

Gas Leakage Detector

Gas Leakage Detector Alarm System (KHP-GLD1)

Kaihatsu Techno Centre Pvt. Ltd. is engaged in designing and development of unique hardware products. These products are used to enhance the safety and gives a better comfort.

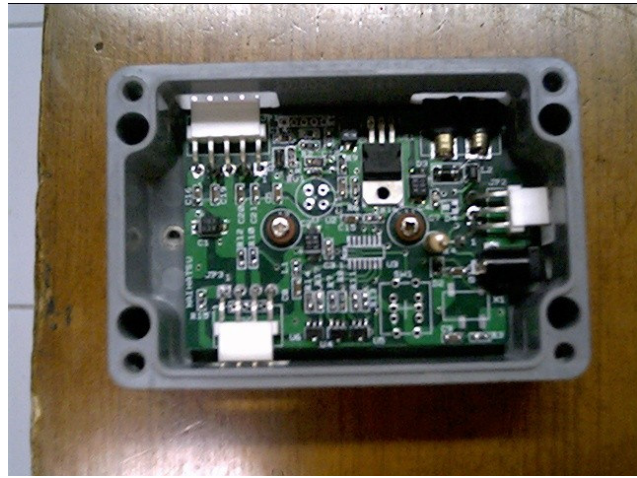
Compress Natural Gas (CNG) and Liquid Petroleum Gas (LPG) are common gas products used in Automobiles and homes. Although these products are easy, convenient and energy efficient to use, they are potentially dangerous in case if there is a leakage. These gases are hazardous and very dangerous, if these is, a spark when the leakage occurs.

The best way to prevent such kind of disaster is to detect a Gas Leakage. The Gas Leakage Detector Alarm System is a product made by Kaihatsu Techno Centre is an ideal such product. This product is ideal to be used in Automobiles and in Homes.

For every gas leaked in the air, there is a parameter called **Lower Explosive Limit**. If the Gas in the Air reaches the Lower Explosive Limit then the disaster explosion can take place in presence of any spark. Typically this limit is 20% of the air. (200,000 parts per million). Kaihatsu's Gas Leakage Detector Alarm System starts giving an early visual warning for gas leakage as low as 1% of Lower Explosive Limit. When the Gas Leakage reaches to 5%, then it gives audio alarm and cuts off the solenoid supplying the gas either to car or in house hold.

Following are the features of the Kaihatsu's Gas Leakage Detector Alarm System:

- **Full Digital Microcontroller Based:** The leakage level is detected using fully microcontroller circuit. There are no analogue adjustment resistors or potentiometers inside. Therefore there is no deterioration over the years or due to environmental effect. Accuracy of leakage level is guaranteed over the years without any adjustments.
- **Any Household & Automobile Gas:** The alarm system detects the gas level of any household or automobile gas. Methane, Butane, Propane and derivatives of these gases.
- **Full Temperature Range:** Each Gas Sensor is fit with a thermister to detect the sensor temperature. The microcontroller in turn calculates the leakage level at all the temperature. Therefore accurate results are guaranteed from -10°C to + 65°C
- **Sensor & Heater Failure Detection:** In case, if the sensor fails or if the heater inside the sensor fails then Alarm light will be on giving an indication that leakage will not be possible to be detected. This is a rare case but does not compromises for safety.
- **Early Warning Detection:** Although the actual audio alarm will be activated when the leakage reaches to 5% of Lower Explosive Limit, the Alarm light will start blinking at a speed of 1 Hz (1 second ON and 1 second OFF) when the leakage reaches 1% of Lower Explosive Limit. The blinking rate will be proportional to the leakage. This means light will blink with 2Hz for 2% leakage and so on. This will give early warning for occurrence of leakage.
- **Delayed Solenoid Cut Off:** After the Audio Alarm, the gas supply solenoid will be activated after 2.5 minutes. This will give enough time for a running automobile to park safely by the side avoiding collisions by sudden gas cut off.
- **Plug & Play Second Sensor:** In case, if application needs second sensor, e.g. in automobile one sensor in main unit in engine and other sensor near gas tank in dickey or in case of home main unit in kitchen and other sensor in a storage room where gas cylinders are stored, additional sensor can be plugged in as a plug and play device. No configuration or adjustments are needed. Even the second sensor has separate thermister for temperature detection as well as sensor and heater failure detection system.
- **Same Design for Home & Automobile:** The same product can be converted from home use to automobile use without any change.
- **Robust Power Supply:** The design has built in power supply, which can take the voltage swing from 9V DC to 18V DC. This will cover the full range of car battery range.
- **Fire Retardant Wires:** All connection wires are fire retardant grade for automobile use..
- **Easy Mounting:** Industrial Standard mechanical mounting on IP 65 box



Technical Specifications:

- **Supply Voltage** : 9 V DC to 18 V DC. (Full Car Battery Range)
90 V to 270 V AC SMPS Eliminator is optional for House hold units.
- **Supply Current** : 75 mA during detection 150 mA during alarm & solenoid activation.
- **Working Temperature** : -10°C to + 65°C
- **Gases Detected** : Compressed Natural Gas (CNG) and Liquid Petroleum Gas (LPG)
Methane, Butane, Propane and derivatives of these gases.
- **Detection Level** : Lower Explosive Limit of these gases is 20% in air. 200,000 ppm
Detection occurs from 1% to 5% of Lower Explosive Limit. Alarm light flashes at a rate proportionate to leakage level.
- **Alarm Level** : 5% of Lower Explosive Limit
- **Gas Cut Off** : Gas Solenoid is activated after 2.5 minutes of Alarm
- **Stabilising Time** : 2.5 minutes after power on
- **Solenoid Contact** : Normally Open, connected to earth during alarm condition.
Maximum current 750 mA DC
- **Isolation Voltage** : 3,000 Volts
- **System Components** : Main Unit with sensor. Dash board unit with Buzzer, Alarm & Power LED.
Connecting wire between two units. Battery cord, Spare Fuse & user manual.
Second sensor unit, Connecting Wire & Mains eliminator to use the unit as household unit is optional
- **Mechanical** : Main Unit: 75mm (W) X 110 mm (L) X 56 mm (H)
Dash Board Unit: 50 mm (W) X 52 mm (L) X 35 mm (H)
Second Sensor Unit 25 mm (W) X 54 mm (L) X 2 mm (H)
Battery & Solenoid Wire length: 1.5 meters
Wire length between main unit & Dash board Unit: 0.5 meters
Wire length for second Sensor Unit: 4.5 meters



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