

The diagram illustrates a Gas Leakage Monitoring and Alerting System. It features an Arduino Uno (U2) microcontroller connected to an LCD 16x2 (U1) for data display. The Arduino is also connected to a gas sensor (GAS1) to detect gas leaks. When a leak is detected, the system triggers a relay (R1) which controls a motor (M1) and a buzzer for alerting. The circuit is powered by a 5V supply (U2_5V) and ground (U2_GND). The components are connected as follows:

- Arduino Uno (U2):**
 - VCC to 5V
 - GND to GND
 - D0 to D7 to LCD D0 to D7
 - TX to D2
 - RX to D3
 - AREF to AREF
 - SDA to A4
 - SCL to A5
- LCD 16x2 (U1):**
 - VDD to 5V
 - LED+ to 5V
 - LED- to GND
 - RST to D4
 - GND to GND
- Gas Sensor (GAS1):**
 - VCC to 5V
 - GND to GND
 - AO to D0
- Relay (R1):**
 - Control pin to D0
 - Common pin to Motor (M1)
 - Normally Closed (NC) pin to Buzzer
 - Normally Open (NO) pin to GND
- Motor (M1):**
 - Connected to the relay's common pin.
- Buzzer:**
 - Connected to the relay's NC pin.

The circuit is powered by a 5V supply (U2_5V) and ground (U2_GND). The components are connected as follows:

- 5V Supply (U2_5V):** Connected to VCC of Arduino, VDD of LCD, LED+ of LCD, and VCC of Gas Sensor.
- Ground (U2_GND):** Connected to GND of Arduino, LED- of LCD, GND of Gas Sensor, and the common pin of the relay.

The system is designed to monitor for gas leaks and alert the user via a buzzer and motor when a leak is detected.