



BMM150

# BMM150 Magnetometer Module

*Compact 3-axis digital magnetometer for orientation sensing and navigation applications*

v1.0

2025-07-16

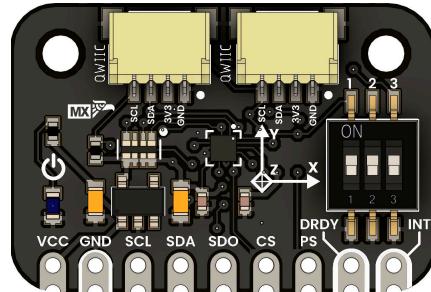
Rev. A

## PRODUCT OVERVIEW

The BMM150 is a compact, ultra-low-power 3-axis digital magnetometer designed for accurate orientation sensing, electronic compass applications, and inertial navigation. Its versatile I<sup>2</sup>C and SPI interfaces ensure easy integration with popular platforms such as Arduino, ESP32, and Raspberry Pi. Based on Bosch Sensortec's advanced technology, the BMM150 provides high precision and low power consumption, making it ideal for wearable devices, drones, and robotics.

## PRODUCT VIEWS

### TOP VIEW



*Component placement and connectors*

# KEY TECHNICAL SPECIFICATIONS

## POWER SUPPLY

Operating Voltage:	<b>1.8V to 3.6V</b>
Typical Current Consumption:	<b>170 µA during normal mode</b>
Standby Current:	<b>Below 1 µA to minimize battery drain and enhance energy efficiency</b>

## CONNECTIVITY

Interfaces:	<b>I<sup>2</sup>C and SPI (hardware selectable)</b>
Connector:	<b>Qwiic + Pin Headers</b>

## PIN CONFIGURATION

PIN	NAME	DESCRIPTION
1	VCC	3.3V supply input
2	GND	Ground
3	SDA/MOSI	I <sup>2</sup> C data / SPI MOSI
4	SCL/SCK	I <sup>2</sup> C clock / SPI clock
5	CSB	SPI chip select (active low)

## COMMUNICATION INTERFACES

INTERFACE	SIGNALS / PINS	TYPICAL USE
Power	VCC, GND	Power supply
I <sup>2</sup> C	SDA, SCL	Communication with MCU

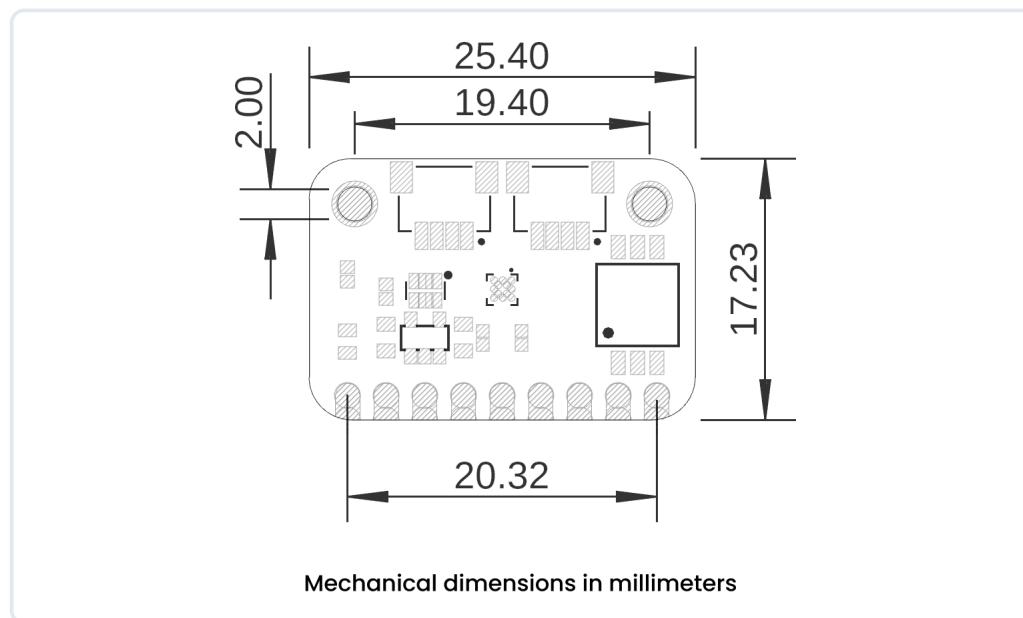
## TYPICAL APPLICATIONS

Electronic compass	Augmented reality (AR) and virtual reality (VR)	Robotics and drones (UAV)
Navigation systems (GNSS enhancement)	Wearable tracking devices	

## VISUAL DOCUMENTATION

## PRIMARY TECHNICAL DOCUMENTATION

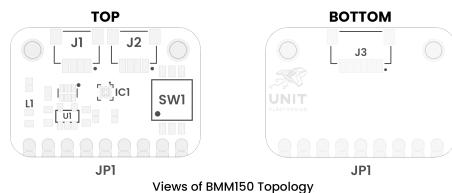
## MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

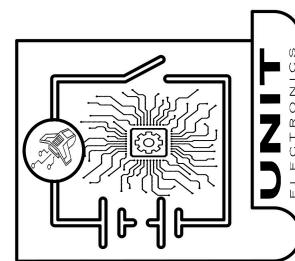
## SUPPLEMENTARY TECHNICAL DOCUMENTATION

## SYSTEM TOPOLOGY



Connection topology and system integration

## CIRCUIT SCHEMATIC



Detailed circuit schematic diagram

View Complete Schematic PDF

## USAGE

Compatible with:

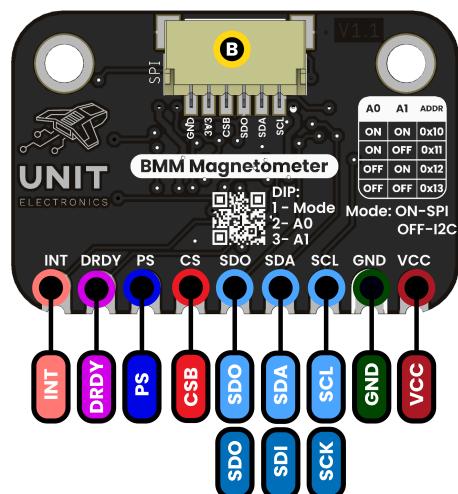
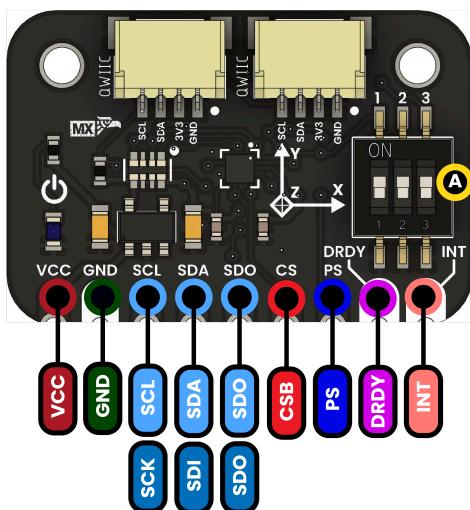
- ESP32
- [Buy from UNIT Electronics](#)

## DOWNLOADS

## PIN CONFIGURATION & LAYOUT

*Detailed pin assignment and connector layout*

# BMM150 Magnetometer



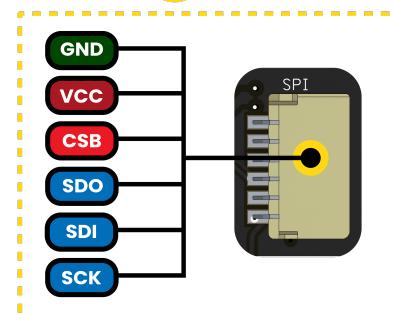
### A Dip Switch

DIP:  
1 - Mode  
2 - A0  
3 - A1

Mode:  
ON-SPI  
OFF-I2C

A0 A1 ADDR		
ON	ON	0x10
ON	OFF	0x11
OFF	ON	0x12
OFF	OFF	0x13

### B JST



## Description:

Supply Voltage

I2C

GND

SPI

Components

Protocol select

Chip select

Interrupt

Data ready

Complete pin configuration diagram showing all connectors, pin assignments, and electrical connections for proper integration

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**BMM150 v1.0**  
**Professional Technical Datasheet** Date: 2025-07-16  
For commercial distribution