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**Eval Kit Manual**

# **AS5172B**

## **Adapter Board**

**AS5172B-TS\_EK\_AB**

## Content Guide

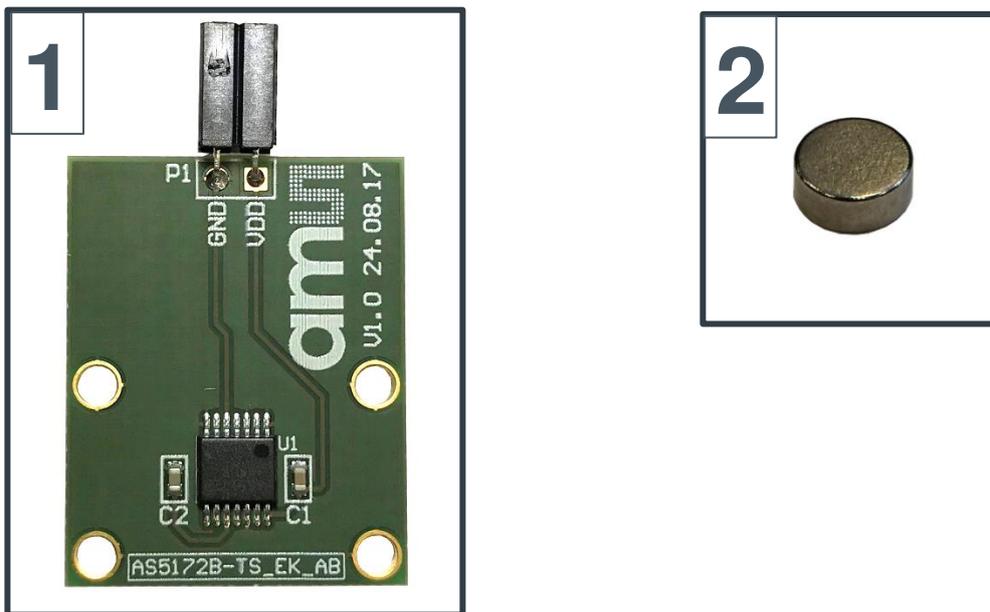
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## 1 Introduction

The AS5172B adapter board is a small PCB allowing simple and quick testing or evaluation of the AS5172B magnetic position sensor without the need to design and manufacture an own PCB.

### 1.1 Kit Content

Figure 1: Kit content



Pos.	Item	Comment
1	AS5172B-TS_EK_AB	Adapter board
2	AS5000-MD8H-1	Diametric Magnet, D8x2.5mm, NdFeB, Bomatec AG

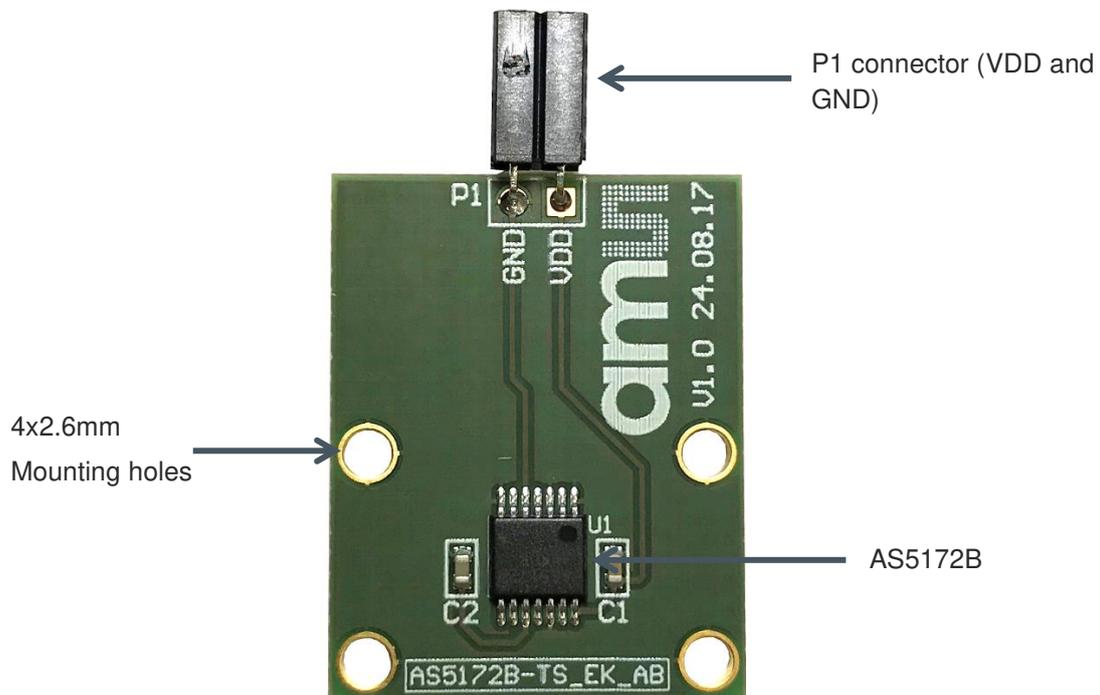
## 2 Board description

The PCB can be connected to an external programmer or to the AS5172 PSI5 Programming Board, which can be used in combination with the AS5172 Software GUI provided by ams.

P1 is populated with a 1x2 female pin header it is required for the power supply (VDD and GND) and programming interface. (UART-over-PSI5).

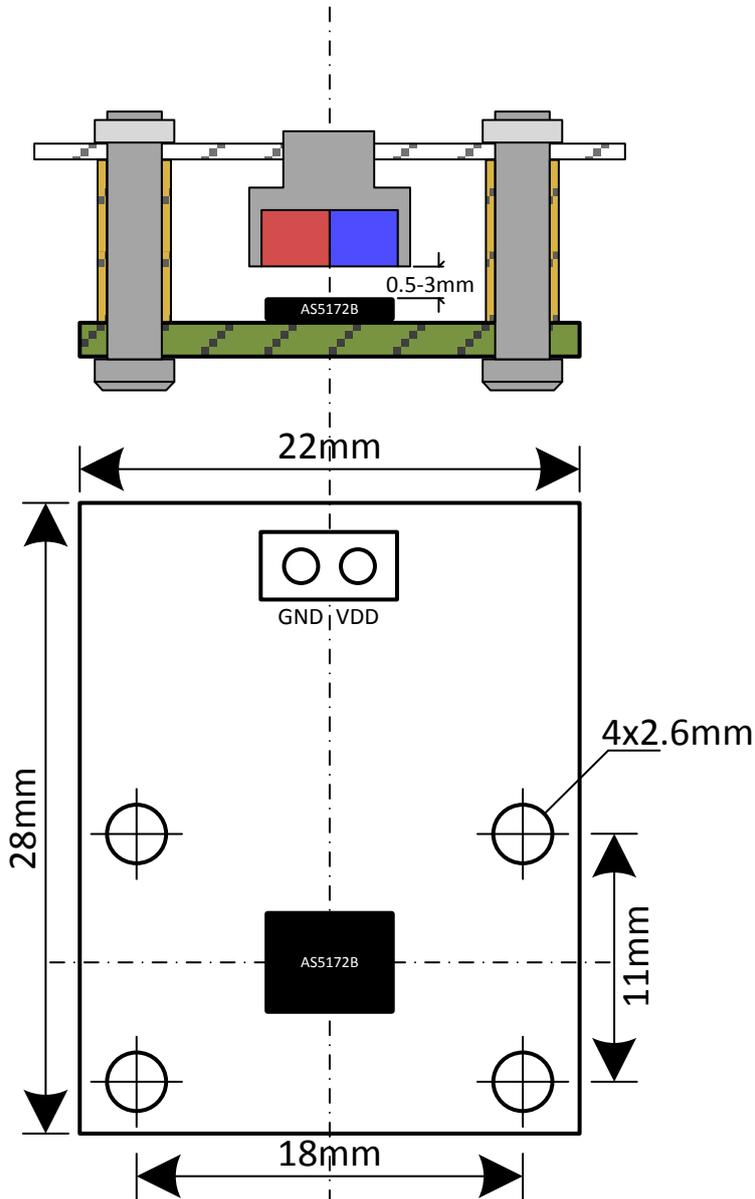
All necessary external components C1 (VDD-GND) and C2 (VDD3V3-GND) are already populated to the PCB.

Figure 2: AS5172B adapter board



## 2.1 Mounting the AS5172B adapter board

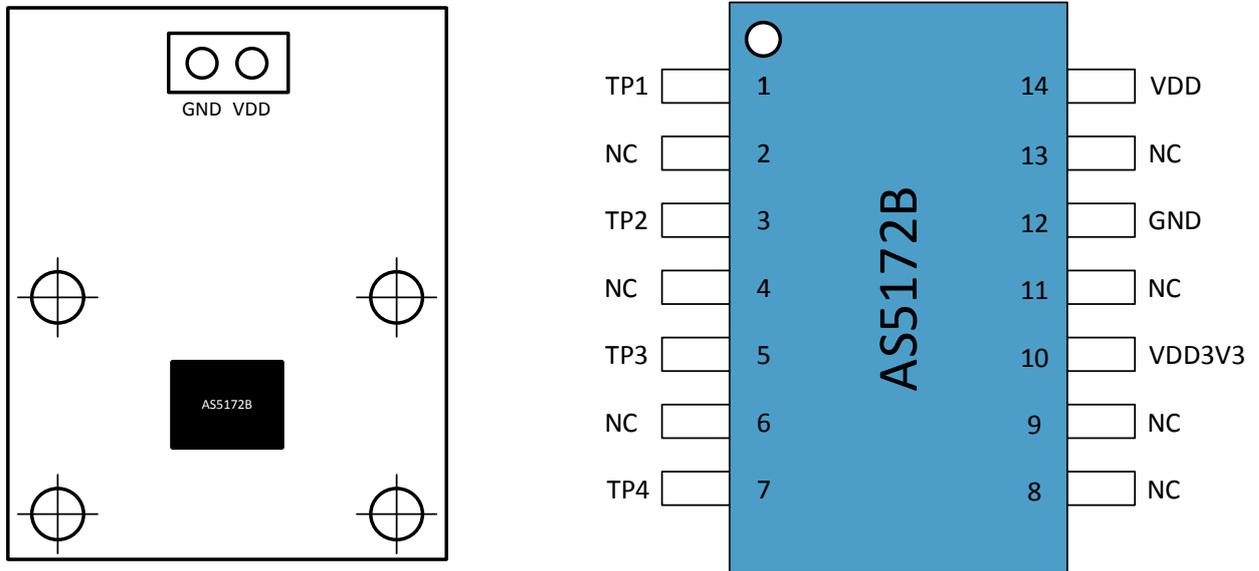
Figure 3: Mounting and dimensions



A 8x2.5mm diametric magnet must be placed over or under the AS5172B sensor, and should be centered in the middle of the package with a tolerance of 0.5mm. 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 AS5172B adapter board and pinout

Figure 4: AS5172B adapter board and sensor pinout



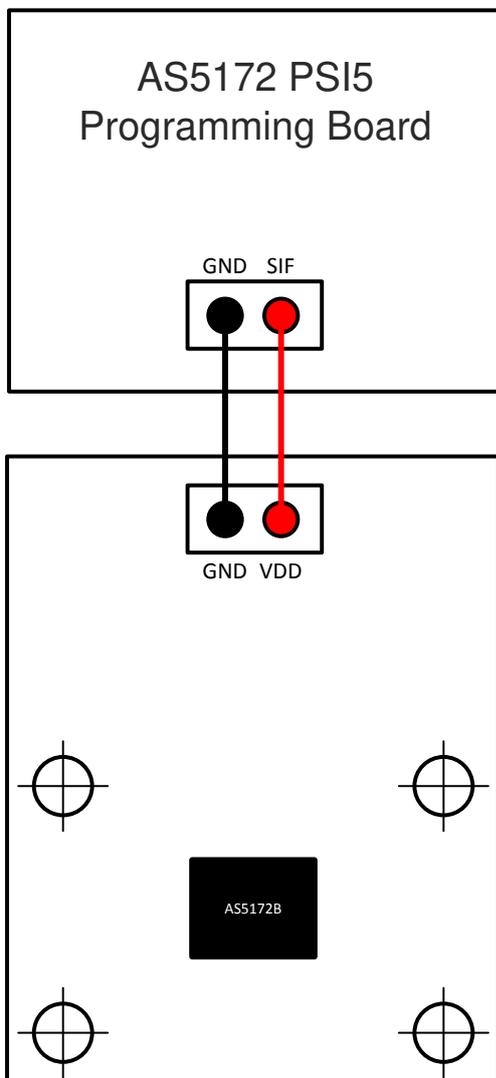
Pin# Board	Pin# AS5172B	Symbol board	Type	Description
P1 - 1	14	VDD	Power supply	Positive supply voltage (UART-over-PSI5)
P1 - 2	12	GND	Power supply	Ground

## 4 Operation case

### 4.1 Connection to AS5172 PSI5 Programming Board

The AS5172B adapter board can be directly connected to the AS5172 PSI5 Programming Board using only two lines (VDD, GND). The voltage supply is coming directly from the programmer which need to be supplied with 12V externally. The UART-over-PSI5 communication is taking place over the VDD line.

**Figure 5: UART-over-PSI5 communication with AS5172 PSI5 Programming Board**

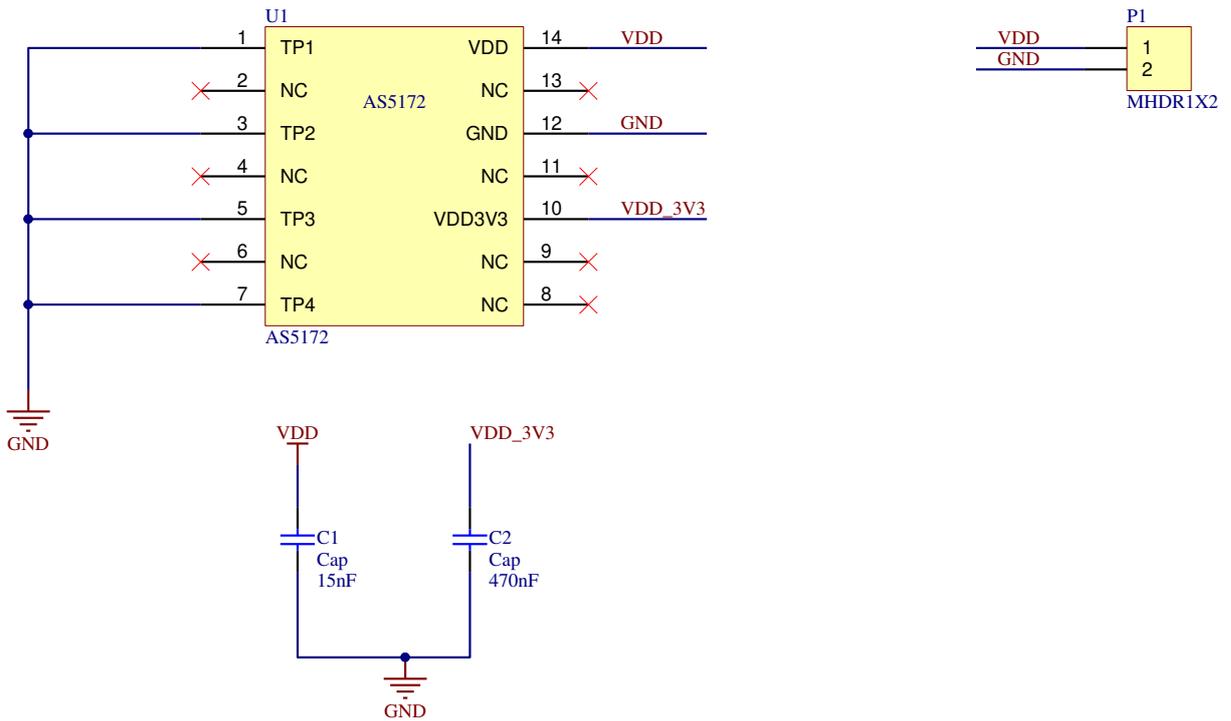


## 5 AS5172B-TS\_EK\_AB Hardware

### 5.1 AS5172B-TS\_EK\_AB schematics

The PCB schematic is shown in Figure 6: Schematics.

Figure 6: Schematics



## 5.2 AS5172B-TS\_EK\_AB PCB layout

The PCB layout is shown in Figure 7: Top Layer and Figure 8: Bottom Layer.

Figure 7: Top Layer

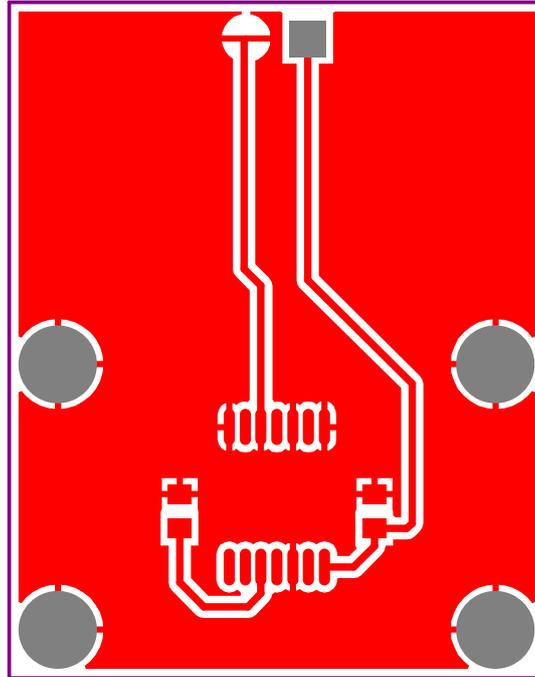
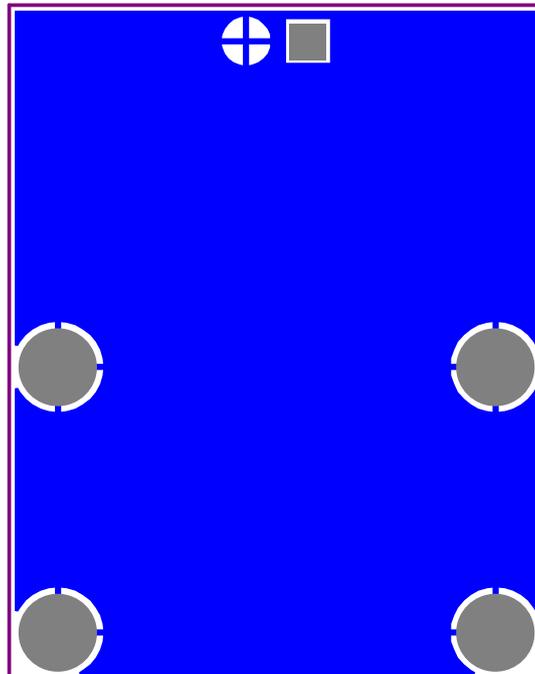


Figure 8: Bottom Layer



## 6 Ordering & Contact Information

Ordering Code	Description
AS5172B-TS_EK_AB	AS5172B Eval Kit Adapter Board

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## 8 Revision Information

Changes from previous version to current revision 1-10 (2017-Oct-16)	Page
Initial version 1-00	

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