



Eval Kit Manual

AS5x47

Standard Board

AS5x47-EK_SB

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1 Introduction

The evaluation kit allows an easy and fast evaluation of the AS5x47 rotary magnetic position sensor in the lab or together with an existing system. It includes all required material to evaluate all product features.

This small adapterboard is fully assembled with AS5x47 position sensor and its necessary external components. All relevant signals are available on a dual-row 2.54mm 8-pin header footprint and can be easily wired to an existing application.

The USB I&P Box is an easy-to use programming and demonstration tool. It can be used to configure the device and to program a configuration.

A small magnet holder and a knob with a magnet attached on its shaft is enclosed to show the functionality of the AS5x47.

The AS5x47 is a Hall-based rotary magnetic position sensor with high resolution for fast and accurate absolute angle measurement over a full turn of 360 degrees. Based on planar Hall technology, this device can measure the orthogonal component of the flux density (B_z) of a 2-pole magnet diametrically magnetized. Thanks to its robust architecture the AS5x47x is immune to homogenous external magnetic stray field.

The 4-wire standard SPI interface allows an external unit (e.g. microcontroller) to communicate with the AS5x47 as well as to program it without the need of a special programmer.

The absolute position can be read out through the SPI. An incremental angle measurement is provided as ABI signal with a maximum resolution of 2000 positions per revolution. Easy control of BLDC motors can be achieved using the UVW interface with a programmable number of pole pairs from 3 to 6.

1.1 Kit Content

This kit contains following material listed in Table 1. Additional material can be found on our webpage.

Table 1:
Kit Content

No.	Item	SAP	Info
1	USB I&P Box	990600795	Programming and Interface Box
2	AS5x47_EK_AB		Adapterboard including reference magnet
3	RMH05-DK-XX-1.0	990600534	Rotary Magnet Holder with Knob

For a detailed description of each item please refer to the specific manual. All manuals are available online on the ams AG website.

2 Getting Started

The AS5x47 adapter board is ideal for rapid setup for the AS5x47 position sensor because it includes all necessary tools to operate and configure the AS5x47.

This first steps describes how to connect and use the USB I&P Box together with the AS5x47 Demo Software and the adapter board.

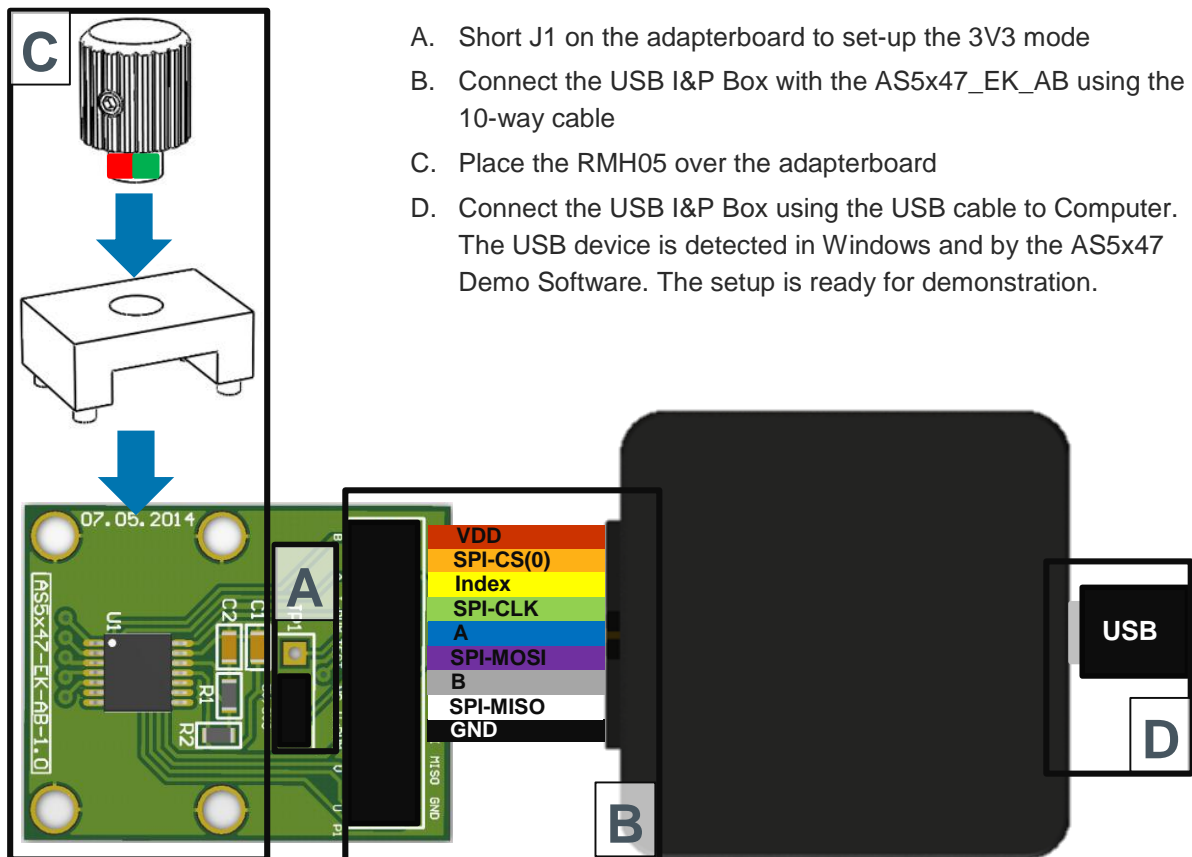
1st Install the AS5x47 Demo Software

The Software is located on the USB drive that comes with the USB I&P Box or it can be downloaded from ams webpage. After Installation run the software.

2nd Assemble the Hardware Setup

Follow the Instructions shown below in Figure 1 to set-up the kit.

Figure 1:
Setup Instructions



- A. Short J1 on the adapterboard to set-up the 3V3 mode
- B. Connect the USB I&P Box with the AS5x47_EK_AB using the 10-way cable
- C. Place the RMH05 over the adapterboard
- D. Connect the USB I&P Box using the USB cable to Computer. The USB device is detected in Windows and by the AS5x47 Demo Software. The setup is ready for demonstration.

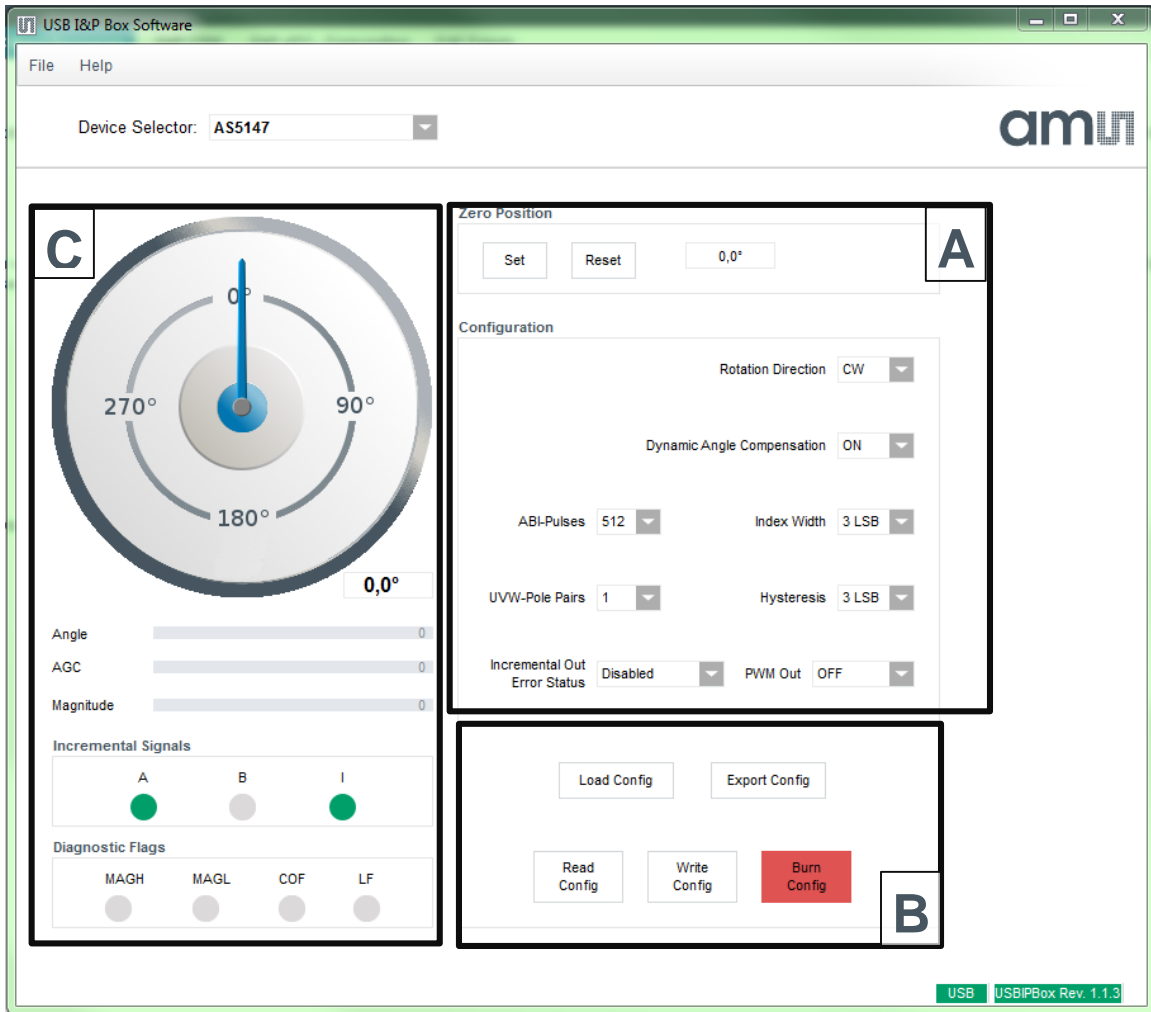
Note: It might be necessary to perform a firmware update on the USB I&P Box if a wrong firmware was detected. In this case, the user will be prompted to allow an automatic firmware upgrade.

3rd Start using the software

Following parts of the software are used to perform a configuration and to read-out the AS5600. Refer to Figure 2 for reference. Read the software user manual for details.

- A. Perform your desired settings
- B. Read/Write/Burn/Export or Import your configuration
- C. Verify the results

Figure 2:
General Software Instructions



3 Ordering & Contact Information

Ordering Code	Description
AS5x47-EK_SB	AS5x47 Eval Kit Standard Board

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5 Revision Information

Initial version 1-00

Changes from 0-00 (2014-Jul-2) to current revision 1-00 (2014-Jul-2)	Page
Initial version	

Note: Page numbers for the previous version may differ from page numbers in the current revision.