Prokorment

VERTROUWEN IN PRAKTIJK

GEMAC

Sensorik. Messtechnik. ASIC-Design.

User Manual

Starter kit

Version: 1.2

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Revision History

Date	Revision	Changes
2011-05-02	0	First Version
2015-01-26	1	Redesign ISPA1, Update Windows compatibility
11.02.15	2	referenceLINE added

Table of Contents

1 Overview

With the optional starter kit it is possible to adjust all inclination sensors with CAN/CANopen, current or voltage interface. It consists of a programming adapter that is connected via USB to a PC. The connection with the programming adapter is realized through various, also included adapter cables. The inclination sensor is supplied with power through this. An additional power supply is not necessary *.

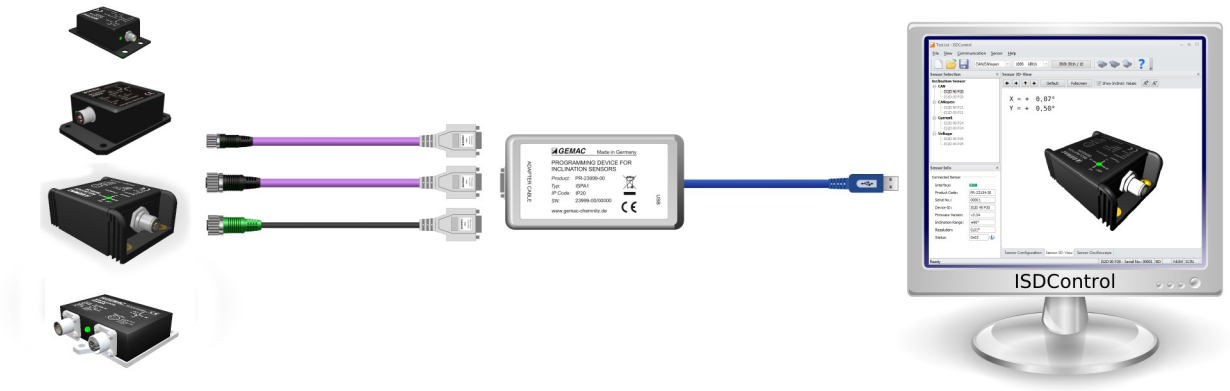

Figure 1: Functionality of the starter kit

*** Note:**

referenceLINE inclination sensors need an additional power supply (BG 03018-00) for the programming device.

2 Start-up

2.1 System requirements

To ensure the correct installation of the PC software, your PC or notebook should meet the following minimum requirements and possess one of the operating systems listed below.

Hardware:

- Processor: 1,2 GHz or higher
- at least 256 MB RAM
- Graphics card with 24-bit color depth (32-bit recommended)
- Resolution: 1,024x768 pixels or higher
- CD/DVD ROM drive
- free USB port

Supported operating systems:[1]:

- Microsoft Windows® XP
- Microsoft Windows® Server 2003
- Microsoft Windows® Vista (32 Bit and 64 Bit)
- Microsoft Windows® 7 (32 Bit and 64 Bit)
- Microsoft Windows® 8 (32 Bit und 64 Bit)
- Microsoft Windows® 8.1 (32 Bit und 64 Bit)

2.2 Installing the software

The PC software is available in German and English and is supplied on CD. The installation sets up the program ISDControl on your system and installs the USB driver required by the programming device. To this end, perform the following steps:

1. Insert the CD into the appropriate drive of your PC.
2. The installation starts automatically.
3. Follow the instructions of the setup program.

Note:
To install the USB driver, you must possess administrator rights.

1 Microsoft and Windows® are registered trade marks of Microsoft Corporation in the USA and in other countries.

2.3 Connection of sensors

1. Connect the programing device through the USB interface to a PC or notebook.
2. Select the necessary adapter cable for your sensor type (see Table 1) and connect the sensor to the programming device.
3. Start the program ISDControl and select the sensor interface
   - CAN/CANopen (additional selection of baud rate and CAN identifier or Node-ID possible) or
   - Current/Voltage

   in the toolbar (see Section 3.2.1).
4. The Device ID and serial number is displayed in the status bar of ISDControl. The connected sensor can now be configured.

Sensor type	Interface	Adapter cable
ISxSPxxx-C-BL	CAN	Adapter M8 CAN/CANopen
ISxSPxxx-O-BL	CANopen	Adapter M8 CAN/CANopen
ISxBPxxx-C-BL	CAN	Adapter M12 CAN/CANopen
ISxBPxxx-O-BL	CANopen	Adapter M12 CAN/CANopen
ISxMAxxx-C-BL	CAN	Adapter M12 CAN/CANopen
ISxMAxxx-O-BL	CANopen	Adapter M12 CAN/CANopen
ISxBPxxx-C-CL	CAN	Adapter M12 CAN/CANopen
ISxBPxxx-O-CL	CANopen	Adapter M12 CAN/CANopen
ISxTKxxx-C-RL	CAN	Adapter M12 CAN/CANopen
ISxTKxxx-O-RL	CANopen	Adapter M12 CAN/CANopen
ISxBPxxx-I-BL	Current output	Adapter M12 Current/Voltage
ISxBPxxx-U-BL	Voltage output	Adapter M12 Current/Voltage
ISxMAxxx-I-BL	Current output	Adapter M12 Current/Voltage
ISxMAxxx-U-BL	Voltage output	Adapter M12 Current/Voltage
ISxBPxxx-I-CL	Current output	Adapter M12 Current/Voltage
ISxBPxxx-U-CL	Voltage output	Adapter M12 Current/Voltage

Table 1: Selection of necessary adapter cable

3 The ISDControl program

3.1 General notes on operation

3.1.1 Help

When designing the ISDControl program, special attention was devoted to a clear structure and a self-explaining graphical user interface. Many elements of the user interface display detailed explanations when the mouse pointer is moved over a control element (tooltip or status text).

The manual is also supplied in electronic form and can be called up both via the help function and with the F1 key.

3.1.2 Data saving

All measurement, protocol and export data set using the ISDControl program, can be stored in a document with the file extension ".isd". The document can be opened either by double-clicking on the file in the Windows® Explorer or by dragging the file to the program (drag & drop).

3.2 Program structure

The graphical user interface of the ISDControl program includes a toolbar and the views “Sensor Selection”, “Sensor Info”, “Sensor Configuration”, “Sensor 3D-View” and “Sensor Oscilloscope”. All views can be freely arranged in the program window or undocked from it.

3.2.1 Toolbar

On the toolbar, the communication parameters of the programming device can be established. These include the sensor interface (CAN/CANopen or Current/Voltage), the baud rate and the CAN identifiers or Node-ID. The baud rate and CAN identifiers for the sensor interface Current/Voltage are fixed and can not be adjusted.

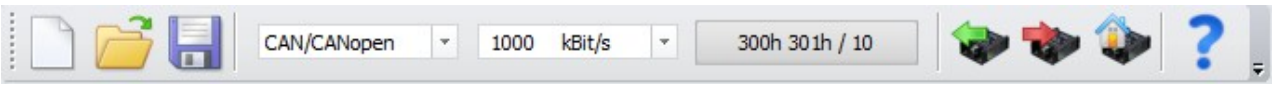

Figure 2: Toolbar

If the sensor is connected to the programming device and has been recognized by the ISDControl program, the complete sensor configuration (see Section 3.2.4) can be read or written. It is also possible to reset the connected sensor to its default parameter.

3.2.2 View “Sensor Selection”

If a sensor is connected to the programming adapter and recognized, the correct sensor type is selected automatically. All other list entries are disabled and not editable anymore.

If no sensor is connected, you can switch freely between the sensor types. A selection automatically displays the appropriate configuration dialog for setting the parameters (see Section 3.2.4).

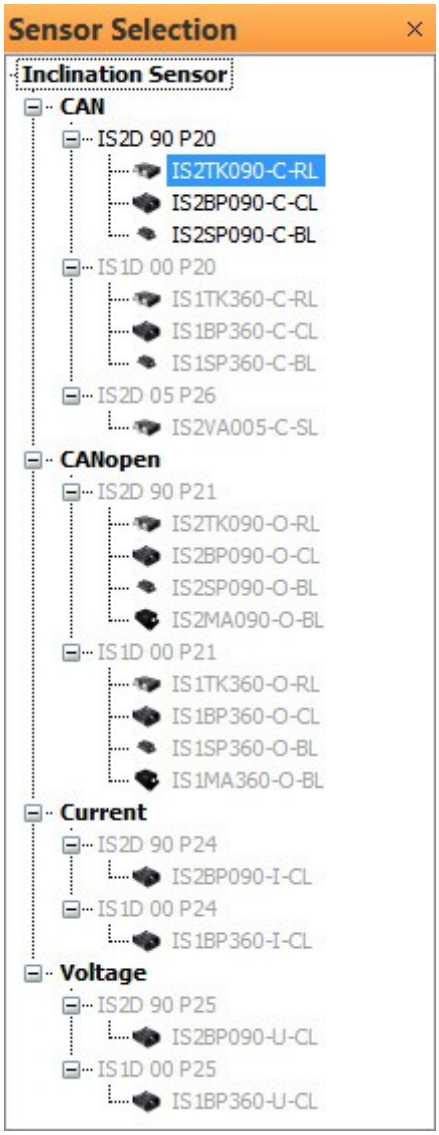

Figure 3: "Sensor Selection"

3.2.3 View “Sensor Info”

In this view, basic information (interface, serial number, firmware version, etc.) is displayed about the connected sensor. The sensor status is analyzed by a tooltip when the mouse pointer is moved over the icon that appears behind it.

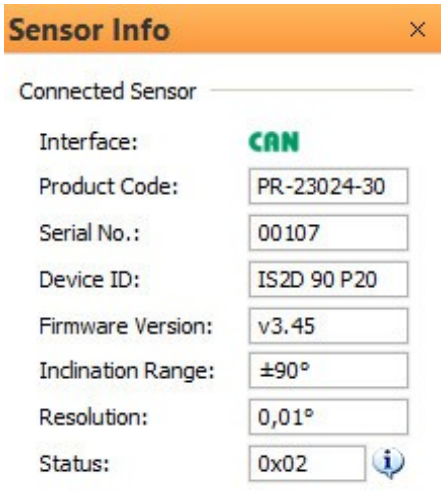

Figure 4: "Sensor Info"

3.2.4 View “Sensor Configuration”

Switching between the sensor types in view “Sensor Selection” (see Section 3.2.2) automatically displays the appropriate configuration dialog for setting the parameters. The parameters set in the document are compared with those in the sensor. Differences between the document and the sensor data are highlighted. The transfer of the document data into the sensor can be done with the red arrow. A reading of the sensor data in the document is possible by pressing the green arrow button. Alternatively, the document and sensor data are updated through the tool bar (see Section 3.2.1).

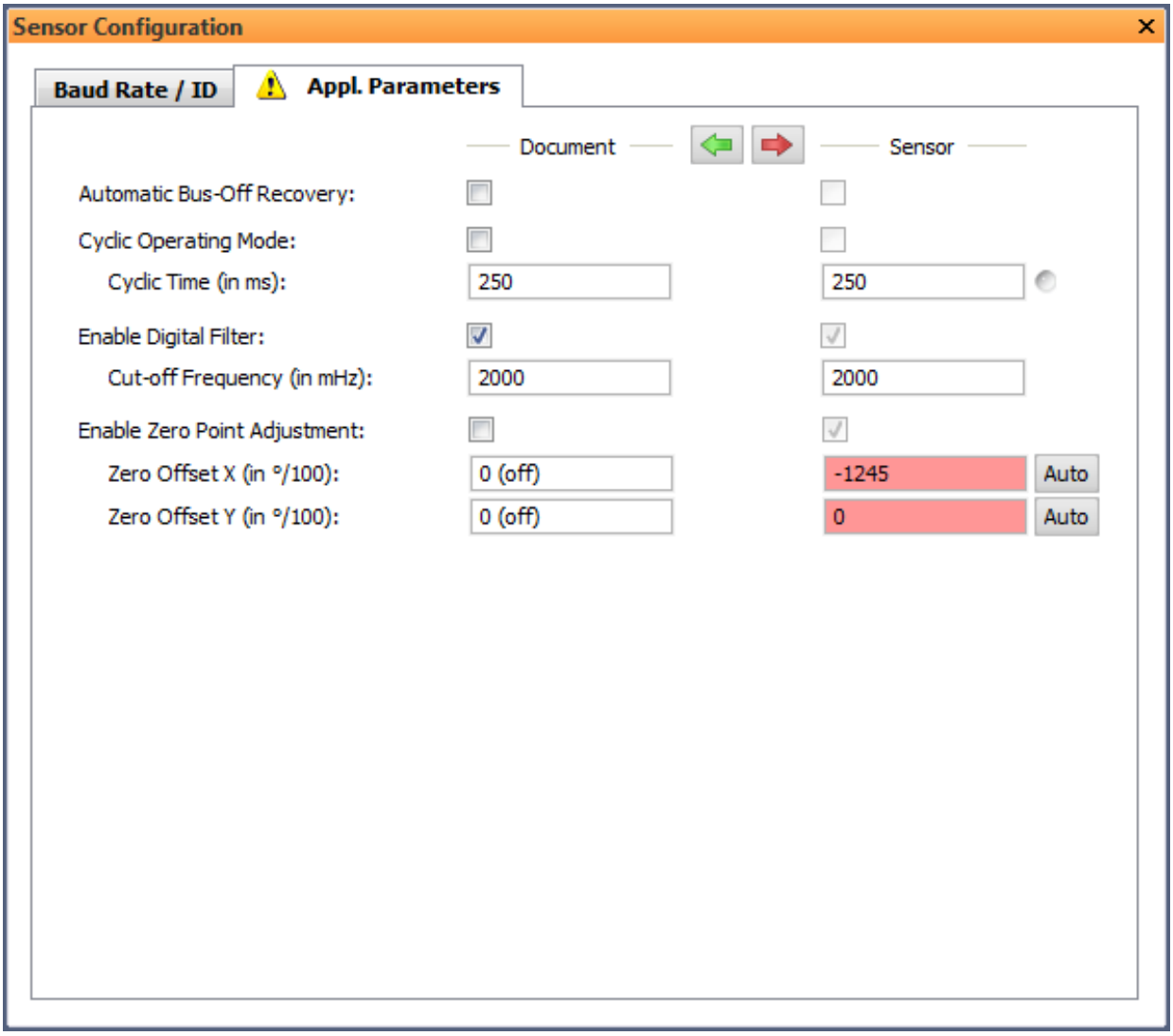

Figure 5: Numerical configuration of an inclination sensor

For inclination sensors with current or voltage interface, the parametrization can be graphically. This applies particularly to the configuration of the analog outputs for channel A and B.

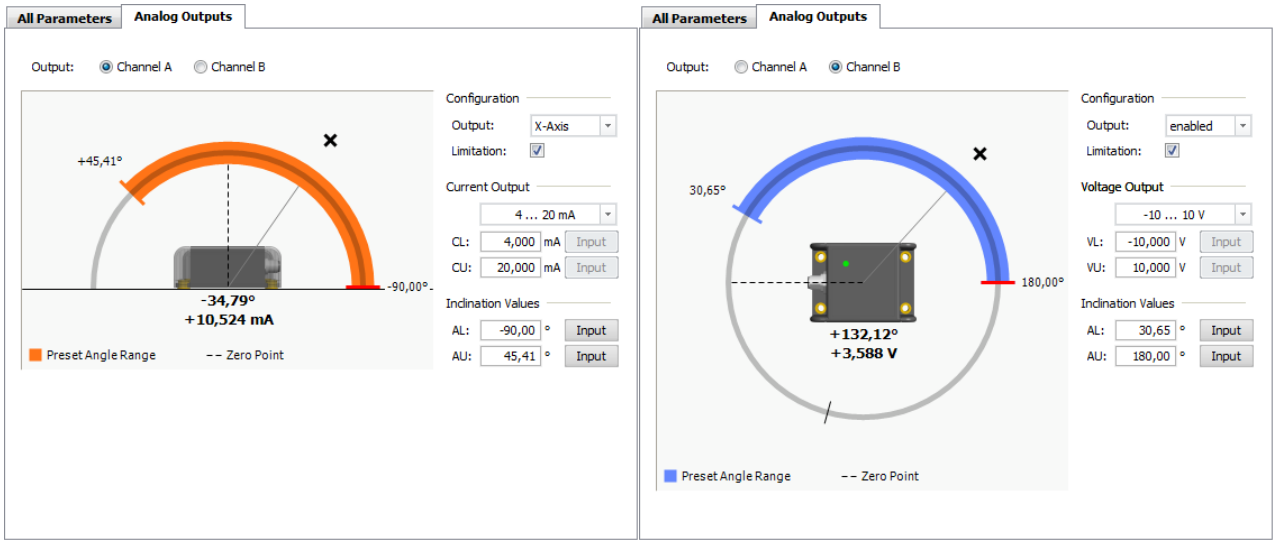

Figure 6: Graphical configuration of the analog outputs of an inclination sensor

3.2.5 View “Sensor 3D-View”

By the program integrated 3D view, the position of the sensor in space can be visualized. The orientation of the camera is variable. There is a full-screen mode available.

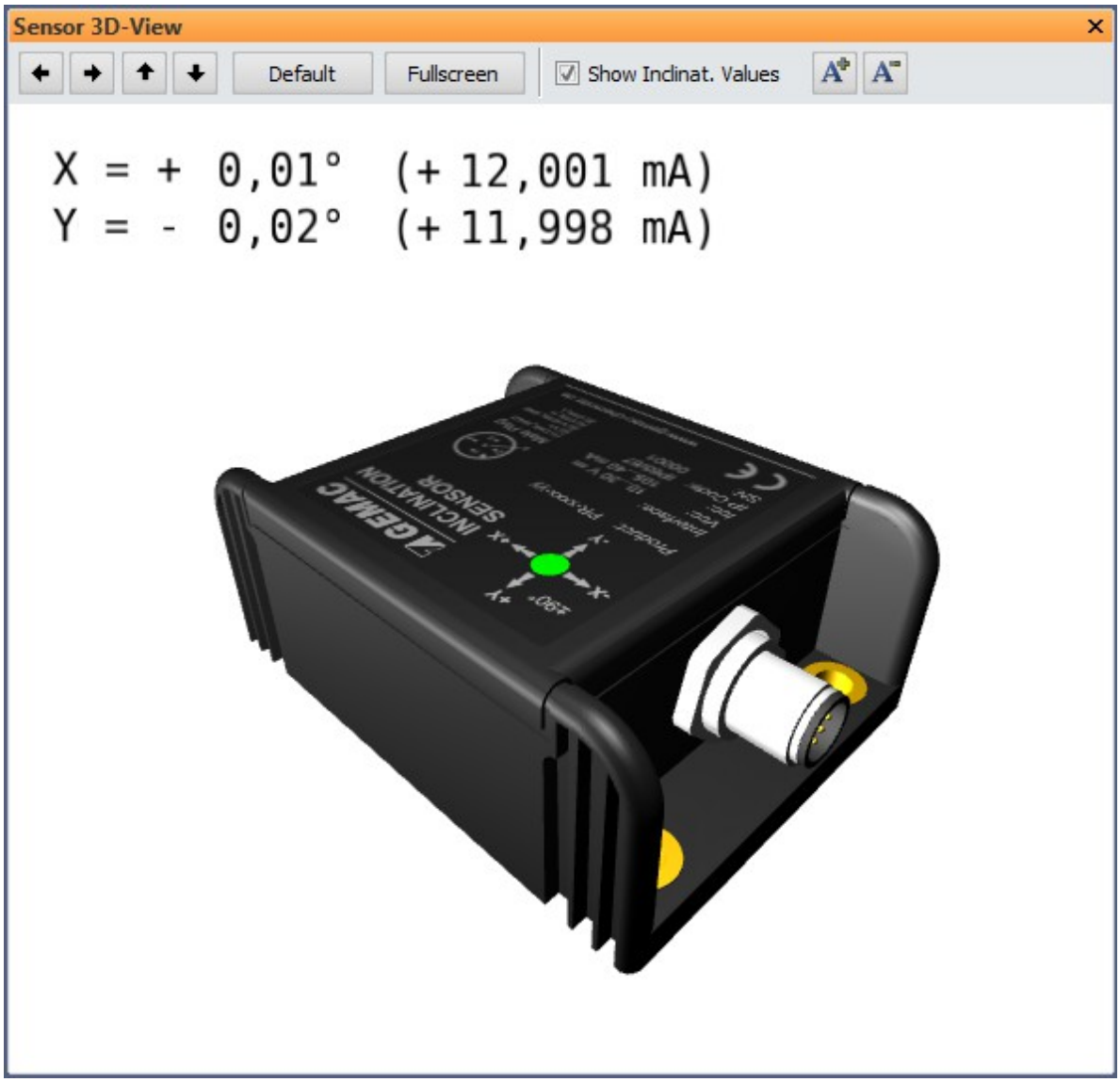

Figure 7: 3D imaging and display of the current angle

3.2.6 View “Sensor Oscilloscope”

The inclination sensor offers the possibility to suppress the influence of external disturbing vibrations. The internal lowpass digital filter (Butterworth, 8th order) is programmable. The cut-off frequency is adjustable between 0.3 and 25 Hz.

In the oscilloscope display, the influence of the adjustable digital filter can be controlled directly. Time base of the view, and amplitude and offset can be set analog to the operation of an oscilloscope.

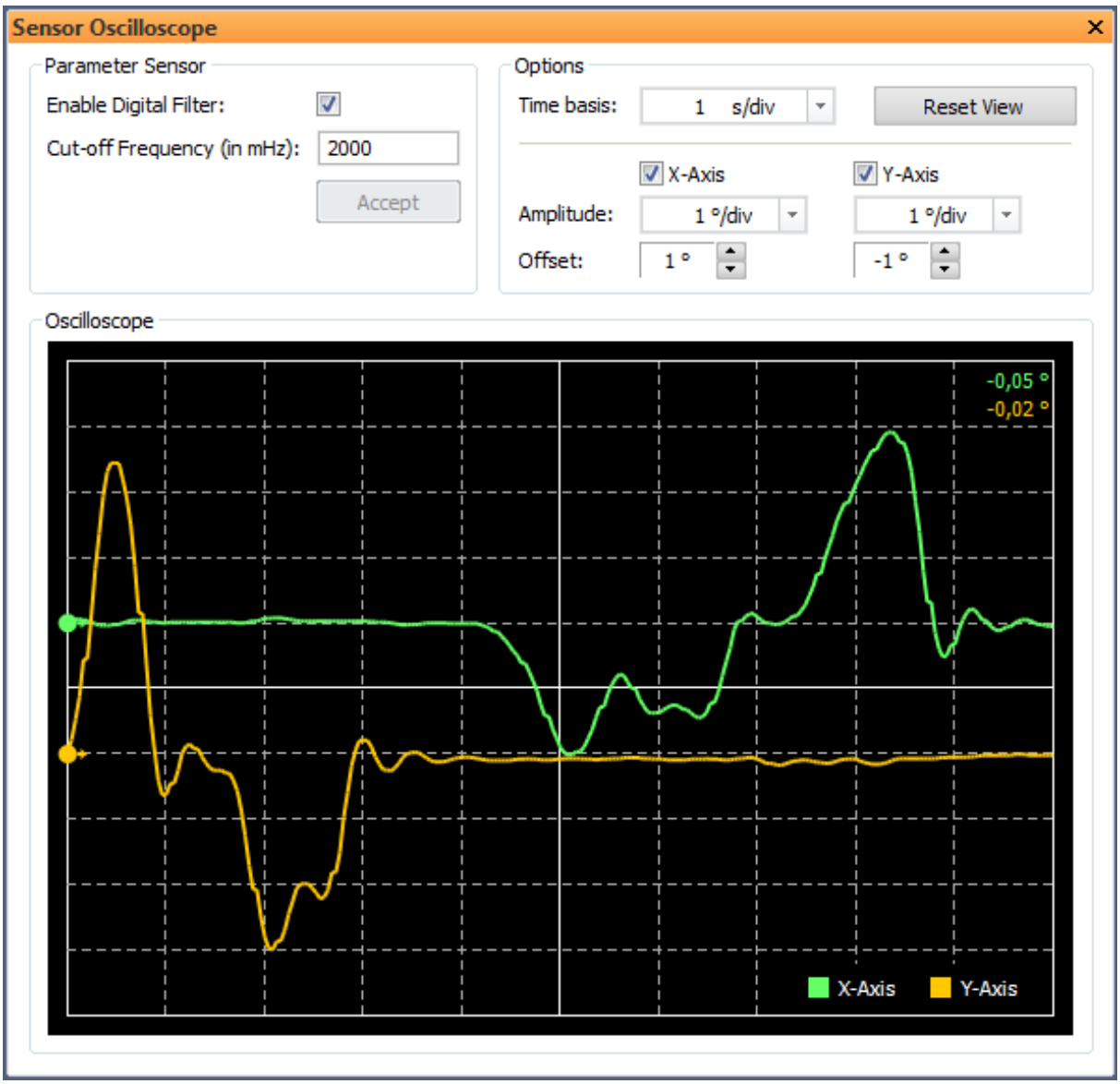

Figure 8: Oscilloscope display of the current angle

4 Ordering Information

Article Number	Product Type	Description/Distinction
PR-23999-02	ISPA1	Starter kit including programming adapter and PC software
BG-03018-00	-	ISPA1 additional power supply 24 VDC (optional)

Table 2: Ordering Information