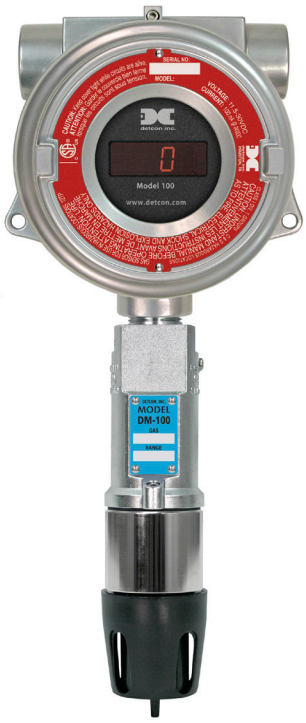
TELEDYNE DETCON
Everywhereyoulook™

Model 100

Toxic Gas Sensors

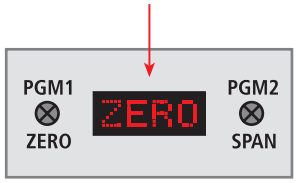


Description

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 ¾ 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)

Applications

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

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

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

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
See sensor detail table above for specific sensor warranty

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

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GAS & FLAME DETECTION
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