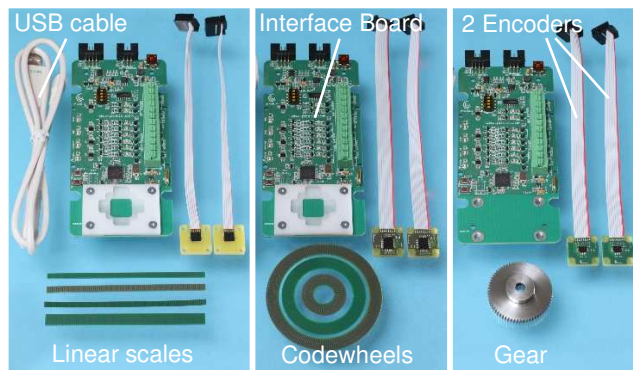# *Product data*

Contents

Fig. 1: Evaluation & Programming Tool with linear scales (left), with codewheels (center) or with a gear (right). The exact contents of the EPT is defined in Tables 1 – 3.

Interface Board

The board contains several LEDs as listed below:

- PWR (red): Interface Board powered via USB

- ENC (red): Encoder active

- SYSTEM (red): Microcontroller active

- PROG (yellow): Programming of encoder's (One Time Programmable) memory is ongoing

- Signal LEDs (red): encoder output signals

The encoder signals are visualized by the signal LEDs and can be measured on the TestPins and the Terminal Block.
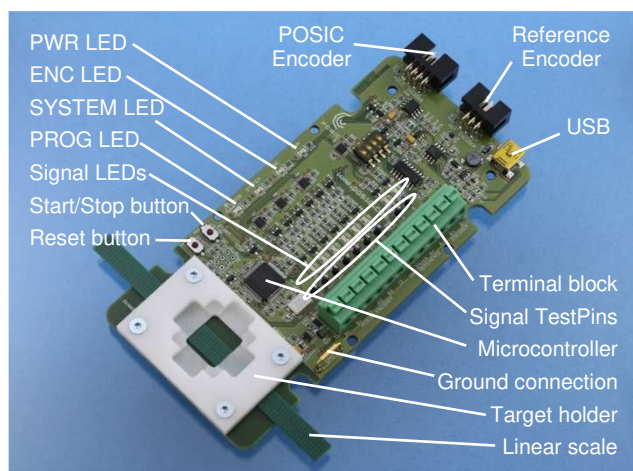

Fig. 2: The Interface Board

Operation without PC/software

The Interface Board is operated without software by connecting the USB-cable to a mains-USB converter or to a PC. Press "Start/Stop" to toggle the encoder on/off.
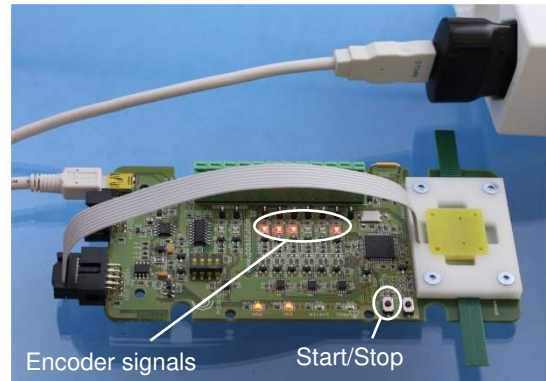

Fig. 3: The Interface Board operated without PC

Operation with ASSIST software

The Interface Board is operated with a PC using the USB cable and the ASSIST software.

Fig. 4: The Interface Board operated with PC

ASSIST Software

The ASSIST software allows you to configure, measure and linearize POSIC encoder kits. These three functions are explained below.

Configuration

The configuration windows allow you to:

- Choose between rotary and linear measurement
- Define the codewheel or scale of the POSIC encoder
- Define the resolution of the reference encoder (optional)
- Select the resolution, maximum speed and orientation of the POSIC encoder
- Select the LookUp Table
- Program the configuration and LUT in the encoder's OTP (One Time Programmable) memory

For evaluation purposes, the encoder can be operated with ASSIST in any configuration. OTP programming is only required for "standalone" operation without ASSIST.
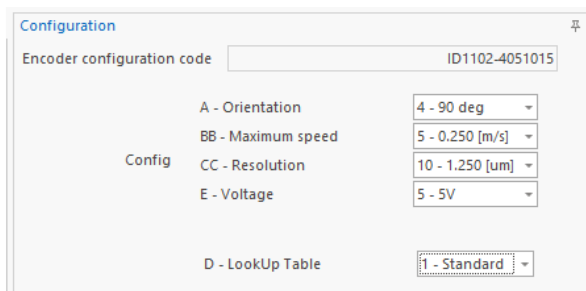
Fig. 5: Configuration of the encoder

Measurement

The evaluation window allows to operate the encoder and to visualize the position of the POSIC- and reference-encoder. The encoder-signals can be picked up from the Interface Board for visualization on an oscilloscope or for closed-loop operation. The measured data can be exported as a csv-file.
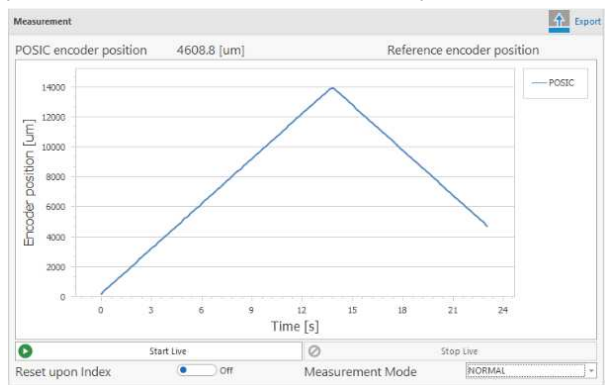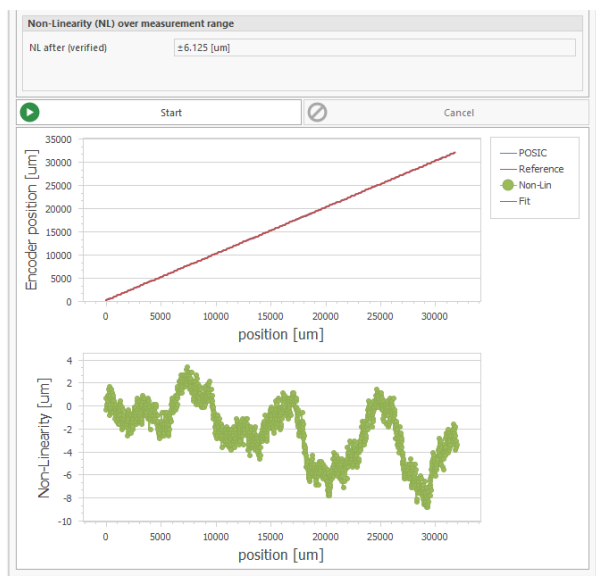

Fig. 5: Measurement window.

Fig. 6: Linearization window; red line prior to linearization NL 58 um; green line after linearization NL 6 um.

Linearization

POSIC encoders can be operated with scales, codewheels (PCBs with copper strips) as well as ferromagnetic gears.

Each scale/codewheel/gear has its own specific non-linearity, which can be compensated by means of a Standard LUT (LookUp Table). Standard LUTs are available in the ASSIST Software, typical accuracy is ±25 µm. For higher accuracy, ASSIST Software allows to linearize the POSIC encoder against a reference encoder (e.g. a high-accuracy optical encoder), resulting in custom LUT with typical accuracy ±10 µm.

Encoder Status

The encoder status is checked during startup. Several tests to check e.g. the cable or the supply voltage are available in the Advanced Functions window.
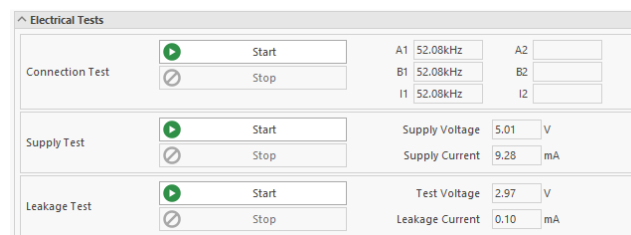

Fig. 7: Encoder tests

User manual

The user manual for the Interface Board and the ASSIST software can be downloaded from POSIC's website.

Ordering information

Evaluation & Programming Tool: **EPT002-AAAAAAA-B-C**

Table 1: Encoder Type

AAAAAAA	Encoder and scale/codewheel/gear
0000000	No encoder, no scale/codewheel/gear
ID1102L	Encoders + scales TPLS04, TPLS05
ID4501L	
IT3402L	Encoders + scales TPLD04, TPLD05
IT5602L	
ID1102C	Encoders + codewheels TPCD05-064, TPCD06-128 and TPCD07-180
ID4501C	
IT3402C	
IT5602C	
ID1102G	Encoders + ferromagnetic gear, module 0.5, 64 teeth
ID4501G	

Table 2: Number of encoders

B	Number of encoders
0	No encoder
1 - 5	1 up to 5 encoders

Table 3: Blue plastic enclosure

C	Blue plastic enclosure
0	No enclosure
1	With enclosure