



**Eval Kit Manual**

# **AS5200L**

**Adapter Board**

**AS5200L-MF\_EK\_AB**

## Content Guide

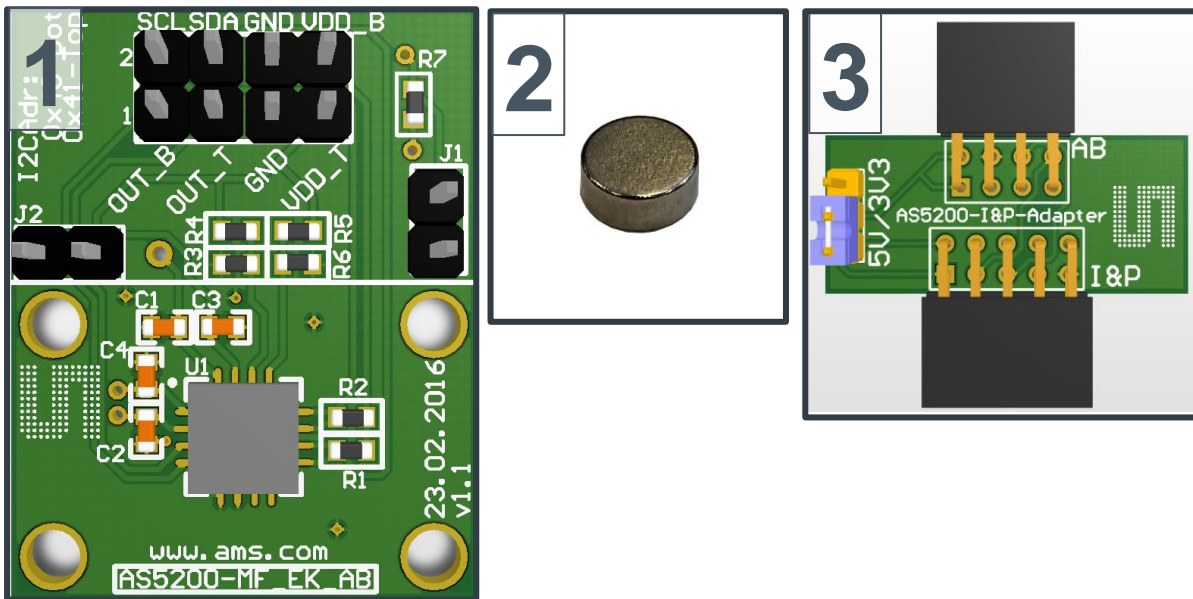
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## 1 Introduction

The AS5200L adapter board is a small PCB allowing simple and quick testing or evaluation of the AS5200L magnetic position sensor without the need to build a test fixture or design an own PCB.

### 1.1 Kit Content

Figure 1: Kit content



Pos.	Item	Comment
1	AS5200L-MF_EK_AB	Adapter board
2	AS5000-MD6H-2	Diametric Magnet, D6x2.5mm, NdFeB, Bomatec AG
3	AS5200L-I&P-Adapter	Adapter PCB to connect easily with the <a href="#">USB I&amp;P Box</a>

## 2 Board description

The PCB can be connected either to an external microcontroller, or to the USB I&P Box which is available on our webpage. ([USB I&P Box](#))

P1 is populated with a 2x4 90 degree pin header and is required for power supply (Top- and Bottom Die) as well as I2C (SCL, SDA) and PWM(OUTB, OUTT).

The connector J1 allows to select between 5V or 3.3V operation for the Bottom Die (Open=5V/Closed=3.3V)

The connector J2 allows to select between 5V or 3.3V operation for the Top Die (Open=5V/Closed=3.3V)

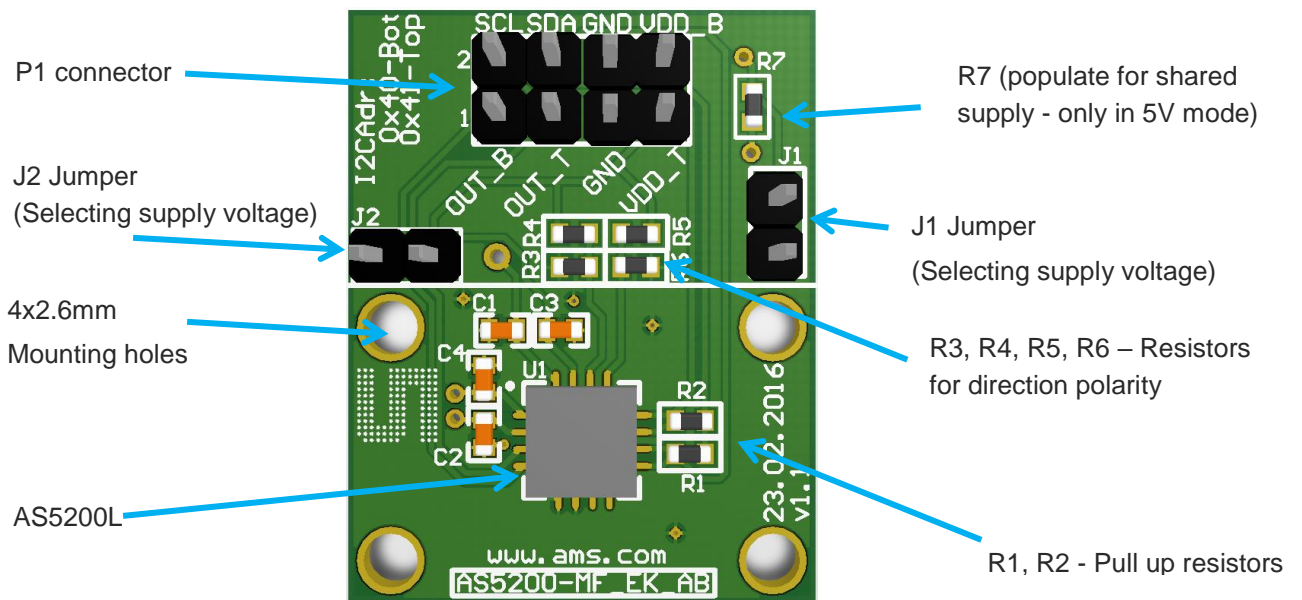
R1 and R2 are the pull-up resistors for SCL and SDA line.

C1-C4 are decoupling capacitors.

If R7 is populated with a 0R (0603 package) resistor, the supply of top and bottom can be shared. This is only recommended in 5V use (J1 and J2 open)

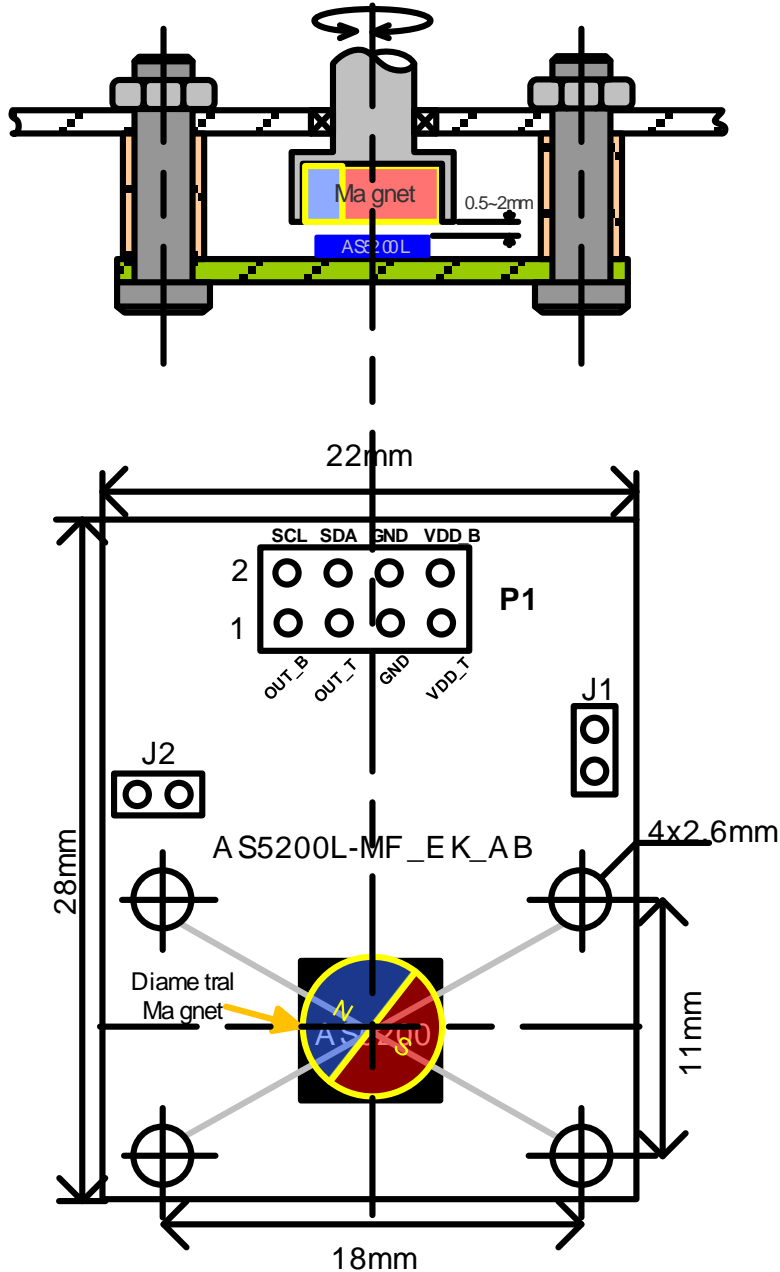
R3, R4, R5 & R6 are used for the direction polarity. Populate R3 for increasing value in clockwise direction at Bottom, R4 for counterclockwise. Populate R6 for increasing value in clockwise direction at Top Die, R5 for counterclockwise.

**Figure 2: AS5200L adapter board**



## 2.1 Mounting the AS5200L adapter board

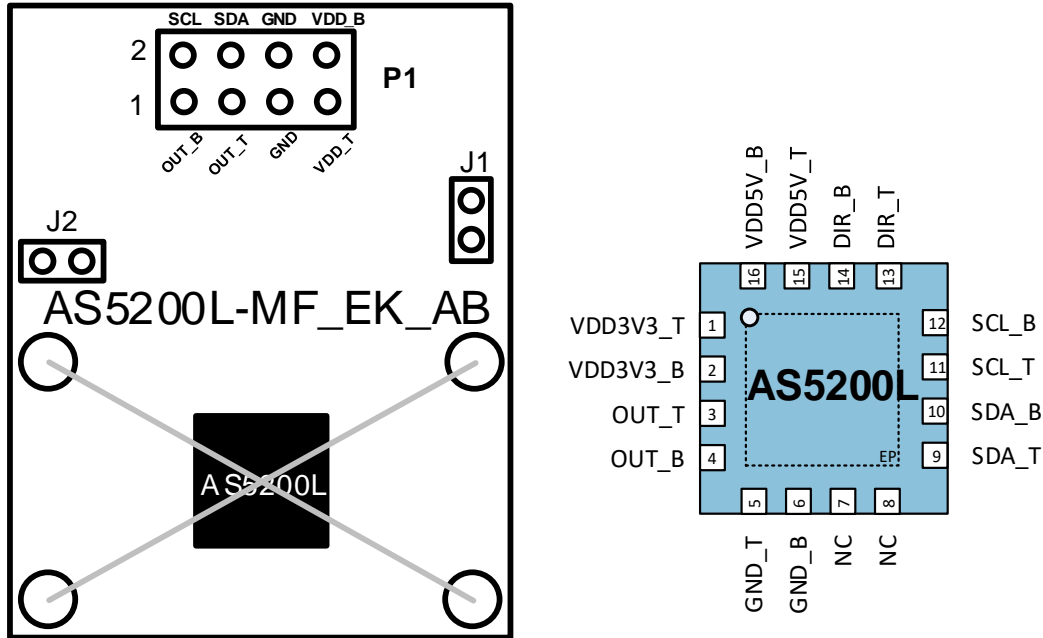
Figure 3: Mounting and dimensions



A 6x2.5mm diametric magnet must be placed over or under the AS5200L sensor, and should be centered on the middle of the package. The airgap between the magnet surface and the package should be maintained in the range 0.5mm to 3mm. The magnet holder must not be ferromagnetic. Materials as brass, copper, aluminum, stainless steel are the best choices to make this part.

### 3 AS5200L adapter board and pinout

Figure 4: AS5200L adapter board and sensor pinout



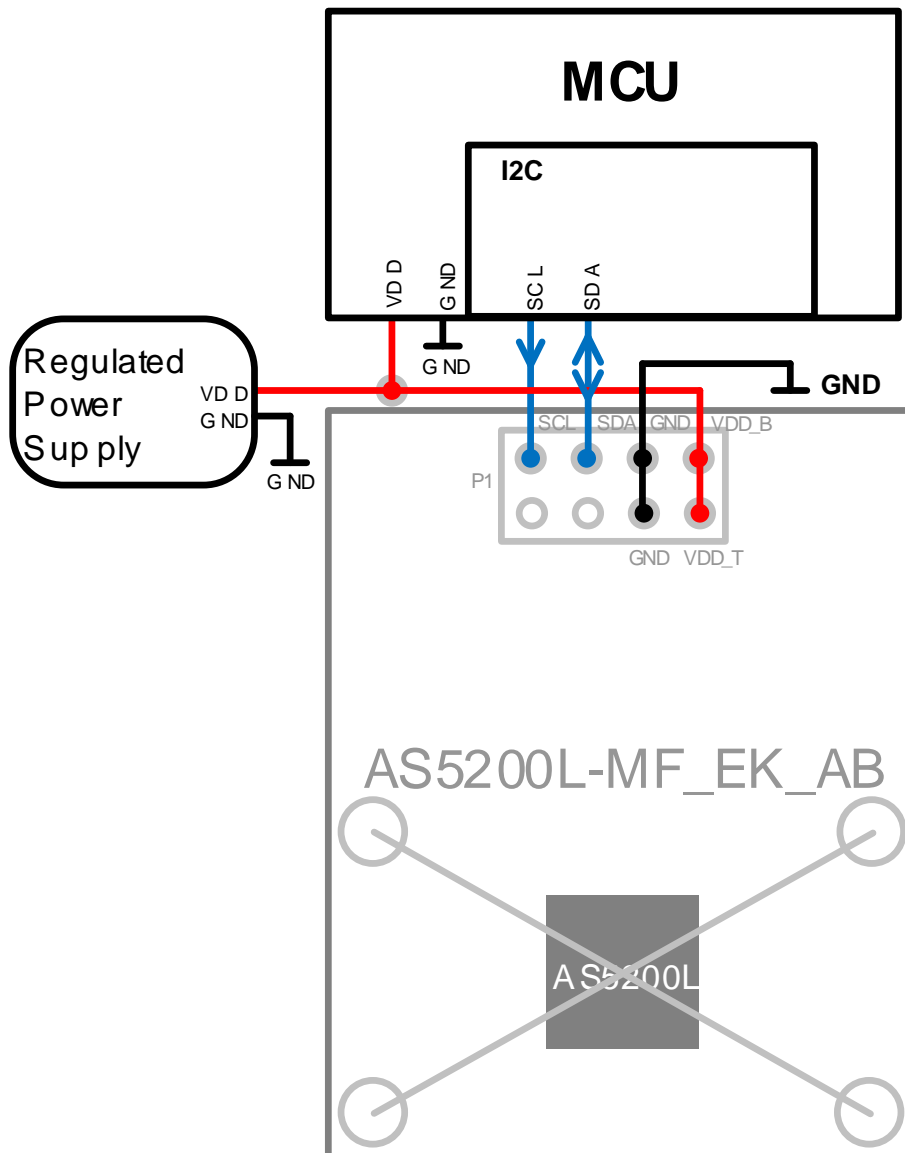
Pin# Board	Pin# AS5200	Symbol board	Type	Description
P1 - 1	4	OUT_B	Digital output	PWM output (Bottom die)
P1 - 2	11/12	SCL	Digital input	I <sup>2</sup> C Clock (shared for Top and Bottom die)
P1 - 3	3	OUT_T	Digital output	PWM output (Top die)
P1 - 4	9/10	SDA	Digital input/output	I <sup>2</sup> C Data (shared for Top and Bottom die)
P1 - 5	5/6	GND	Power supply	Ground
P1 - 6	5/6	GND	Power supply	Ground
P1 - 7	15	VDD_T	Power supply	Positive voltage supply top (5V / 3,3V mode)
P1 - 8	16	VDD_B	Power supply	Positive voltage supply bottom (5V / 3,3V mode)

## 4 Operation case

### 4.1 I2C Mode

The AS5200L adapter board can be directly connected to an industry standard I2C port of a microcontroller. The minimum connection requirements for bidirectional communication between the microcontroller and the AS5200L is VDD, GND, SCL and SDA. The slave address of the bottom die is 0x40. Top die address is 0x41.

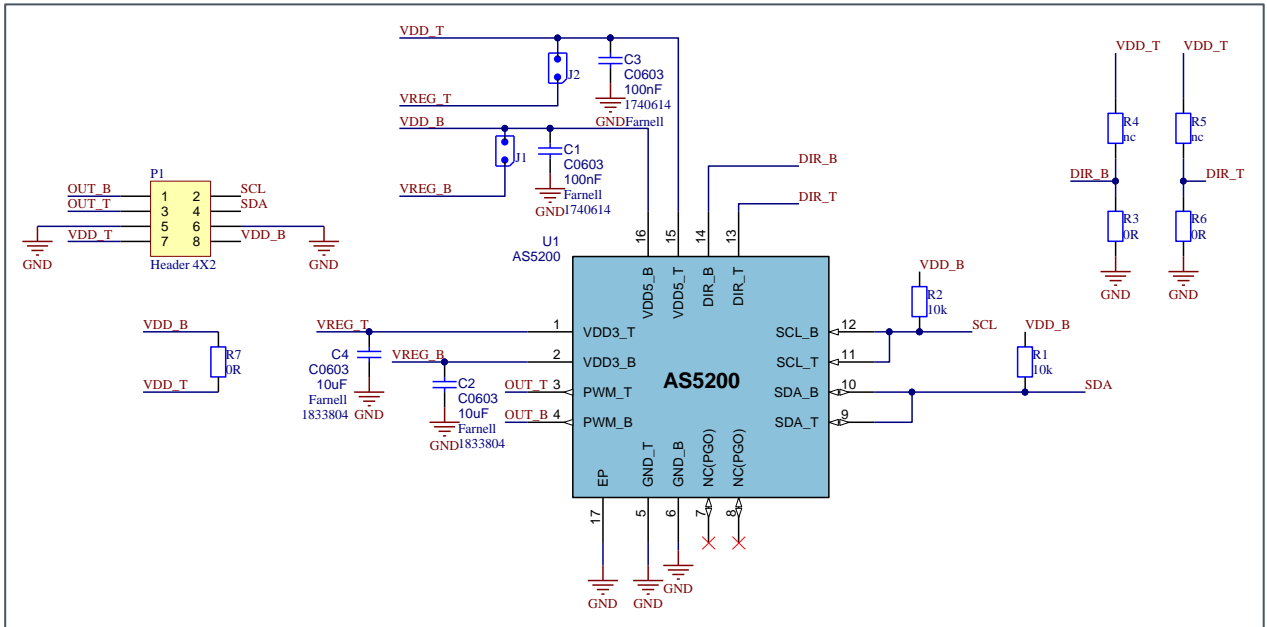
Figure 5: I2C Mode



## 5 AS5200L-MF\_EK\_AB Hardware

### 5.1 AS5200L-MF\_EK\_AB schematics

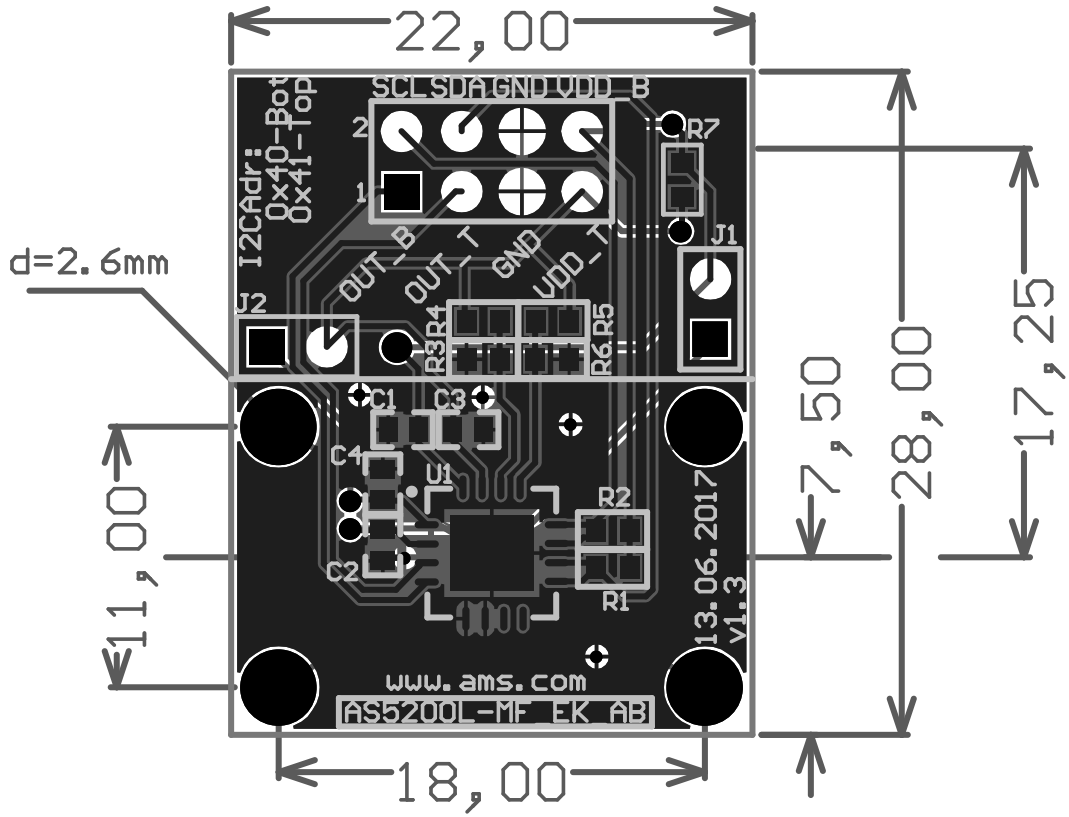
Figure 6: AS5200L-MF\_EK\_AB schematics





## 5.2 AS5200L-MF\_EK\_AB PCB layout

Figure 7: AS5200L-MF\_EK\_AB PCB layout



## 6 Ordering & Contact Information

Ordering Code	Description
AS5200L-MF_EK_AB	AS5200L Eval Kit Adapter Board

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## 8 Revision Information

Changes from previous version to current revision 1-01 (2017-Jun-27)	Page
Initial version 1-00	
Changes in V1-01: Name corrections	

**Note:** Page numbers for the previous version may differ from page numbers in the current revision.  
Correction of typographical errors is not explicitly mentioned.

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