS	T90≤30 seconds	-4 to 104°F/-20 to 40°C	-31 to +131°F/-35 to +55°C	20-95% RH non-condensing
Silane	961-230022-050	1.5 years	0-50 ppm ±2% FS	T90≤60 seconds	-4 to 104°F/-20 to 40°C	-31 to 131°F/-35 to +55°C	20-95% RH non-condensing
Sulfur Dioxide	961-550022-020	2 years	0-20 ppm ±2% FS	T90≤20 seconds	-4 to 122°F/-20 to 50°C	-31 to +131°F/-35 to +55°C	15-90% RH non-condensing

*Note2: This product is a safety device to detect hazardous conditions, and is not intended for process control application in fruit ripening operations.

3M™ Detcon™ Model 100

Toxic Gas Sensor

System specifications

System Specifications

Sensor Type

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

Span Drift

- <5% signal loss per year (in first 2 years)

Outputs

- Linear 4-20 mA DC

Electrical Classification

- Explosion proof
- cCSAus
- Class I, Division 1, Groups B, C, D (Tamb = -40°C to +50°C)

Safety Approvals

- cCSAus

Sensor Life/Warranty

- Plug-in cell - 2 years (2 years expected life) ; Transmitter - 2 Years

Environmental Specifications

Operating Temperature Range

- Refer to chart on prior page per gas type.

Storage Temperature Range

- Refer to chart on prior page per gas type.

Operating Humidity Range

- 0% to 99% RH non-condensing (continuous)
- 0%-100% RH (intermittent)

Operating Pressure Range

- Atmospheric ±10%

Specifications subject to change without notice

Accessories

Junction Box

- (aluminum with Transient Protection Terminal Board)

Loop Powered Digital Display

- (Provides a Direct Display of Sensor Readings)

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

Electrical specifications

Power Input

- 11 - 30 VDC

Power Consumption

- Normal operation = 30mA @ 24V (<0.75 watt)
- Maximum = 50mA @ 24V (1.2 watts)

Inrush Current

- 500mA @ 24V (typical)

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

Status Indicators

- Optional 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 with ground, shielded communication cable specifically for use with RS-485 installations
- Maximum distance is 4,000 feet to last sensor

I/O Protection

- Over - voltage, Miswiring



Gas & Flame Detection



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