



## Eval Kit Manual

# AS5600L

## Adapter Board

AS5600L-WL\_EK\_AB

## Content Guide

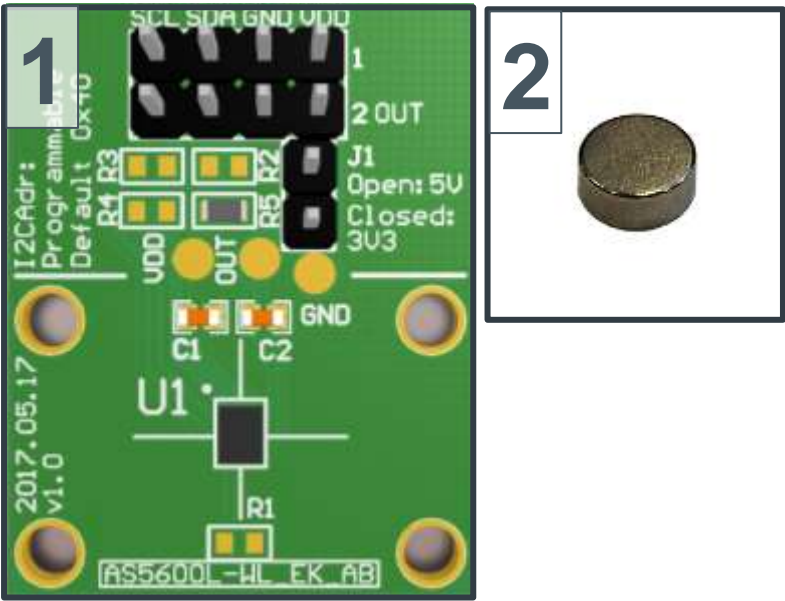
|     |  |    |
|-----|--|----|
| 1   | Introduction .....                       | 3  |
| 1.1 | Kit Content .....                        | 3  |
| 2   | Board description .....                  | 4  |
| 2.1 | Mounting the AS5600L adapter board ..... | 5  |
| 3   | AS5600L adapter board and pinout .....   | 6  |
| 4   | Operation case .....                     | 7  |
| 4.1 | I2C Mode .....                           | 7  |
| 5   | AS5600L-WL_EK_AB Hardware .....          | 8  |
| 5.1 | AS5600L-WL_EK_AB schematics .....        | 8  |
| 5.2 | AS5600L-WL_EK_AB PCB layout .....        | 9  |
| 6   | Ordering & Contact Information .....     | 10 |
| 7   | Copyrights & Disclaimer .....            | 11 |

1 Introduction

The AS5600L adapter board is a small PCB allowing simple and quick testing or evaluation of the AS5600L 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    | AS5600L-WL_EK_AB | Adapter board                                 |
| 2    | AS5000-MD6H-2    | Diametric Magnet, D6x2.5mm, NdFeB, Bomatec AG |

## 2 Board description

The PCB can either be connected 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 as well as I2C (SCL, SDA) and PWM(OUT).

The connector J1 allows you to select between 5V or 3.3V operation (Open=5V/Closed=3.3V)

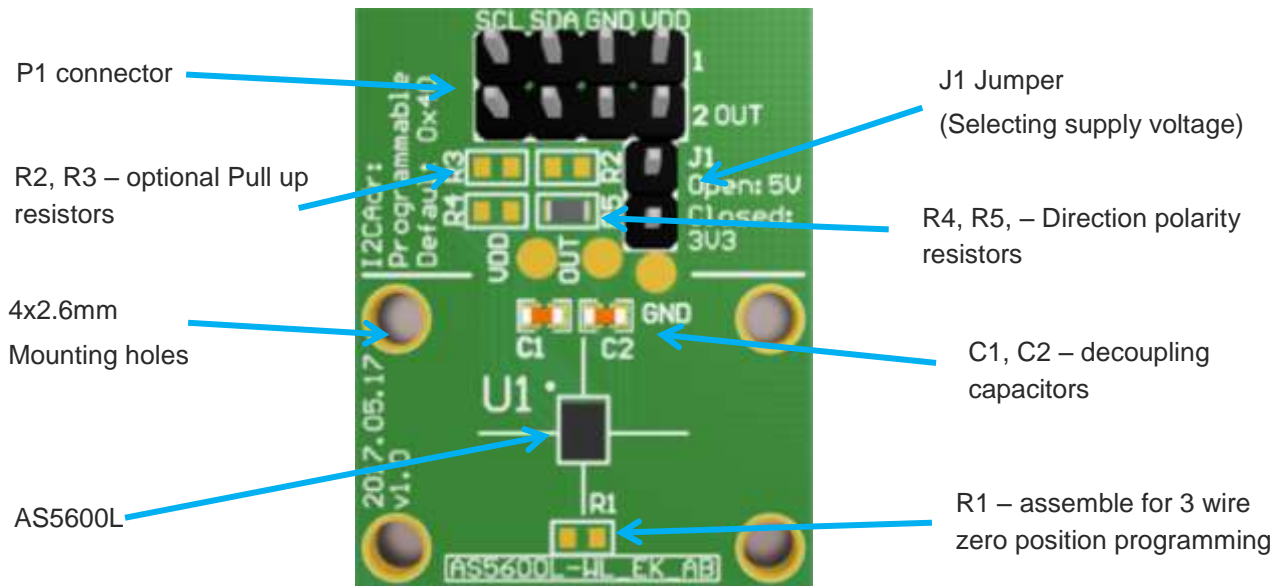
The optional resistor R1 (0R – 0603 package) allows you to enable the 3 wire zero programming feature, where you can set the zero and maximum position without using a  $\mu$ C. (for more details refer to AS5600L datasheet)

R2 and R3 are the optional pull-up resistors for SCL and SDA line.

C1 and C2 are decoupling capacitors.

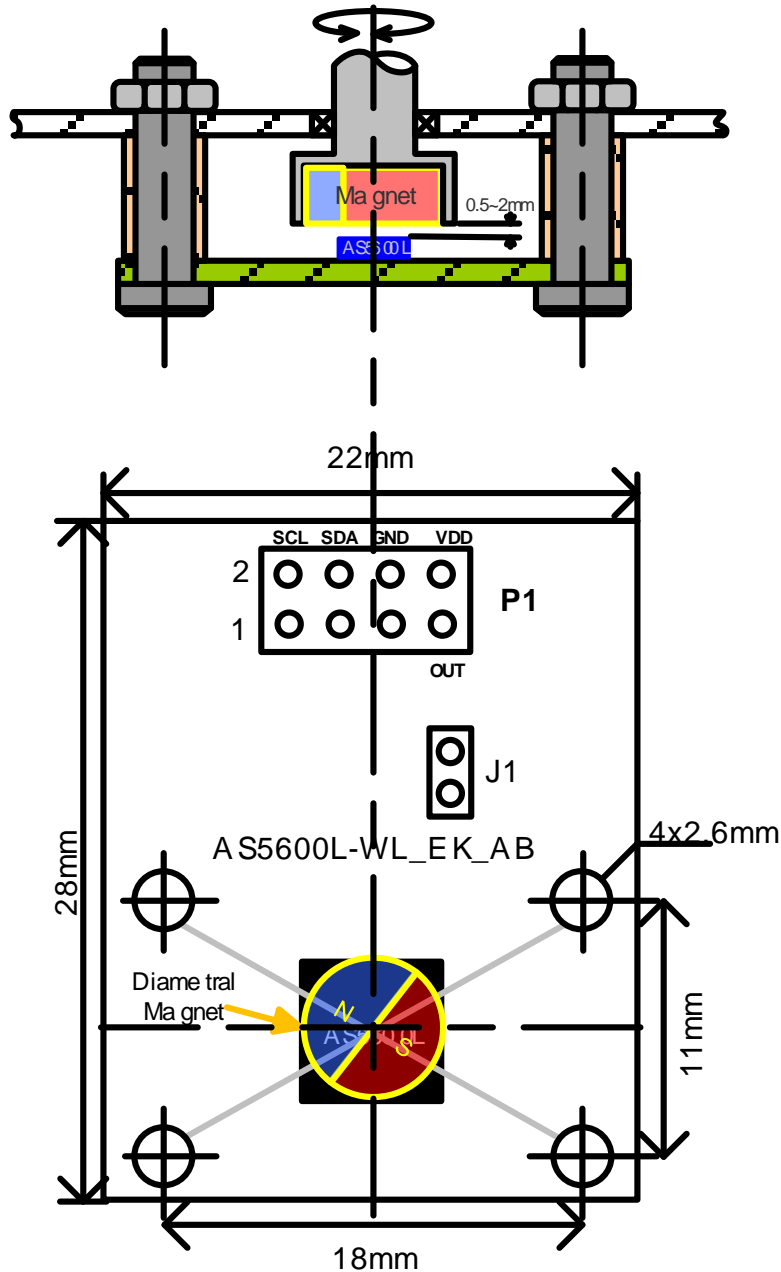
R4 & R5 are used for the direction polarity. Populate R5 for increasing value in clockwise direction, R4 for counterclockwise.

**Figure 2: AS5600L adapter board**



## 2.1 Mounting the AS5600L adapter board

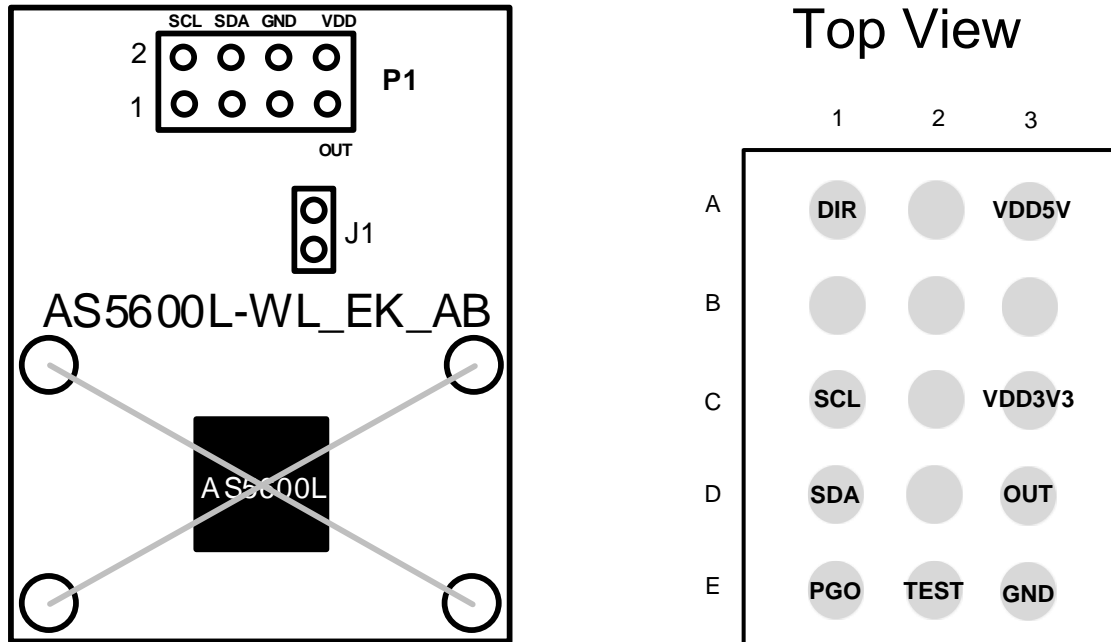
Figure 3: Mounting and dimensions



A 6x2.5mm diametric magnet has to be placed over or under the AS5600L sensor, and should be centered on the middle of the sensors hall array (for hall array center please refer to AS5600L Datsheet). 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 AS5600L adapter board and pinout

Figure 4: AS5600L adapter board and sensor pinout (WLCSP)



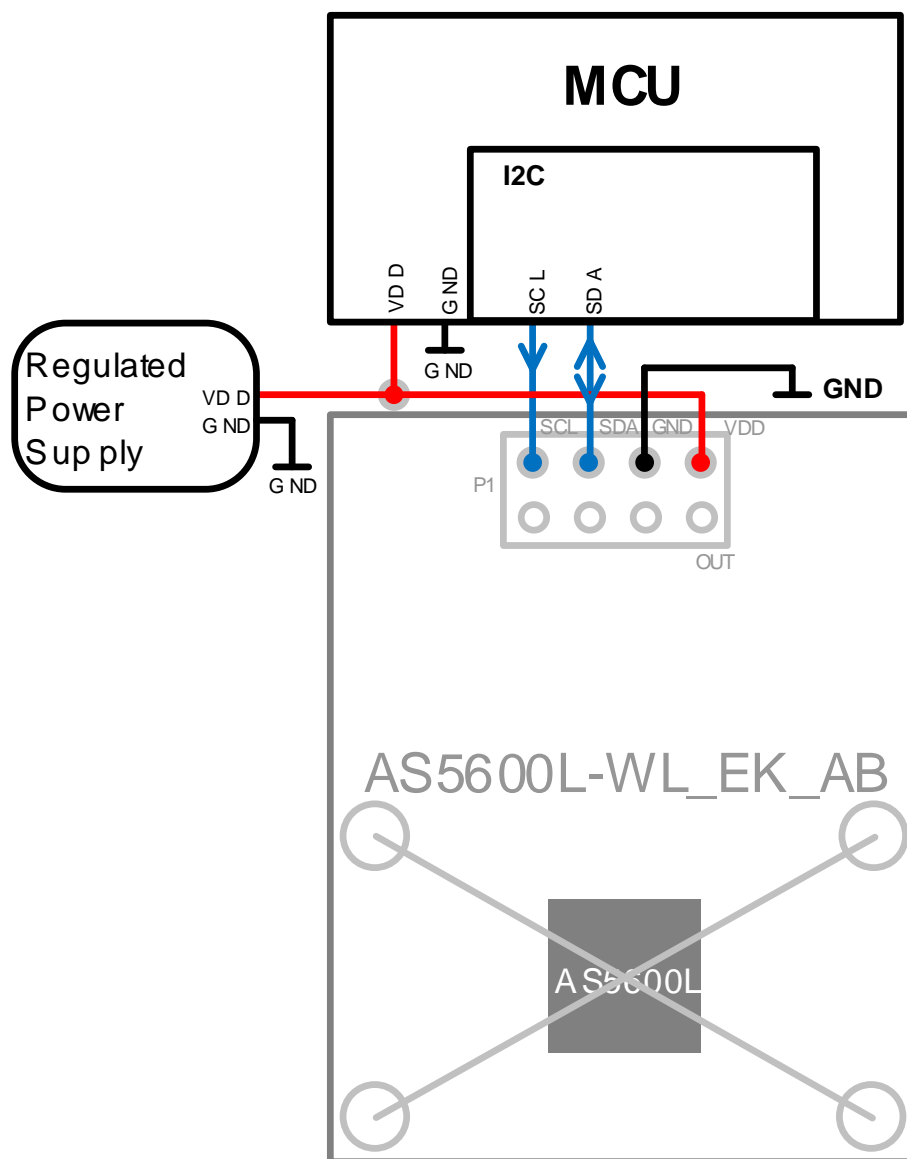
| Pin#<br>Board | Pin#<br>AS5600L | Symbol board | Type                 | Description                              |
|---------------|-----------------|--------------|----------------------|--|
| P1 - 1        | -               | nc           | -                    | Not connected                            |
| P1 - 2        | C1              | SCL          | Digital input        | I <sup>2</sup> C Clock line              |
| P1 - 3        | -               | nc           | -                    | Not connected                            |
| P1 - 4        | D1              | SDA          | Digital input/output | I <sup>2</sup> C Data line               |
| P1 - 5        | -               | nc           | -                    | Not connected                            |
| P1 - 6        | E3              | GND          | Power supply         | Ground                                   |
| P1 - 7        | D3              | OUT          | Digital output       | PWM output                               |
| P1 - 8        | A3/C3           | VDD          | Power supply         | Positive voltage supply (5V / 3,3V mode) |

## 4 Operation case

### 4.1 I2C Mode

The AS5600L 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 AS5600L is VDD, GND, SCL and SDA. The slave address is 0x40.

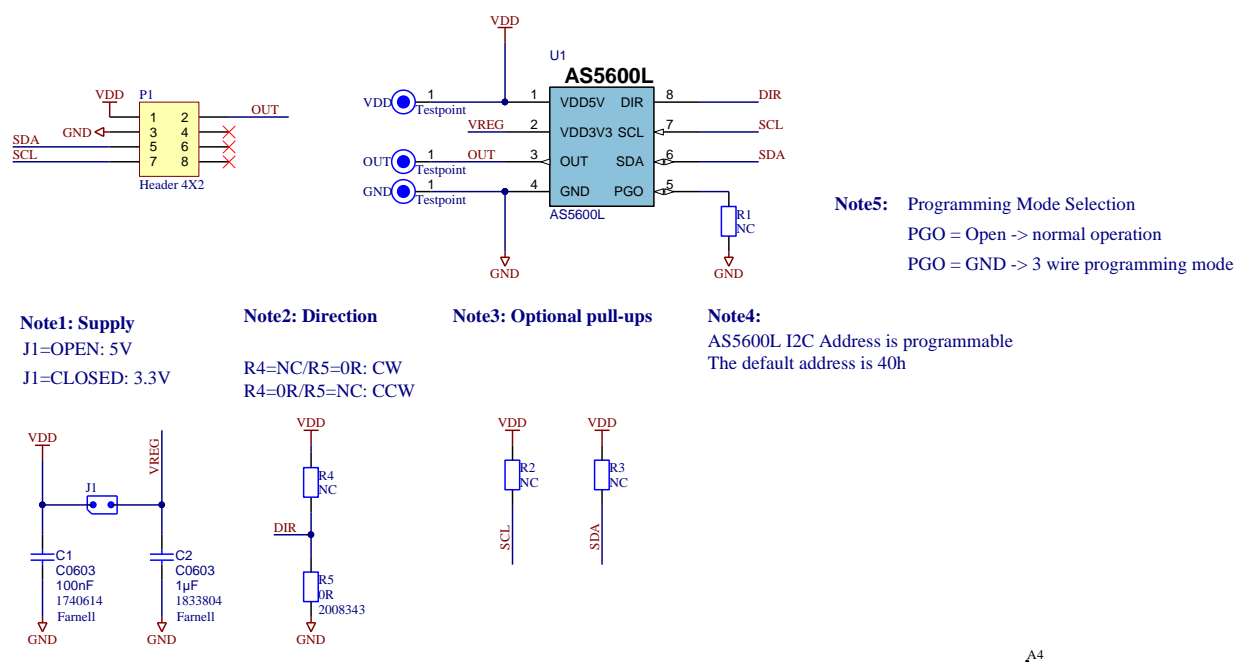
Figure 5: I2C Mode



## 5 AS5600L-WL\_EK\_AB Hardware

## 5.1 AS5600L-WL\_EK\_AB schematics

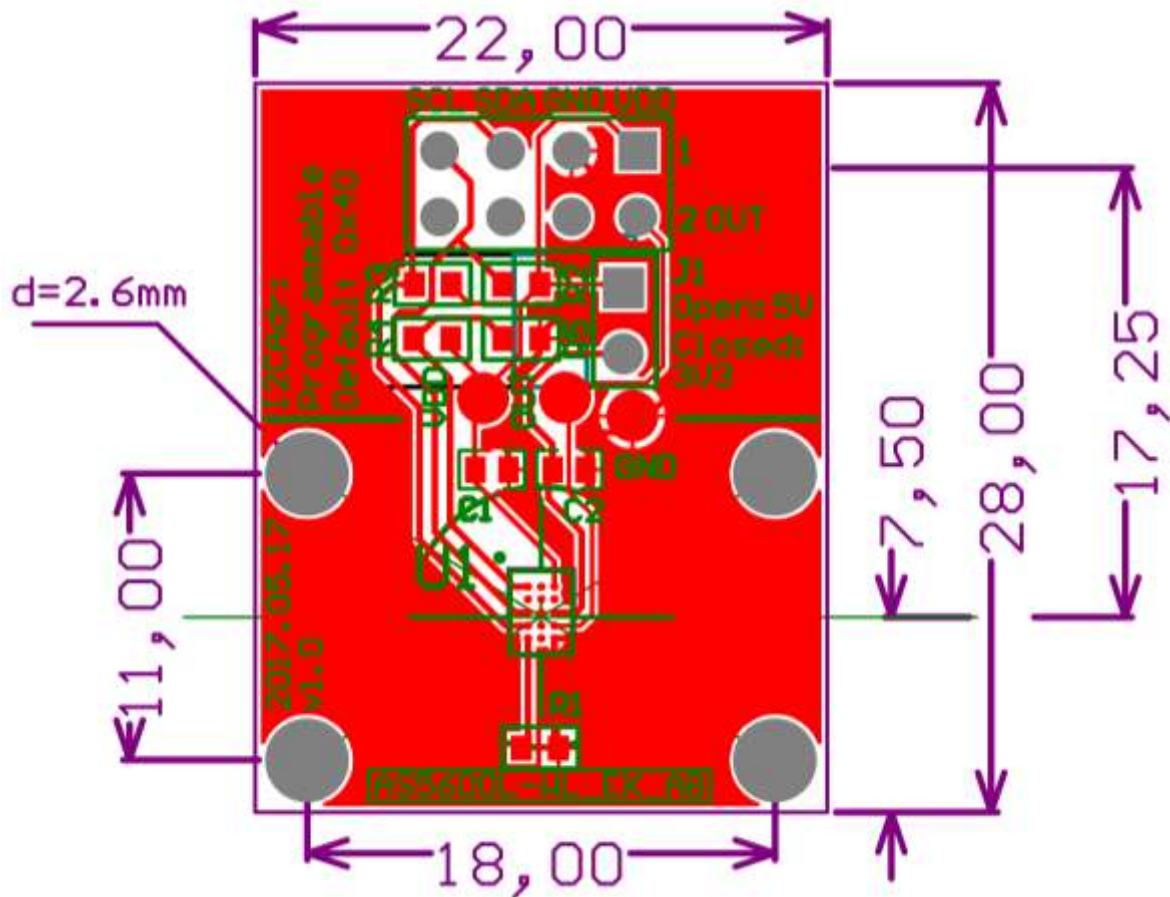
**Figure 6: AS5600L-WL\_EK\_AB schematics**





## 5.2 AS5600L-WL\_EK\_AB PCB layout

Figure 7: AS5600L-WL\_EK\_AB PCB layout



## 6 Ordering & Contact Information

| Ordering Code    | Description                    |
|------------------|--------------------------------|
| AS5600L-WL_EK_AB | AS5600L Eval Kit Adapter Board |

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## 8 Revision Information

| Changes from previous version to current revision 1-00 (2017-Aug-11) | 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.

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