

# Data Sheet and Operation Instructions for model HIC-822 Gas Detector

## 1. Calibration Level and Purpose of Detection

This model HIC-822 is a general-purpose gas detector calibrated as a Carbon Monoxide emergency alarm. It is calibrated at 150 ppm of Carbon Monoxide. It will also alarm at 200ppm of Hydrogen (0.5% of LEL), 5000 ppm of Methane (10% of LEL), and 420 ppm of Propane (2% of LEL). The 150 ppm Carbon Monoxide calibration is above the level known to be a long term health hazard. However, it is not the intended purpose of this model to monitor for long term health hazards. Its purpose is to serve as an evacuation alarm.

## 2. Input Power

The unit is supplied with a 120V AC to 12V DC adapter to operate from a standard 120VAC outlet. Alternately the detector may be powered directly from 12VDC without the use of the adapter.

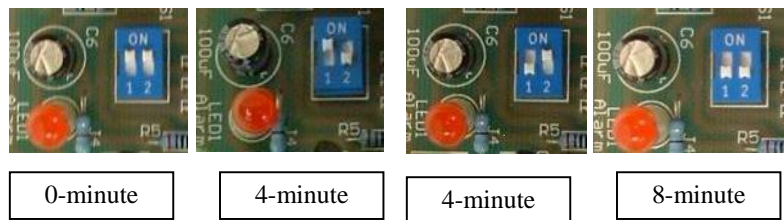
## 3. Purging (Initializing Cycle)

The detector has a 8-minute delay for purging upon application of power. During the purge the green light will flash. At the end of the purge the green light will change to steady. The purpose of this purging is to drive off contaminants on the surface of the sensing element. These contaminants can cause a false alarm. If the detector has been left without power for more than one day, contaminants can accumulate, which may require more than one purge cycle. Additional purge cycles may be activated by pressing the reset button.

## 4. Alarm Delay Setup

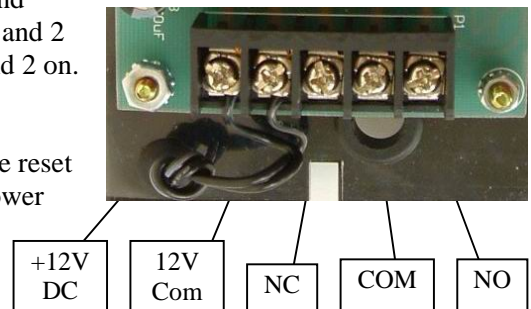
This unit has a programmable delay to activate the relay contact alarm. What this means is that if gas is detected the buzzer and LED respond immediately - the relay does not respond immediately, but only after the delay selected by the internal dipswitch.

This reduces nuisance alarms caused by short whiffs of targeted gas. The default delay for the relay contacts and buzzer is 4 minutes. It may be changed to 8 minutes by setting both 1 and 2 dip switches to off. It may be made instantaneous by setting both 1 and 2 on.



## 5. Electrical Connections

The terminal board connections looking at it with the cover off and the reset switch on the left are from left to right as follows: terminal 1 and 2 power input. Terminal 4 is the relay common and 3 is normally closed and 5 normally open. If power to the detector is interrupted the relay reverts to the alarm state.



## 6. Nose Gases

This model is very sensitive to alcohol vapor and related Hydrocarbon vapors, such as Acetone vapor, Benzene vapor, n-Hexane vapor and Iso-butane vapor. Therefore, an alarm may not indicate an actual hazard, but merely the presence of some vapors for these volatile Hydrocarbons.

## 7. Mounting Instruction

The recommended area for one detector is 400 square feet. You should be clear what gas are you trying to deal with before mounting the detector. If you are dealing with Carbon Monoxide, you should mount it close to the floor (for example, one foot above the floor) because Carbon Monoxide is heavier than air and it has a tendency to "sink" down to the floor when mixed in air. If you are dealing with Hydrogen, then you should mount the detector close to



the ceiling because Hydrogen is much lighter than air. You can apply the same rules for Methane and Propane. Methane is lighter than air and Propane is heavier than air.

**8. Recalibration**

The recommended recalibration interval is 5 years. It doesn't mean that the detector will be out of function after 5 years. It is just a safety precaution to make sure the circuitry and calibration level is still serves the intended purpose of the detector. The recalibration service can be done in our factory with a \$45.00 service fee. A traceable certificate of calibration will be issued when the recalibration service is done.

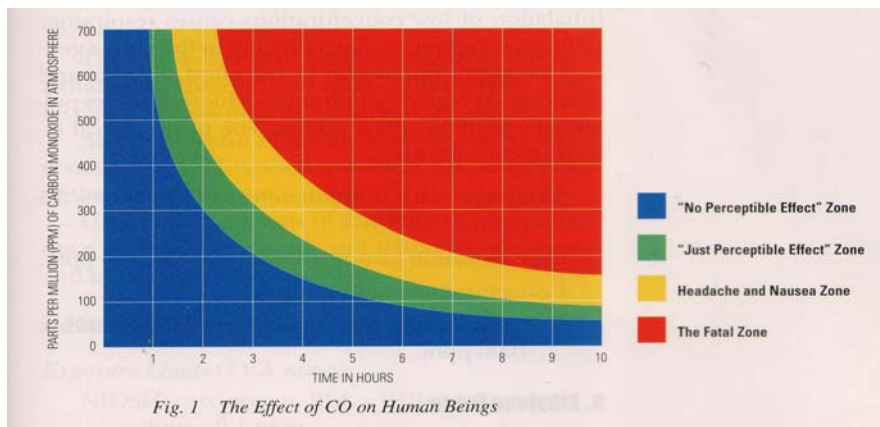
**9. Warranty and Exchange Policy**

The warranty policy for this model HIC-822 hazardous detector is ONE year parts and labor with transportation fee prepaid. For users who would actually want to use the models for specific gases, we offer an exchange at no cost to those models which have the same price as the model HIC-822. For those models which have a price difference with the HIC-822, we charge the price difference for the exchange. The following chart lists the other models for detecting specific gases.

MODEL NO.	TARGETED GAS	CALIBRATION	NOISE GASES
HIC-203	Carbon Monoxide	100 ppm of CO	None
HIC-813	Propane, Hydrogen	20% LEL of Propane (4200 ppm)	Methane
HIC-821	Hydrogen	20% LEL of Hydrogen (8000 ppm)	None
HIC-842	Methane	20% LEL of Methane	None

**10. Brief Information about CO, Hydrogen, Methane and Propane**

Carbon monoxide (CO) is a toxic, flammable, odorless, colorless gas that interferes with the delivery of oxygen in the blood to the rest of the body. It is slightly lighter than air. It is produced by the incomplete combustion of fuels. It is often being called "the silent killer". Figure 1 below shows the effect of carbon monoxide on human beings.



Hydrogen (H<sub>2</sub>) is a colorless, odorless, nonmetallic, tasteless, highly flammable diatomic gas. Many reactions may cause fire or explosion. Its relative density, compared with that of the air, is 0.0695. Hydrogen is the most flammable of all the known substances.

Methane (CH<sub>4</sub>) is most commonly known as Natural Gas. Methane is odorless and lighter than air. The main hazard is its flammable, explosive nature.

Unlike natural gas, Propane (C<sub>3</sub>H<sub>8</sub>) is heavier than air (1.5 times denser). In its raw state, Propane stays low to the ground. That means there's more potential for propane to be ignited and cause an explosion.