



QAS - 101

QAS-101 SINGLE CHANNEL CONTROLLERS

The QAS-101 Series Single Point Gas Detector is an economical, stand alone gas detection and control unit. The detector uses a broad spectrum solid state semiconductor sensor to measure one of a series of hazardous gases. LED status indicator lights at the front provide alarm and fail information. Two DPDT relay outputs are available for alarm and control, as well as an internal audio indicator. The solid state sensor can be either integrally or remotely mounted to the 115 VAC powered electronics encased in a Nema 1 general purpose wall mount enclosure. Internal DIP switch selections configure relay time delays, relay actuation on sensor fail, and disable the audio indicator.



MODEL NUMBER ORDERING CODE

Q A S - 1 0 1 X - C 0 0 0

Gas Type

(See Gas Selection Table for #)

Revision (Factory Provided) — X

Enclosure (Commercial Nema 1) — C

Options (Enter 0 for No Selection)

Protective Sensor Guard — G

Remote Sensor Junction Box — J

Non-Standard Calibration — X

Special (Consult Factory) — S

GAS SELECTION TABLE

GAS TYPE	#	CALIBRATION	
		STANDARD	LOW ALARM
Carbon Monoxide	16	50 ppm in VE*	100 ppm in VE*
Combustibles	17	10% LEL**	20% LEL**
Ammonia	22	35 ppm	300 ppm
Freon R11	26	500 ppm	1000 ppm
Freon R12	27	500 ppm	1000 ppm
Freon R22	28	500 ppm	1000 ppm
Freon R134a	30	500 ppm	1000 ppm

VE* = vehicle exhaust

** = standard calibration for Propane

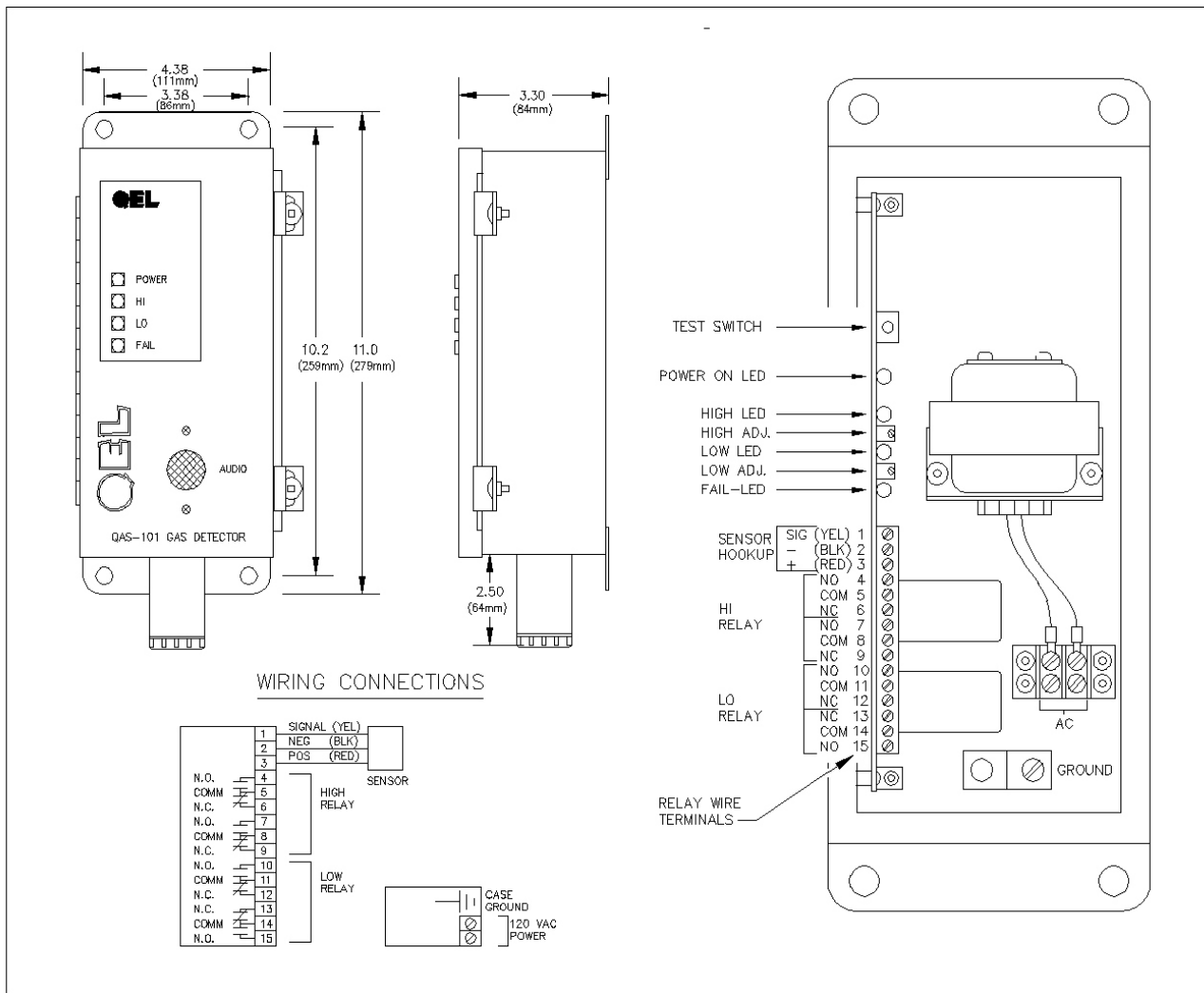
PRINCIPLE OF OPERATION

The solid state sensor utilizes a sintered tin dioxide element. When the sensor is heated to a high temperature (typically 400° C), free electrons flow easily when no oxygen is present. In clean air, oxygen is absorbed onto the element surface providing a restriction to the electron flow and therefore increasing the electrical resistance of the element. As the sensor is exposed to the target gas, the tin dioxide element absorbs molecules of the target gas causing oxidation in the process. This oxidation reduces the resistance of the element in a known and repeatable manner. The controller electronics measures this change in resistance and compares it to two independent setpoints. Field adjustment of the setpoints is done by multi-turn trim potentiometers. When either of these setpoints is exceeded by the measurement signal, the electronics actuates the associated internal DPDT relay. The contacts of this relay may be used to control ventilation fans, audible devices, visual alarms, or other on-off type equipment. Power requirement is 115 VAC, 50/60 Hz. The controller monitors the input signal and indicates a fail condition if the signal drops below a factory preset level. LED status indicator lights are visible at the front of the unit for power on, alarm status, and fail condition. The controller is supplied with an internal audio indicator for actuation on high alarm or fail condition. Internal DIP switch settings provide time delay for actuation of the relays, audible deactivation, and selection of relay to actuate on fail condition. The enclosure is rated Nema 1 general purpose for surface mounting.

SPECIFICATIONS

Input Power: 100 to 120 VAC, 60 Hz
Enclosure Rating: Nema 1 General Purpose
Enclosure Materials: No. 16 AWG Steel, Grey Enamel Finish
Temperature: -30° C to +40° C
Humidity: 0 to 90% RH, non-condensing
Pressure: Ambient ±10%
Input Types: Solid State Semi-conductor Sensors for Carbon Monoxide, Combustibles, Ammonia, and Freons R11, R12, R22 and R134a
Response Time: Less than 30 seconds for 85% of step change
Accuracy: ±10% of range
Repeatability: ±2.5% of range
LED Status Lights: Green - Power On
 Red - High Alarm
 Yellow - Low Alarm
 Red - Sensor Fail

Audio Indicator: 85 dB at 1 foot
Relay Outputs: Two DPDT rated 10 Amp resistive at 240 VAC / 30 VDC
Time Delays: 5 minute delay on Low Alarm
 10 minute delay on High Alarm
Field Configuration: (by DIP switch)
 - Low Relay time delay
 - High Relay time delay
 - Audible actuation on high alarm and fail or fail only
 - Relay actuation on sensor fail
 - Audible disable
Calibration: Recommended annually with appropriate calibration gases
Test Function: By internal pushbutton
Approvals: NRTL CSA C22.2-205



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 Ensure a complete understanding of all applicable Federal, State, Provincial and Local
 Health and Safety laws and regulations before using these products.

Read and understand fully all instructions before using these products

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