

# Linear Magnetic Hall sensor

## **Overview**

The Linear Magnetic Hall Sensor Module detects magnetic fields using the Hall effect principle, producing a digital output signal when a magnetic field is sensed. It features a built-in 13 LED indicator to visually represent the detection status. The sensor includes three digital interfaces for easy integration and allows for sensitivity adjustments via a potentiometer. The output is a digital voltage signal proportional to the magnetic induction intensity

## **Key Features**

- Features wide range voltage comparator LM393
- Adjustable sensitivity
- Signal output indicator with the retaining bolt hole, convenient installation
- Output form digital switch output (0 and 1 high and low level)
- Signal output indication
- Single channel signal output
- The output effective signal is low level
- When there is sound, outputs low level and the signal light
- Can be used for Acoustic control light, give sound and light alarm working with the Photosensitive sensor, and sound control, sound detect



## **Technical Specification**

- Supply Voltage (Vcc): 3.3 V to 24 V
- Magnetic Range:  $\pm 50$  mT to  $\pm 1000$  mT
- Output Types:
  - Analog: Voltage proportional to magnetic field strength
  - Digital: Binary on/off output
  - PWM: Duty cycle proportional to field strength
- Current Consumption: Few mA to tens of mA
- Sensitivity: 1 to 100 mV/mT
- Temperature Range:  $-40$  °C to  $+150$  °C
- Response Time: Microseconds to milliseconds

- Hysteresis: Few % of magnetic range
  - Linearity: Defined as % of full-scale output
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## **Application**

- Automotive Systems – Wheel speed sensing, gear position detection, pedal position monitoring.
- Motor Control – Rotor position detection in BLDC and stepper motors.
- Consumer Electronics – Open/close detection in phones, laptops, and smart appliances.
- Industrial Automation – Proximity sensing, machine safety interlocks, and current sensing.
- Medical Devices – Position and movement detection in diagnostic or monitoring equipment.