

Operation Manual: AS5048-EK-AB-STM1.0



AS5048 Eval-Kit Stepper Motor

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1. General Description

The AS5048 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:

AS5048 board



• 4 magnet holders







Ø 8mm



Ø 5mm

Ø 6mm

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	A2/MISO	SPI master in/slave out; shared with I2C address selection A2
3	A1/MOSI	SPI master out/slave in; shared with I2C address selection A1
4	SCL/SCK	SPI clock input; shared with I2C clock input
5	SDA/CSn	SPI chip select - active low; shared with I2C data pin
6	PWM	Pulse Width Modulation output
7	3V3	3.3V-Regulator Output.
8	5V	Positive Supply Voltage.

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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 -	
17PY-X8XX		Motor Group	NMB
17PY-X4XX			
17H018D series	www.portescap.com	Portescap	
17H118D series			Portescap
17H218D series			

Table 3:

Used Magnet

Part Number	Web Page	Manufacturer	
2910041-1	www.dextermag.com	Dexter Magnetic Technologies	DEXTER
			DEATER

Additional recommended magnet suppliers refer to our hompage:

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

Figure 4: Mounting the AS5048 Eval-Kit



The AS5048 board can be mounted on double shaft motors. (See figure 4)

Screws and distance bolts are not included.

5. Schematics, Layout

Figure 5: Schematic



Table 4: Bill of Materials

Pos	Part Number	Reference
1	PCB Board	PCB1
2	U1	AS5048
3	C1	10uF/10V/0603
4	C2	100nF/10V/0603

Figure 8: Magnet Holder

Figure 9: Magnet Holder Dimensions



Grub screw for fixing on the shaft of the motor.



Figure 10: Layout Dimensions

All values in mm



6. Ordering Information

Table 5: Ordering Information

Ordering Code	Description
AS5048A-EK-AB-STM1.0	AS5048A Eval-Kit Stepper Motor with SPI interface
AS5048B-EK-AB-STM1.0	AS5048B Eval-Kit Stepper Motor with I2C interface

Revisions History

Revision	Date	Description
1.0	August 6, 2012	First version



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