

GEM-W Multi-Purpose Gas Detector



GEM-W multi-purpose gas detector represents excellent value for the end user. They are available in one or two channel configurations accommodating accurate “smart” sensors and providing a wide range of features. These features include CSA, UL and C-Tick certifications, RoHS compliant circuit boards, two 5-amp dry contact relays, electronic adjustable set points, audible alarm, time delays, analog output, pluggable wiring terminal, rugged polycarbonate enclosure with hinged door, Lexan label, and optional 4-digit display.

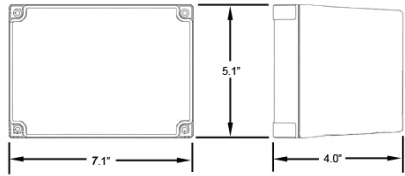
KEY FEATURES

- » Single or dual channel operation
- » Network multiple units
- » Integral or remote sensors
- » Integral plug and play “smart” sensors
- » 4 - 20 mA linear output signal
- » Three conduit entry ports
- » Thermal resetting fuse
- » LED light indicators
- » Two 5-amp SPDT relays
- » RoHS compliant circuit boards
- » Economical
- » CSA, UL & C-Tick certified

APPLICATIONS

- » Parking Garages
- » Repair Shops
- » Ice Cleaning Machine Rooms
- » Manufacturing Plants
- » ... and many more

TECHNICAL DRAWING



SAMPLE ENGINEERING SPECIFICATIONS

Vehicle Gas Detection System for Combustible Fuel Vapors

Supply a single channel, self-contained gas detection system, model GEM-B-SCB, for the monitoring of Propane fuel, gasoline vapours and other “heavier-than-air” fuel vapours, housed in a rugged, wall mount, drip-proof PVC enclosure with hinged, secured door. System power shall be 24 VAC nominal. The system shall have one remote solid-state sensor with measurement range of 0 - 50% LEL Combustibles in air. Area of monitoring coverage is 3,000 - 5,000 ft² / sensor.

The monitor shall provide an LED indicating light for power, low alarm, high alarm, and fault condition plus channel indication LED, one audible alarm with silence push-button and two SPDT dry contact alarm relays, each rated 5A at 240 VAC. The system must be accurate enough to measure to government workplace hazardous gas exposure standards. The system shall also provide field adjustable time delays for “delays on make” and “delays on break” for each sensor to allow custom configuration of fan control by the system relays, if desired.

The controller shall provide a circuit test button to allow the user to confirm system operation and exhaust fan control from the panel. The controller shall also provide a push-button to allow the user to override the system control and operate exhaust fans continuously for 15-minute segments to evacuate air from specific parts of the parking garage. Installation height for the gas detection controller is 4 - 6 ft from the floor. Installation height for the remote solid-state Combustibles sensors is 6” from the floor.

System operation shall be as follows: System relays are normally energized in non-gas-alarm state so they act in failsafe operation. Upon detection of 10% LEL fuel vapours in air, the system shall illuminate the Low alarm LED (amber) and the low gas alarm relay shall de-energize activating single-speed exhaust fans or low speed of two-speed exhaust fans plus make up air fans. Upon detection of 20% LEL fuel vapours in air, the system shall illuminate the High alarm LED (red), the system audible alarm will be activated and the high gas alarm relay shall de-energize activating high speed of two-speed exhaust fans or remote alarm devices. Audible alarm can be silenced from the front panel push button. In the event of a fail condition, the system audible alarm shall be activated and the fail LED on the front panel shall illuminate red.

The contractor shall provide all wiring, conduit and interconnection required for a successful installation. System should be tested and commissioned after installation, with a report provided after the site visit.

More specification samples are available at www.critical-environment.com.



GEM-W Multi-Purpose Gas Detector

TECHNICAL SPECIFICATIONS

GAS TYPE

Carbon Monoxide (CO)	ECO
Combustibles (solid state)	SCB
Methane (CH ₄)	SCB
Nitrogen Dioxide (NO ₂)	END
Nitric Oxide (NO)	ENO
Oxygen (O ₂)	E02
Propane (C ₃ H ₈)	SCB
Refrigerants (R12, R22, R134A, R401A, R402A, R404A, R407C, R410A, R422A, R422D, R438A, R507)	SR2
Sulphur Dioxide (SO ₂)	ESO
TVOCs (solid state)	SOS

MECHANICAL

Enclosure	Water / dust tight polycarbonate
Weight	700 g (1.4 lb)
Size	5.1" x 7.1" x 4.0" (130 mm x 181 mm x 102 mm)

ELECTRICAL

Power Requirement	15 - 30 VDC or 12 - 28 VAC
Current Draw	Approximately 125 mA
Outputs	Linear 4 - 20 mA (single)
Wiring	VDC three-conductor shielded VAC four-conductor shielded
Fuse	Automatic resetting thermal

ENVIRONMENTAL (sensor dependant)

Operating Temperature	-20°C to 50°C (-5°F to 120°F)
Humidity	15 - 90% RH non-condensing

CERTIFICATION

CSA	Certified
UL	Certified

PRODUCT CODES

SINGLE CHANNEL MODEL

Integral sensor, carbon monoxide (CO)	GEM-AECO-W
Integral sensor, nitrogen dioxide (NO ₂)	GEM-AEND-W
Integral sensor, nitric oxide (NO)	GEM-AENO-W
Integral sensor, sulphur dioxide (SO ₂)	GEM-AESO-W
Integral sensor, oxygen (O ₂)	GEM-AE02-W
Remote sensor	GEM-B-W
Remote sensor, combustible gases (solid state)	GEM-BSCB-W
Remote sensor, methane (CH ₄)	GEM-BSCB-W
Remote sensor, propane (C ₃ H ₈)	GEM-BSCB-W
Remote sensor, refrigerants (solid state)	GEM-BSR2-W
Remote sensor, TVOCs (solid state)	GEM-BSOS-W

DUAL CHANNEL MODEL

Integral carbon monoxide (CO), remote combustible (solid state)	GEM-DECO-SCB-W
Integral carbon monoxide (CO), remote methane (CH ₄)	GEM-DECO-SCB-W
Integral carbon monoxide (CO), remote propane (C ₃ H ₈)	GEM-DECO-SCB-W
Integral & remote sensors, carbon monoxide (CO)	GEM-DECO-ECO-W
Integral carbon monoxide (CO), remote nitrogen dioxide (NO ₂)	GEM-DECO-END-W
Integral carbon monoxide (CO), remote nitric oxide (NO)	GEM-DECO-ENO-W
Integral & remote sensors, oxygen (O ₂)	GEM-DE02-E02-W
Integral & remote sensors, nitrogen dioxide (NO ₂)	GEM-DEND-END-W
Integral & remote sensors, nitric oxide (NO)	GEM-DENO-ENO-W
Integral, carbon monoxide (CO) & nitrogen dioxide (NO ₂)	GEM-EECO-END-W
Integral, carbon monoxide (CO) & nitric oxide (NO)	GEM-EECO-ENO-W
Integral, carbon monoxide (CO) & oxygen (O ₂)	GEM-EECO-E02-W
Integral, carbon monoxide (CO) & sulphur dioxide (SO ₂)	GEM-EECO-ESO-W
Integral, nitrogen dioxide (NO ₂) & sulphur dioxide (SO ₂)	GEM-EEND-ESO-W

OPTIONS (to be added to the end of the product code)

LED digital display	N
Splash guard	S
120 VAC powered version	J
Enclosed external transformer, 120 - 22 VAC	TIB-2250

ACCESSORIES

Calibration kit, 15 L or 17 L cylinders, 0.5 LPM flow regulator	CET-8000-CK1
Calibration kit, 34 L, 58 L, 75 L, or 103 L cylinders, 0.5 LPM flow regulator	CET-7150-CK1

