

Title- LPG Gas indicator and safety device

As 90% of Indian household uses LPG cylinder it is very important to ensure the safety of all this households. Liquefied petroleum gas (LPG or LP gas) is a fuel gas which contains a flammable mixture of hydrocarbon gases, specifically propane, propylene, butylene, isobutane, and n-butane.

According to a study in 2021-22, LPG consumption constituted about 13 percent of total petroleum product consumption. About 90% of LPG was consumed by households, 8% by industrial users and 2% by vehicles.

The LPG cylinder has a ratio for the gases inside it that is 35:65 propane: butane And it has particle size of 1000 to 600 ppm.

There are various risks while using any LPG cylinder like leakage, unstable or irregular ratio of gases inside the cylinder.

When we don't use the LPG cylinder for a longer duration of time the gases inside the LPG cylinder gets into unstable ratio which is very dangerous as it leaves us with a risk of explosion so to manage these risks or to avoid any accident from this risk this **LPG Gas indicator and safety device** will help.

- **OBJECTIVES:**

1. Detect the level of each gas inside the lpg cylinder and display.
2. warn when the gases inside the cylinder are in unstable ratio.
3. warn when cylinder is near empty.
4. warn of any leakage.
5. It will also send a signal to your phone.

- **KEY POINTS:**

This device provides you with many safety measures which will help you use the LPG cylinder without worry and more freely.

The following are the parameters and safety measures provided by our device.

1. **Detection of level** -> it will detect the level of each gas inside the LPG cylinder
2. **Warning of unstable ratio**-> when the gases inside the LPG cylinder gets into an unstable ratio than the natural one fixed by state run oil companies and will send a signal to the user about it.
3. **Warn about level of gas**-> it will warn us about the level of gas inside the cylinder and tell us when it will be near empty
4. **Warn about leakage**-> it will warn us about any leakage in the gas cylinder and will send a signal to the owner phone.
5. **Display**-> all the levels of gases, the ratio, the level of gas in cylinder all this will be displayed on the display interface of the device

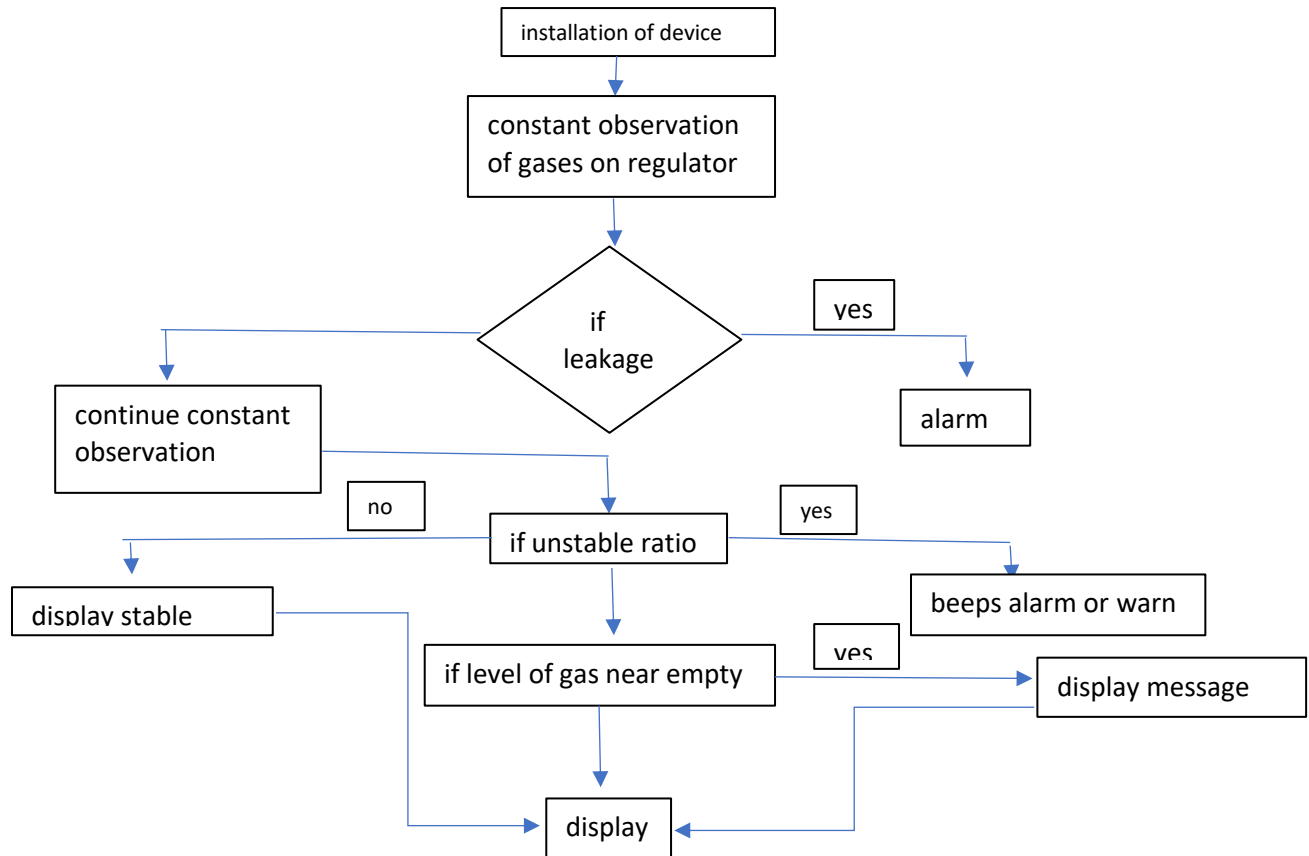
Devices required:

1. Gas sensor
2. Display panel
3. ALU to calculate ratio and level in percentage
4. Battery
5. RFID system

Method:

1. Place the device on the gas regulator of LPG cylinder
2. It will monitor the gas on the regulator
3. It will do all its function on regulator only
4. Display all the observed information on its display panel
5. If any irregularity mentioned in objective are observed, it will send a signal via RFID system to the user

flowchart



Conclusion

As in 90% of Indian household LPG cylinders are used, this device will ensure the safety of those 90% household by detecting the irregularity or the problems we mentioned which occur while using an LPG cylinder and will display all the

information on its display panel. This sums all the functions of the LPG Gas indicator and safety device