The **MQ-139** gas sensor is designed to detect **Freon gases**, commonly used as refrigerants in air conditioning and refrigeration systems. It is sensitive to various Freon compounds, including **R11, R22, R113, R134A, R409A, and R410A**.

Key Features:

- **High Sensitivity:** The MQ-139 offers high sensitivity to Freon gases, allowing for effective detection of gas leaks.
- **Dual Output Modes:** It provides both **analog** and **TTL level** outputs, facilitating integration with various microcontrollers and systems.
- **Fast Response and Recovery:** The sensor exhibits quick response times to the presence of target gases and rapidly returns to baseline levels when the gas is no longer present.
- **Stability and Durability:** Designed for long-term use, the MQ-139 maintains reliable performance over time.

Gases Detected by MQ-139 Sensor

Gas Detected	Detection Sensitivity
R11 (Trichlorofluoromethane)	High
R22 (Chlorodifluoromethane)	High
R134A (Tetrafluoroethane)	High
R113 (Trichlorotrifluoroethane)	Moderate
R409A (Hydrochlorofluorocarbon blend)	Moderate
R410A (Hydrofluorocarbon blend)	Moderate

Operating Principle:

The MQ-139 operates on the principle of a **heated metal oxide semiconductor**. When Freon gases come into contact with the sensor's heated surface, a chemical reaction occurs, leading to a change in the sensor's electrical resistance. This change is then converted into an electrical signal, which can be measured and analyzed.

Applications:

- **Freon Gas Detectors:** Utilized in devices designed to detect leaks of Freon gases in various settings.
- **Refrigeration Units:** Integrated into systems to monitor and ensure the safe operation of refrigeration equipment.
- **Air Conditioning Systems:** Used to detect and prevent Freon gas leaks in HVAC systems.

Technical Specifications:

- **Detection Range:** 10 to 1000 ppm
- **Operating Voltage:** 5V DC
- **Dimensions:** Approximately 32mm x 22mm x 27mm

Summary of MQ-139 Gas Sensor

The **MQ-139** gas sensor is designed for detecting **Freon gases** used in refrigeration and air conditioning systems.The sensor operates using **a metal oxide semiconductor** that changes resistance when exposed to target gases, producing an electrical signal that corresponds to gas concentration.

MQ139 Freon Halogen Gas Sensor Module

A simple way to use MQ-139 with Arduino UNO