

What is the function of the magnetic Singapore module



Article Overview

The magnetic Singapore module operates by detecting magnetic fields using a magnetoresistive sensor, converting changes in magnetic flux into electrical signals, and processing them to determine orientation or position.

Core Working Principle

The module typically uses a magnetoresistive sensor, such as the HMC5883L, which contains a nickel-iron (Ni-Fe) magnetic film arranged in a bridge circuit. When exposed to a magnetic field, the electrical resistance of the Ni-Fe material changes proportionally to the field strength. This resistance variation produces a voltage difference across the bridge, which is then measured and processed to determine the direction and magnitude of the magnetic field in three axes (X, Y, Z) (ElectronicWings) .

Signal Processing and Output

The module integrates an amplifier, automatic demagnetization driver, deviation calibration, and a 12-bit A/D converter to maintain high precision, typically within 1° – 2° for compass applications (SunFounder) . The X and Y components of the Earth's magnetic field are primarily used to calculate the azimuth angle, which represents the compass direction relative to magnetic north. The module outputs this information digitally via interfaces such as I2C, allowing integration with microcontrollers and navigation systems....

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How to Use Magnetic Module: Examples, Pinouts, and Specs

It is commonly used in applications requiring magnetic field detection, proximity sensing, or motion control. This module is widely

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Thus it requires electronic foundation and hands-on capability for there is a certain difficulty. Please think

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Magnetic Modules

Magnetic modules, also known as magnetic separation devices or magnetic bead modules, are integrated components in automated

KY-021 Reed Switch Module (Magnetic Switch)

Commonly used together with a magnet as a proximity sensor, this module detects the presence of a nearby magnetic field. Note

Magnetic Sensors: Common Types, Key Components, Parameters,

Magnetic position sensors and magnetic angle encoders are used in a variety of applications across several industries. This page

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Detachable Magnetic Modules for Modular Product Design

A magnetic module can be placed by hand, pulled away when needed, and reattached without visible fasteners. This

P6-5 Learning Site

Pupils will be able to: · State that magnets come in different shapes and size · State that magnets are made of iron or steel · State

Arduino Hands-on --

Due to the presence of a magnetic field around a current-carrying conductor, which is directly proportional to the

Electrical Power Engineering | Singapore Institute of Technology

Teaching Module: EPE2301 Electrical and Magnetic Systems Prof Barrie Mecrow has been a member of the Power

Magnetic Sensors for Sensor Modules

Position sensor modules are in widespread use across industrial and automotive systems to monitor movement or position. These

Arduino Hall Effect Sensor KY-003 — Pinout, Wiring & Code

KY-003 hall effect sensor module for Arduino (A3144): pinout, wiring, code, an RPM project, magnet-polarity tips, and

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Seatory S series Magnetic Stripe Card encoding module is suitable for Seatory S series Card printers. It is simple to operate, and can

Importance of Magnetic Modules

Magnetic modules offer great performance by transforming between magnetism and electricity in wind turbine

Arduino Hall Effect Sensor KY-003 — Pinout, Wiring & Code

It produces a clean digital output — the signal pin goes LOW when a magnet's south pole faces the marked side of

Contact Us

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