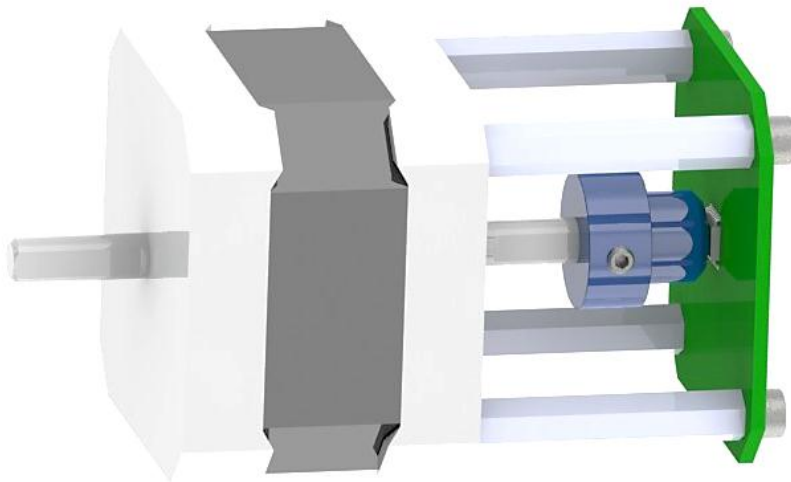


Product Document



Operation Manual: AS5145B-EK-AB-STM1.0



AS5145B Eval-Kit Stepper Motor



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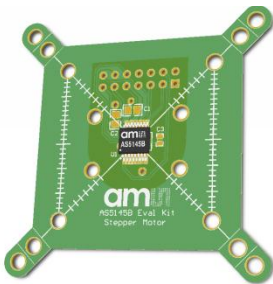
1. General Description

The AS5145B Eval-Kit is designed to adapt standard size stepper motors with a contactless rotary position sensor. Rotation of the magnet holders is sensed by the rotary position sensor, soldered on the PCB board.

2. Package and Board Description

Content of the Eval-Kit:

- AS5145B board



- 4 magnet holders



Ø 5mm



Ø 6mm



Ø 8mm

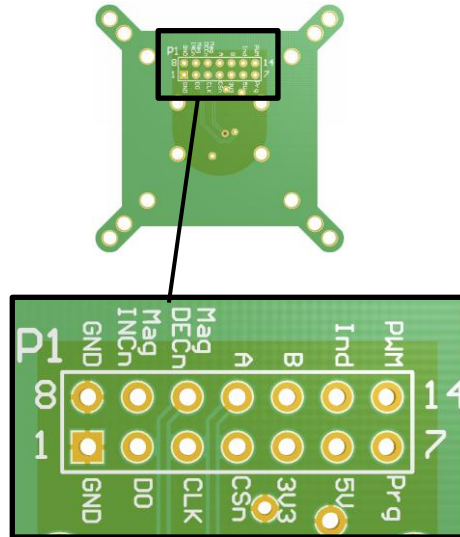


Ø 10mm

- 1 allen key (1.5mm)



- 1 quick start user guide

Figure 1: **Connector**Table 1:
Connector pinout

| Pin | Description | Info |
|-----|-------------|-------------------------------|
| 1 | GND | Ground |
| 2 | DO | Data Output of SSI |
| 3 | CLK | Clock Input of SSI |
| 4 | CSn | Chip Select |
| 5 | 3V3 | 3.3V-Regulator Output. |
| 6 | 5V | Positive Supply Voltage. |
| 7 | Prg | Programming Input. |
| 8 | GND | GND |
| 9 | MagINCn | magnet field status indicator |
| 10 | MagDECn | magnet field status indicator |
| 11 | A | Quadrature Output A |
| 12 | B | Quadrature Output B |
| 13 | Ind | Index Output |
| 14 | PWM | Pulse Width Modulation output |

3. How to get the Eval-Kit running

Figure 2:
5V Power Option

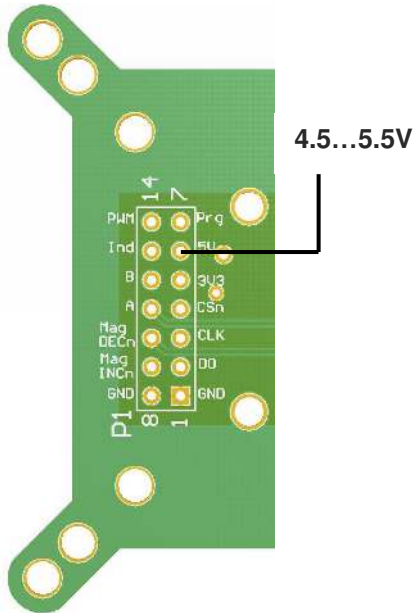
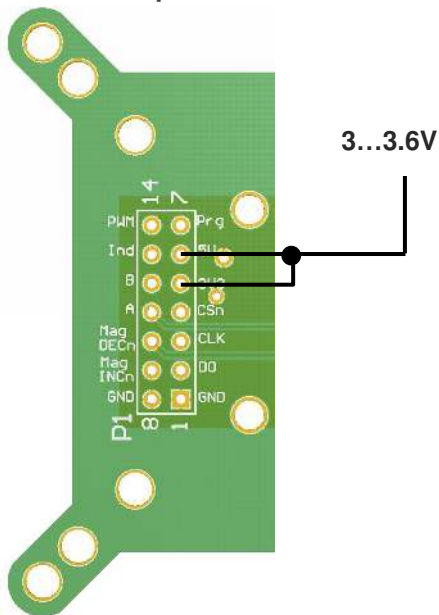


Figure 3:
3V Power Option



4. Mechanical Design Considerations

Table 2:
Motor References (Examples)

| Part Number | Web Page | Manufacturer |
|----------------|--|--|
| 17PY-X0XX | www.nmbtc.com | NMB Technologies Corporation - Motor Group |
| 17PY-X8XX | | |
| 17PY-X4XX | | |
| 17H018D series | www.portescap.com | Portescap |
| 17H118D series | | |
| 17H218D series | | |



Table 3:
Used Magnet

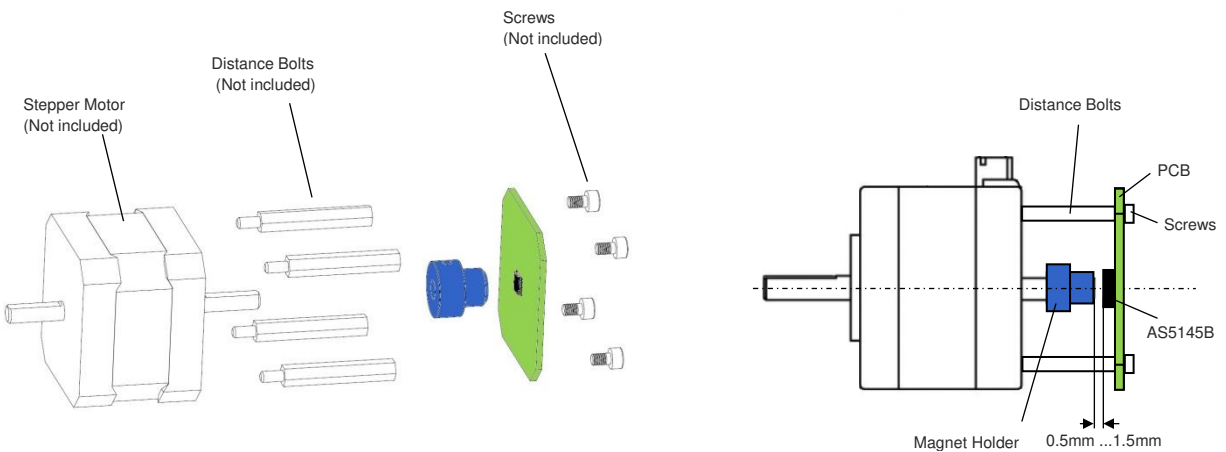
| Part Number | Web Page | Manufacturer |
|-------------|--|------------------------------|
| 2910041-1 | www.dexterimg.com | Dexter Magnetic Technologies |



Additional recommended magnet suppliers refer to our homepage:

<http://www.ams.com/eng/Products/Magnetic-Encoders/Magnets2/Recommended-Magnet-Suppliers>

Figure 4:
Mounting the AS5145B Eval-Kit



The AS5145B board can be mounted on double shaft motors. (See figure 4)

Screws and distance bolts are not included.

5. Schematics, Layout

Figure 5:
Schematic

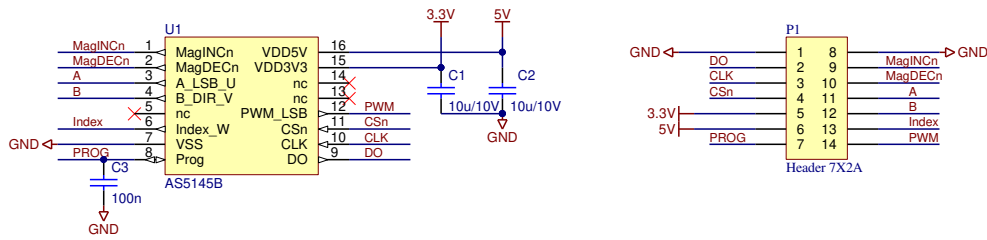


Figure 6:
Top Layer

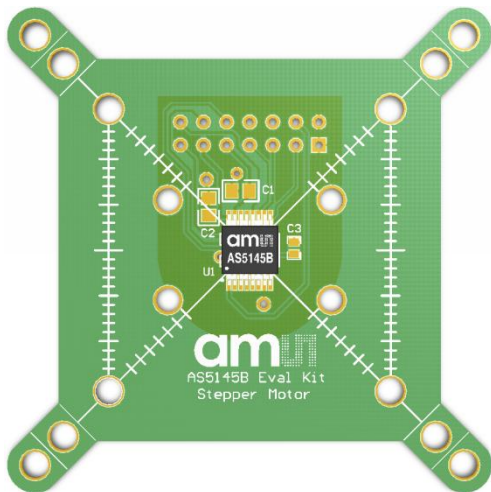


Figure 7:
Bottom Layer

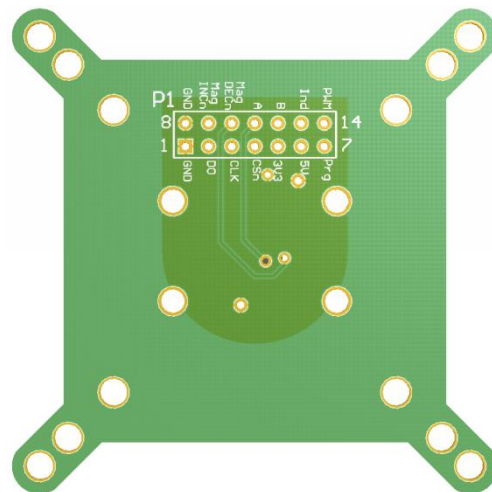


Table 4:
Bill of Materials

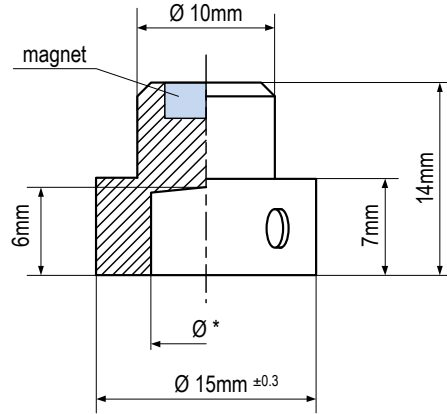
| Pos | Part Number | Reference |
|-----|-------------|----------------|
| 1 | PCB Board | PCB1 |
| 2 | U1 | AS5145B |
| 3 | C1 | 10uF/10V/0805 |
| 4 | C2 | 10uF/10V/0805 |
| 5 | C3 | 100nF/10V/0603 |
| 6 | P1 | 14 Pin Header |

Figure 8:
Magnet Holder



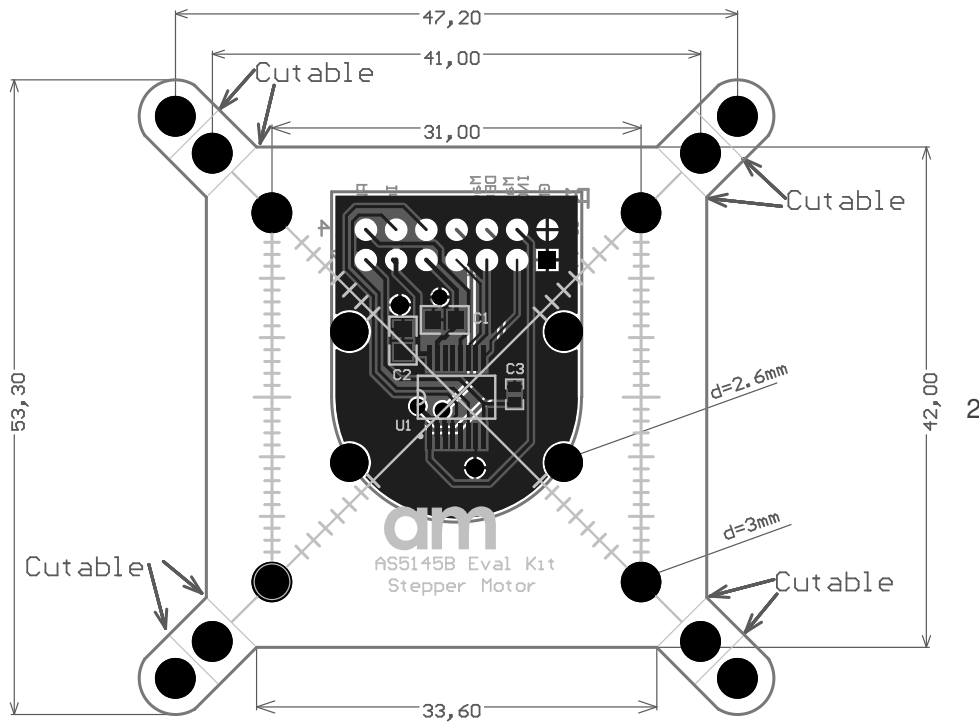
Grub screw for fixing on the shaft of the motor.

Figure 9:
Magnet Holder Dimensions



- *Ø 5mm
- *Ø 6mm
- *Ø 8mm
- *Ø 10mm

Figure 10:
Layout Dimensions



6. Ordering Information

Table 5:
Ordering Information

| Ordering Code | Description |
|----------------------|---|
| AS5145B-EK-AB-STM1.0 | AS5145B Eval-Kit Stepper Motor with ABI, SSI, PWM |

Revisions History

| Revision | Date | Description |
|----------|-----------------|-----------------------------|
| 1.0 | August 6, 2012 | First version |
| 1.1 | Januar 23, 2014 | Updated to new board design |

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