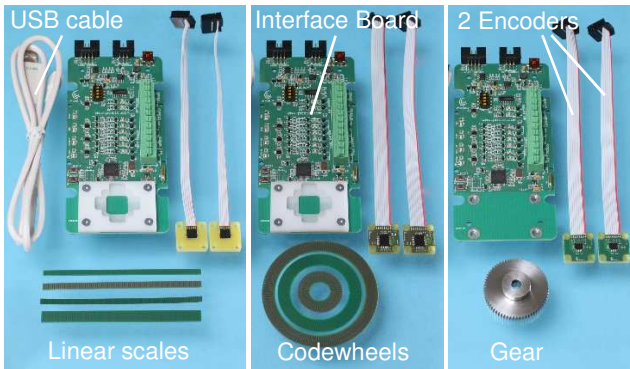# Product data

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.
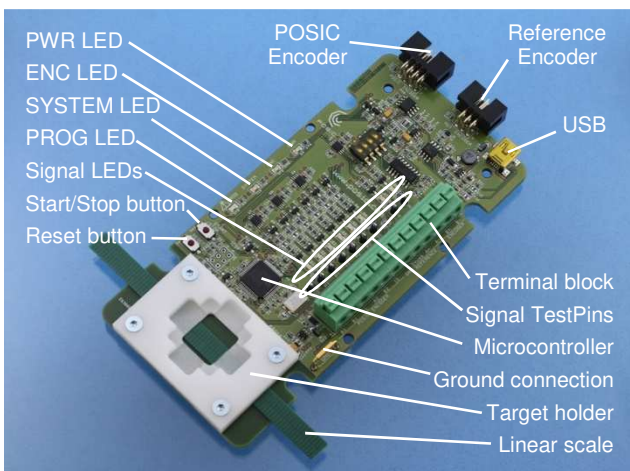

Fig. 2: The Interface Board

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.
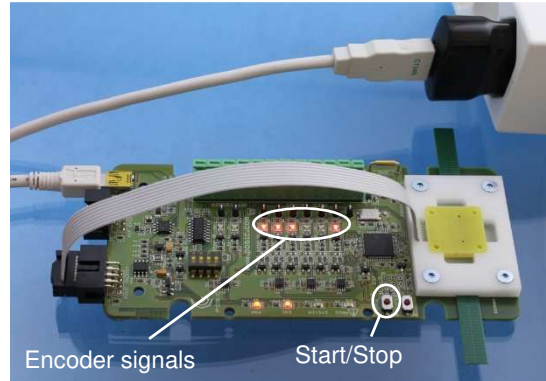

Fig. 3: The Interface Board operated without PC

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, evaluate and linearize POSIC encoder kits. These three functions are available in three windows as explained below.

Configuration

The configuration window allows you to:

- Choose between rotary and linear measurement
- Define the resolution of the reference encoder
- Define the codewheel or scale of the POSIC encoder
- Select the resolution, maximum speed and orientation of the POSIC encoder
- Select the LookUp Table
- Program the configuration 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.
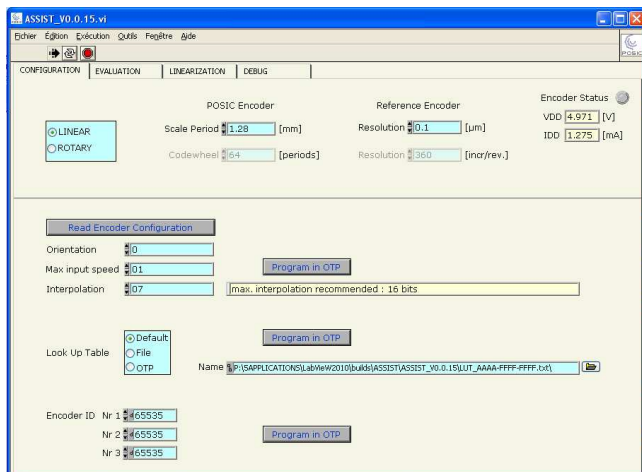
Fig. 5: Configuration window

Evaluation

The evaluation window allows to operate the encoder and to visualize the position of the POSIC- and reference-encoder.

Linearization

Encoders are often operated without linearization. However, for high-accuracy applications, the linearization window offers the possibility to compensate the periodic non-linearity (NL) of the encoder by means of a LookUp Table (LUT) that can be stored in the encoder's memory. If linearization is not required, the Default-LUT is used.

Three linearization methods are available:
- Manual: Measurement in steps adjusted with microscrew
- File: Measurement via external data acquisition system
- Automatic: Measurement using a reference encoder

The linearization sequence:
1) Initial measurement used to calculate the LUT
2) Verification measurement using the calculated LUT
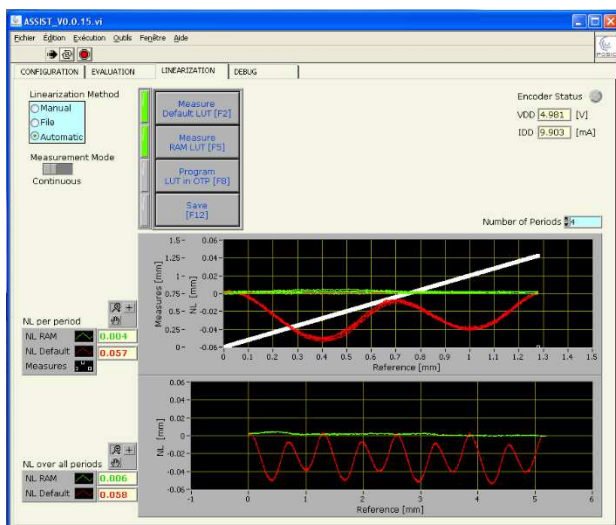3) Program the LUT in the encoder (optional)
4) Save the LUT in a file

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

Debug

The Debug window allows you to check the Interface Board and the encoder if a problem occurs.

Encoder Status

The encoder status is shown at the top right side of each window. The indicator turns red when the encoder is activated. The encoder's supply voltage and current are measured at the moment that the encoder is activated.

When the encoder-indicator is off, the encoder is not active and may be disconnected or replaced by another encoder.
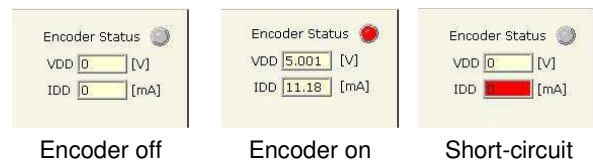

| Encoder off | Encoder on | Short-circuit |

Fig. 7: Encoder status

User manual

A 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 + 100 mm scales :
ID4501L	TPLS01, TPLS02, TFLS01, TPLD03
IT3402L	Encoders + 100 mm scale TPLD03
IT5602L	
ID1102C	
ID4501C	Encoders + codewheels:
IT3402C	TPCD05-064, TPCD06-128,
IT3403C	TPCD07-180
IT5602C	
ID1102G	Encoders + 1 gear:
ID4501G	ferromagnetic, module 0.5, 64 teeth
AP3403L	Encoders + 100 mm scales :
AP5603L	TPLA08, TPLA16, TPLA32

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