DIS CONFIGURATOR SET CAN

Manual

2021/12/8 V1.1

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About DIS configurator set CAN

DIS configurator set CAN is a set of configuration tools for configuring following sensors:

- QG65D/QG76D CANopen series
- QG65N2/QG76N2 CANopen series

The configuration set consists of a configuration kit and PC software. The configuration kit can be ordered separately, and the software can be downloaded from our website.

The tool also displays live inclination data from the sensor. The configurator runs best in full HD display mode (1920x1080p)

System Requirements

- A vacant USB port (USB 1.1, USB 2.0 or USB 3.0) at the computer or at a self-powered USB hub connected to the computer.
- Operating system: Windows 10

⚠

Configuration kit

The DIS configurator set CAN comprises:

- Item 1: USB-CAN dongle. (Peak USB-CAN IPEH Interface adaptor)
- Item 2: CAN power box with power adapter connection
- Item 3: 0.3 m CAN cable for connecting the sensor
- Item 4: Power adaptor.

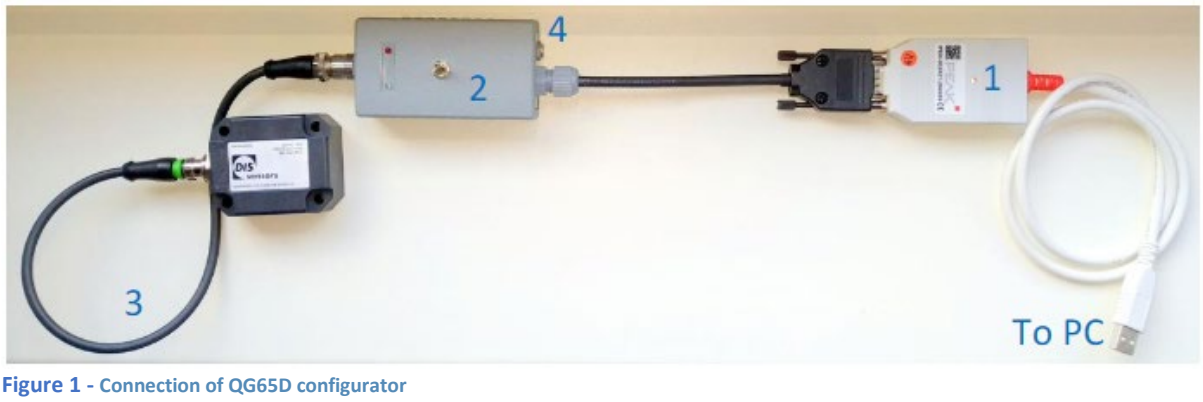

Figure 1 - Connection of QG65D configurator

The USB-CAN dongle (item 1) provides the communication between USB and CAN interface. Note that DIS has modified the Peak USB-CAN IPEH Interface adaptor to forward a 5 V power supply to the CAN power box (item 2). If a standard (unmodified) Peak USB-CAN adaptor is used, the included power adaptor (item 4) must be used.

The CAN power box (item 2) provides the voltage supply to the sensor devices. When only 1 sensor is connected, it can be powered via the USB-CAN dongle (item 1) by the 5 V USB power. If more than 1 sensor is connected, then the power adapter (item 4) must be used instead. This power adapter can support up to 32 Dynamic Inclinometers from DIS sensors.



Figure 2 - Power adapter for the CAN power box

The CAN power box is also equipped with a switch to control the internal CAN bus termination resistor within the CAN power box. The label clearly shows “on” and “off”.



Figure 3 - CAN power box

Two LEDs on the CAN power box indicate the power status. The green LED (connection indication) will be lit when it is connected correctly to the PC. The red LED (current overload indication) will be lit when the USB port is overloaded (max. 250 mA) to protect your PC or laptop. If you use the power adapter to supply the CAN power box, then the internal power supply and the current overload protection are disabled.

⚠ *If the configurator is not used ‘stand-alone’ (i.e. only configurator + DIS sensor) but is connected to a powered CAN bus system, then this CAN bus system must be powered with Vcc > 20 V dc. Otherwise, the USB / DIS configurator will have to supply power to the entire CAN system chain, which can potentially harm the PC and connected items.*

⚠ *DIS configurator set CAN will supply 18Vdc on Vcc and Gnd to the connected CAN systems/CAN sensors. Connecting sensors from other brands could potentially harm the equipment.*

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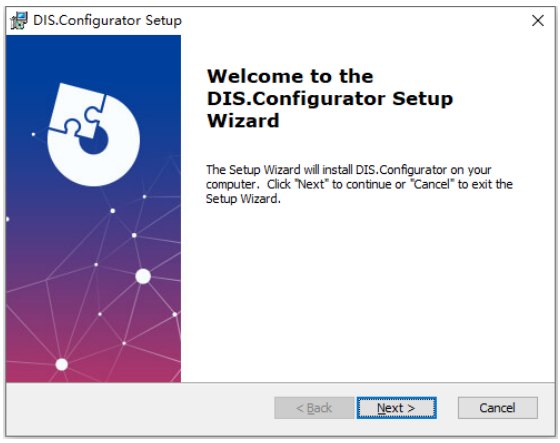
PC software

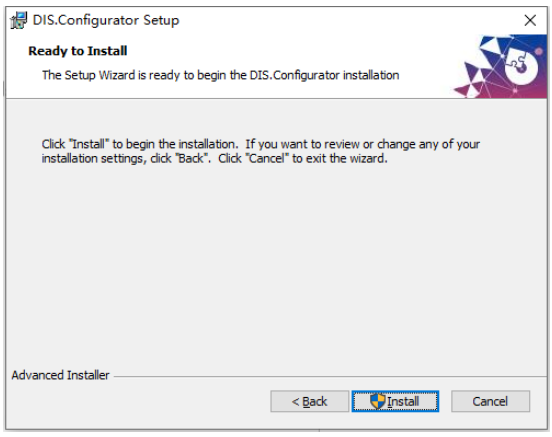
The PC software and a detailed manual can be download from the DIS website free of charge. The software provides a portal for both sensor configuration and live data monitoring.

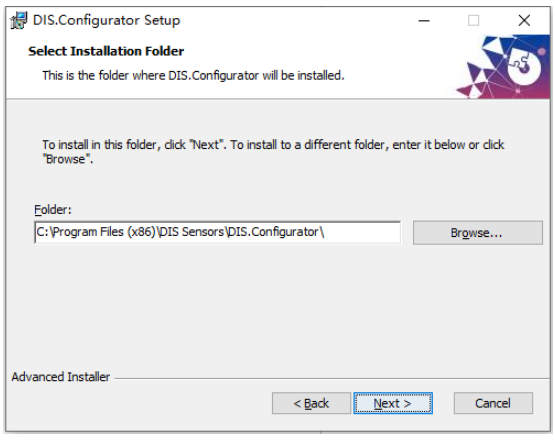
Installation guide

This PC software can only be installed in Windows 10.









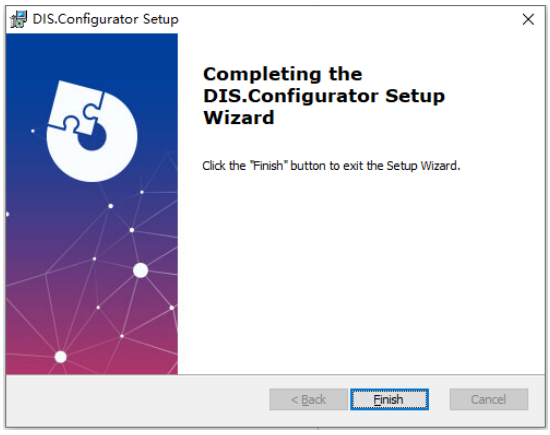


Figure 4 – Installation wizard.



The software window contains both information of the pc software and the sensor information.

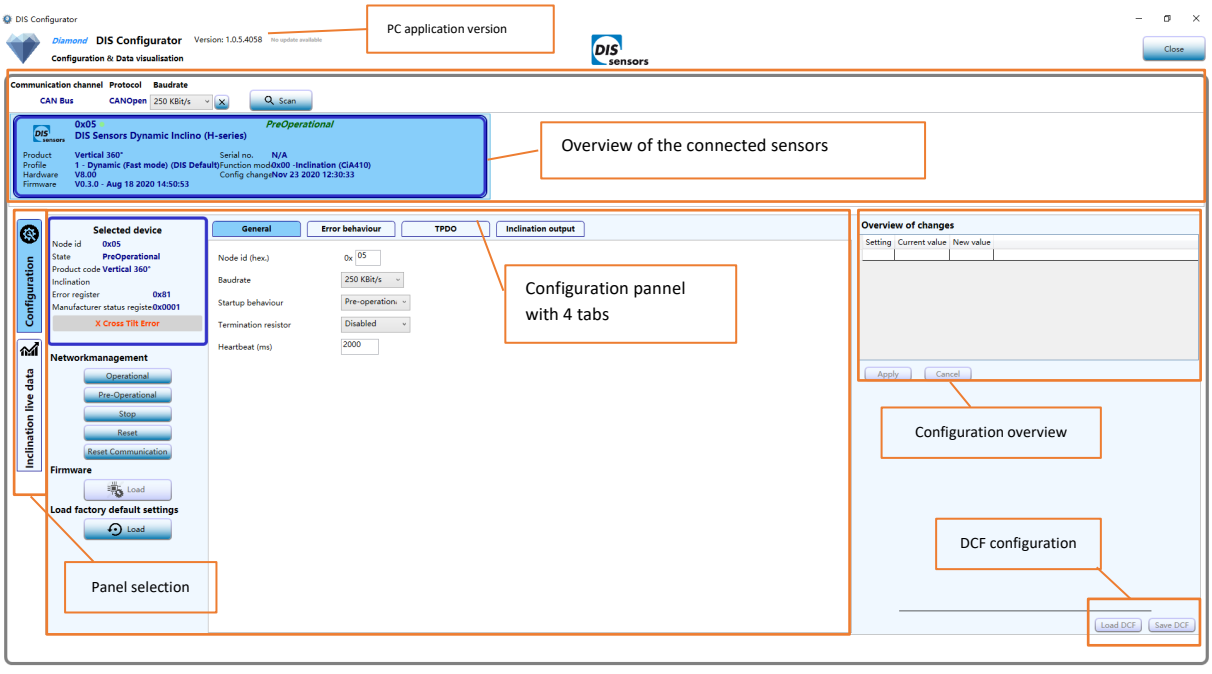


Figure 5 - Start page configuration software.

PC Software update

The version of the PC software is shown on the top of the window. The software can detect if updates are available.



Figure 6 - version of the PC software

Whenever a new version is available, the text “No update available” will be replaced with an “update” button.

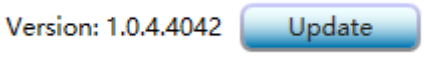


Figure 7 - check for update



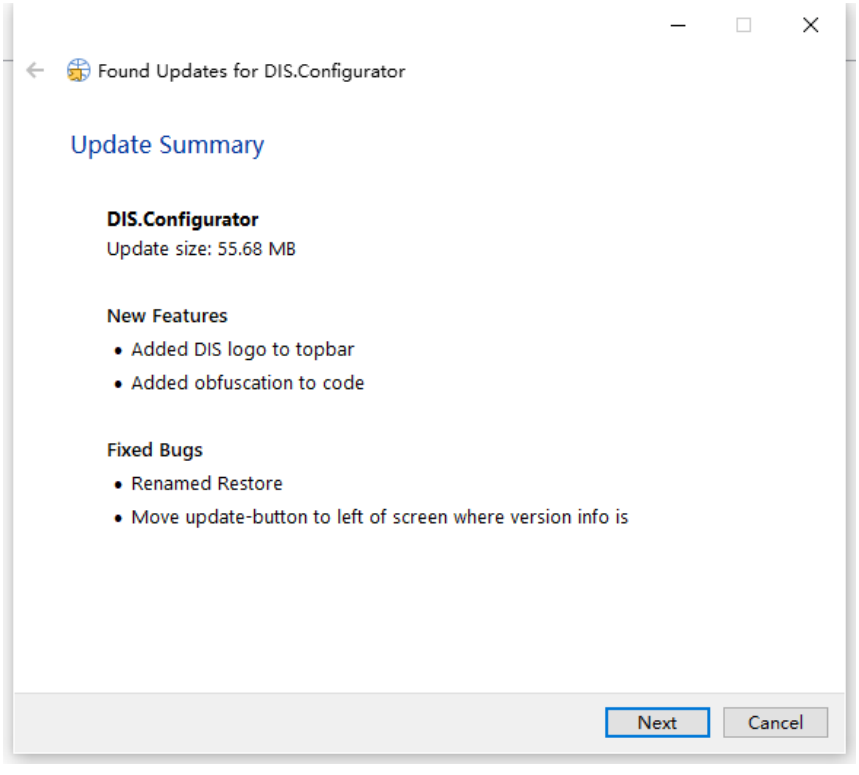
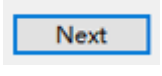


Figure 8 - Update summary



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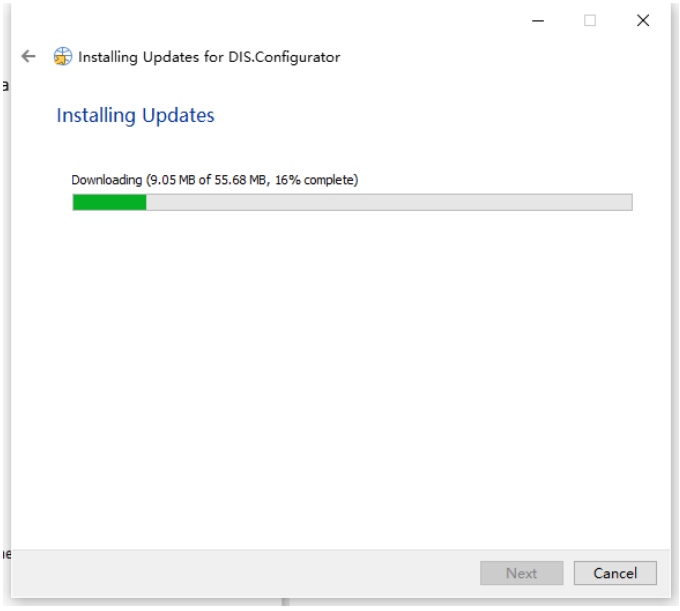

Figure 9 - status bar



Figure 10 - setup wizard

The Peak Driver is included in the setup program to ensure your computer has the latest USB driver for the CAN communication, do not uncheck it to prevent driver problems..

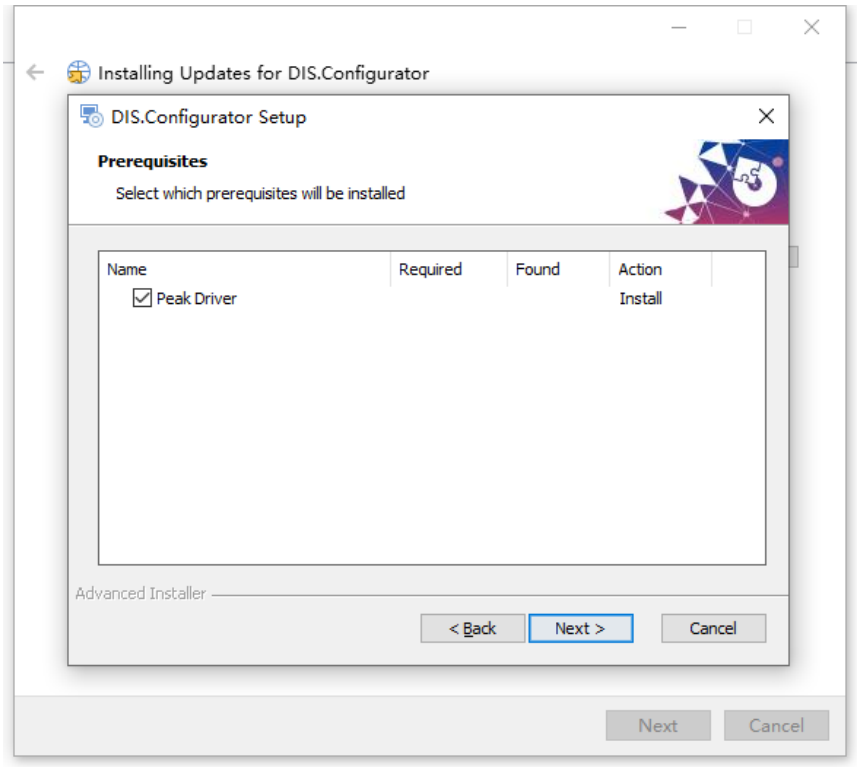

Figure 11 - Peak Driver

After the PEAK driver is installed, the Configuration software setup wizard will start. Follow the wizard to finish the installation for the new update.

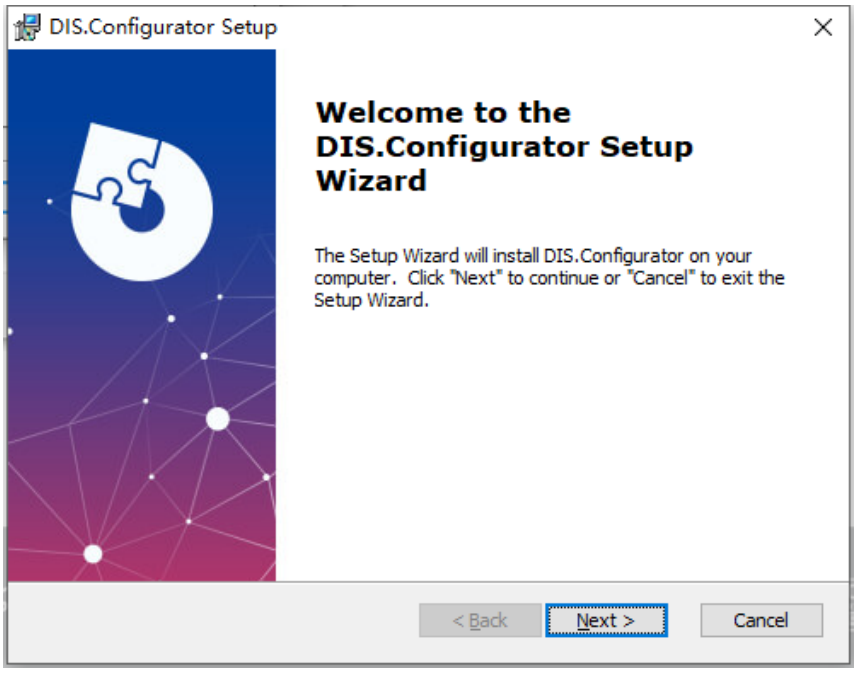

Figure 12 - Setup Wizard start page.

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General steps for the sensor configuration

Follow the steps to configure your sensor. After the changes are saved to the sensor, it will be automatically restarted by the pc application.

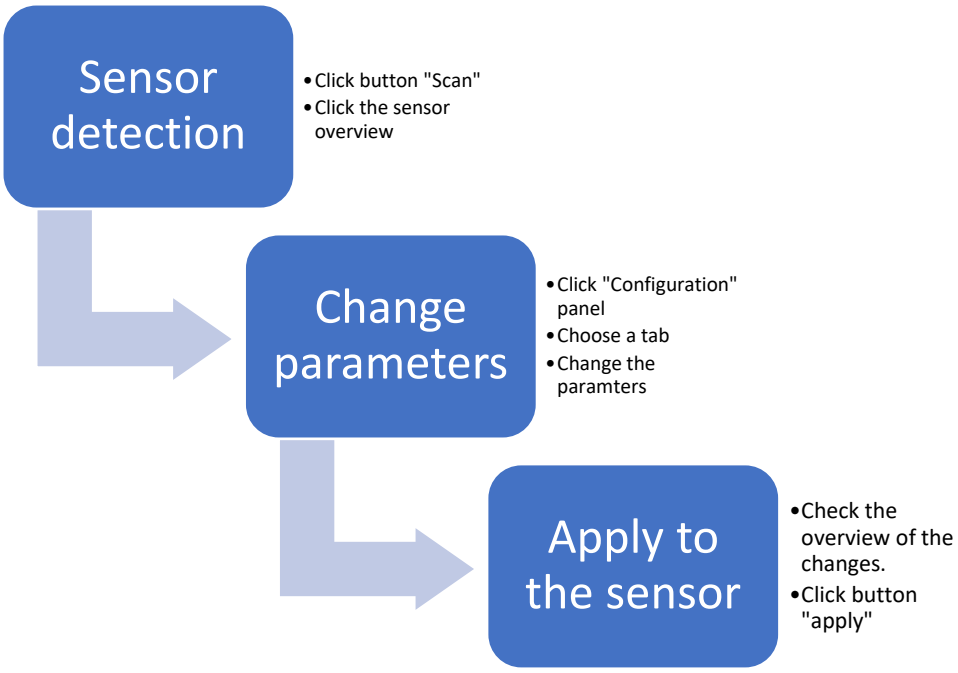

Figure 13 - General steps for the sensor configuration

When the button “Scan” is clicked, the software will scan the CAN bus and match the baudrate that your sensor is configured with.

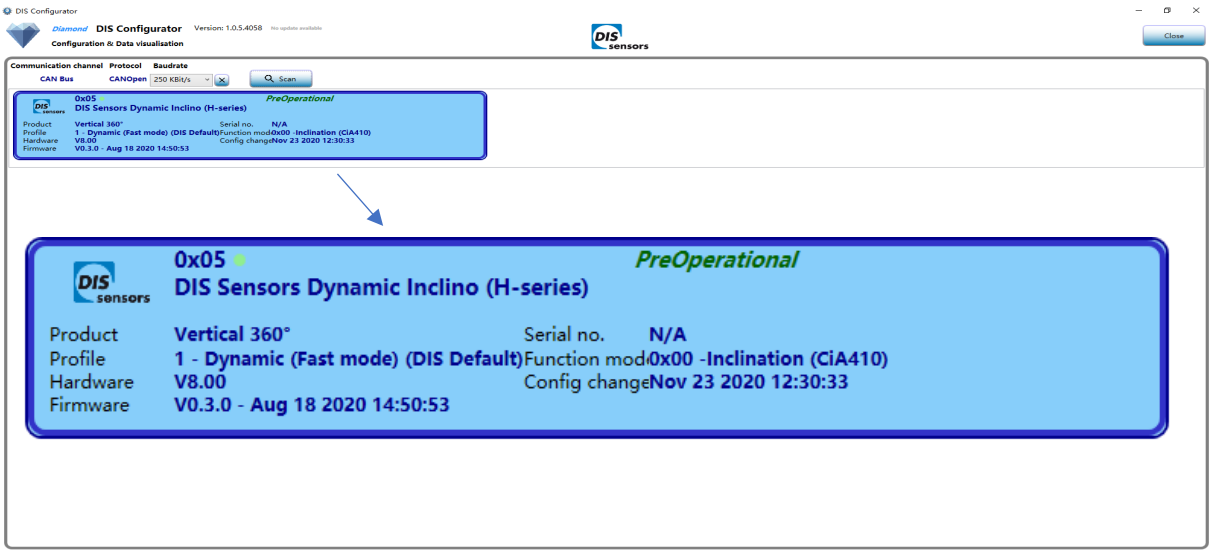

Figure 14 - Sensor overview

Name	Description	Example
Product	Product code showing the measuring axis and the range. (object 1018_h)	Vertical 360° - 1 axis with measuring range 360° Horizontal plane 2x ±90° - 2 axis, measuring range ±90°
Serial No.	Batch number. (object 1018_h)	77542822h= 2002004-002d
Profile	Application profile name (object 3004_h)	Profile 1 –Dynamic (fast mode)
Function mode	Function mode (object 3007_h)	Inclination (CiA410)
Hardware	Sensor hardware platform version (object 1009_h)	V8.00
Config change	The last date and time when the configuration is changed (object 1020_h)	000034A4 = Nov 23 2020 02AF28FD = 12:30:33
Firmware	Software of the sensor (object $100A_h$)	V0.3.0

Table 1 – Sensor overview

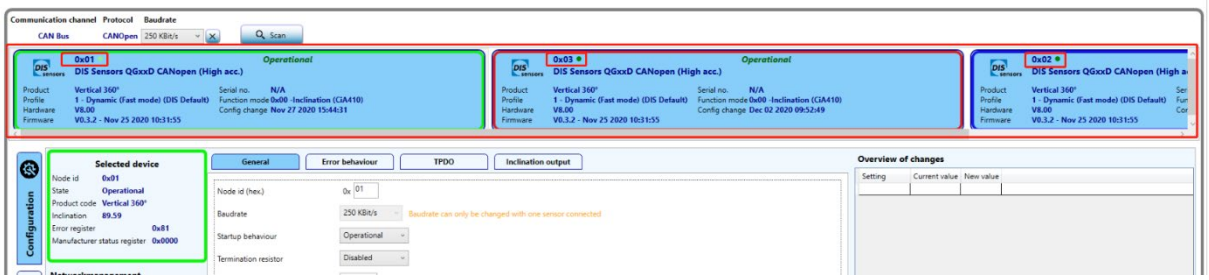

Figure 15 - Multiple sensors

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Parameter tabs

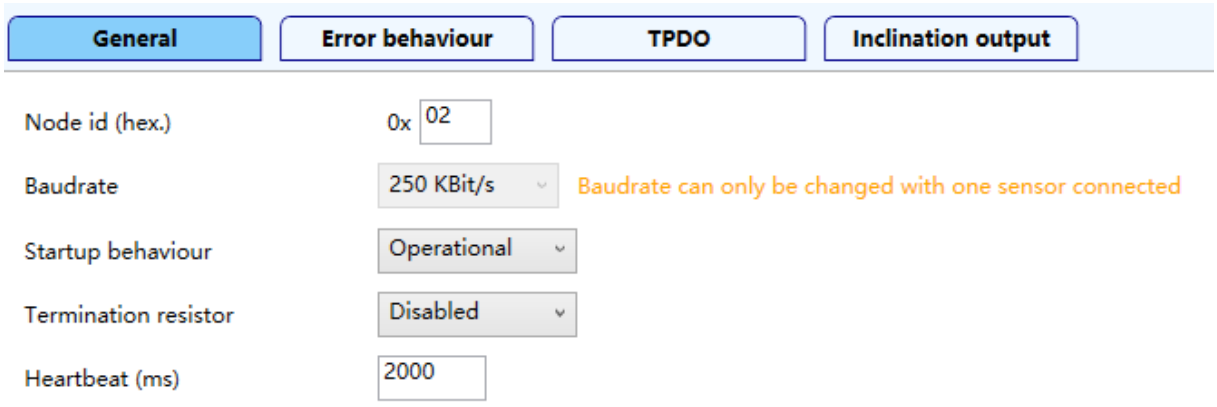

Figure 16 – Tab General

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Error behaviour

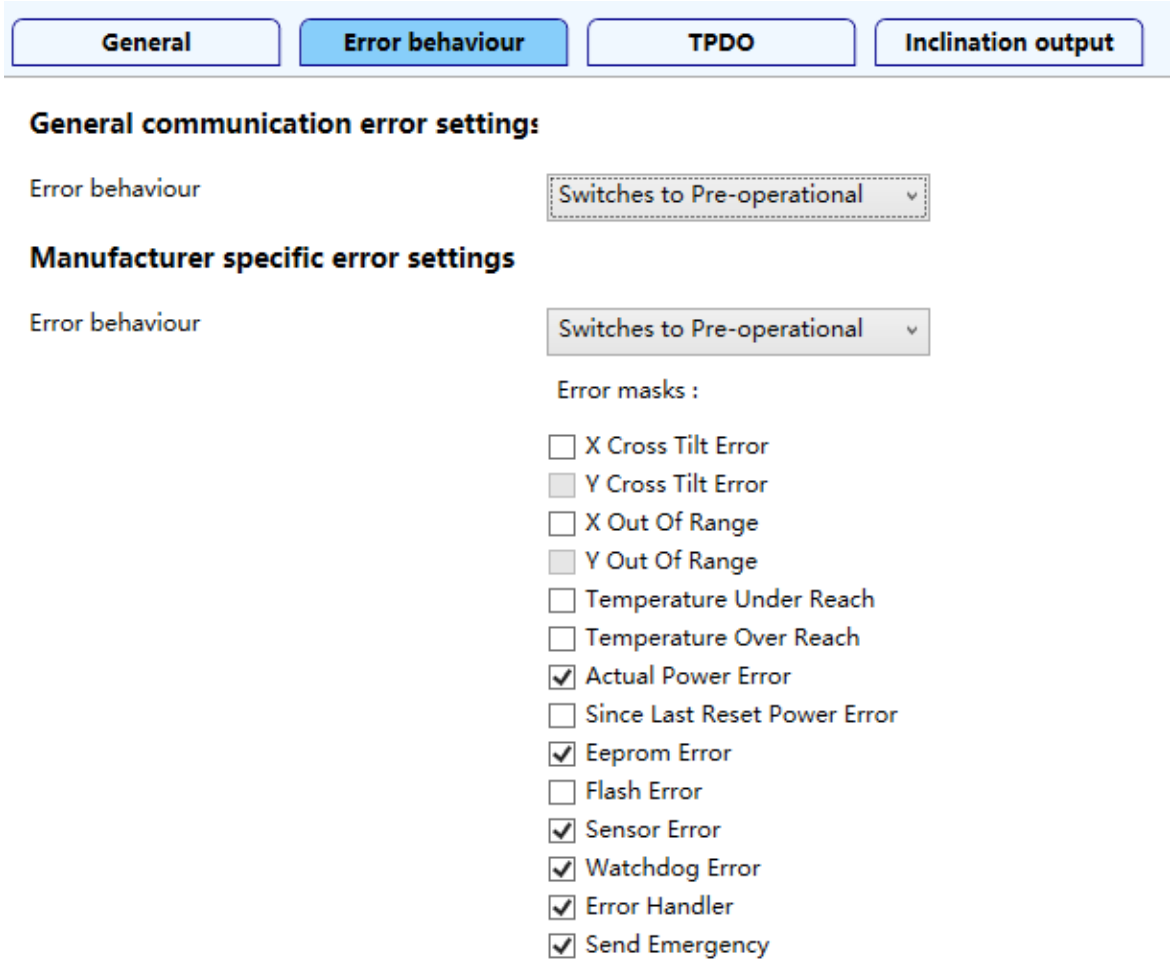

Figure 17 - Tab Error behaviour

TPDO

The communication parameters and mapping parameters of the TPDOs can be configured in this tab. TPDO is explained in the following chapters in the user manual QG65D CANopen Dynamic Inclinometer.

- 6.6 Output format
- 7.3 PDO (Reading sensor output)
- 8.1.11 Object 1800h, 1801h TPDO Communication parameter
- 8.1.12 Object 1A00h, 1A01h TPDO Mapping parameter

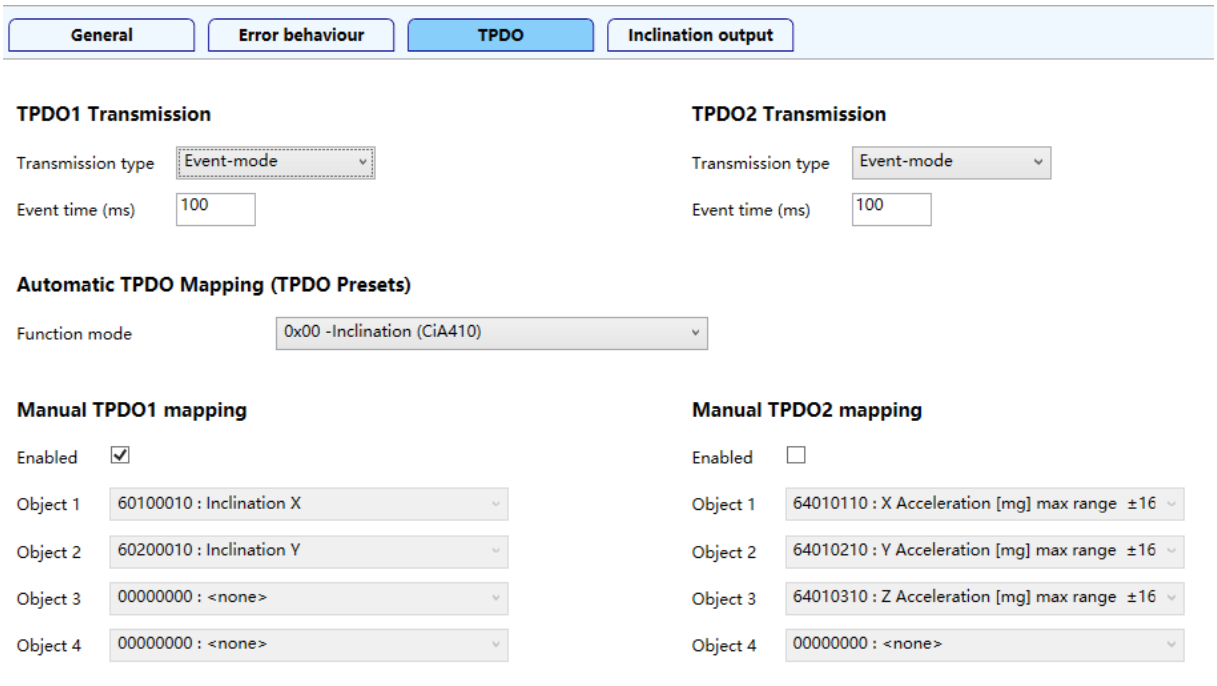

Figure 18 - Tab TPDO

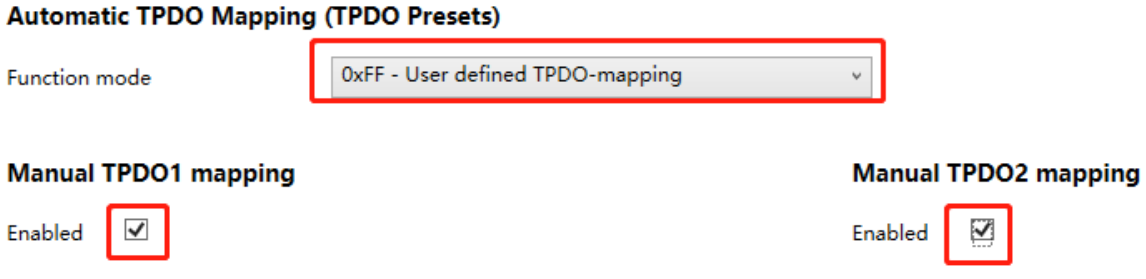

Figure 19 - Enable manual TPDO mapping

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Inclination output

In this tab, all parameters related to the inclination measurement can be configured.

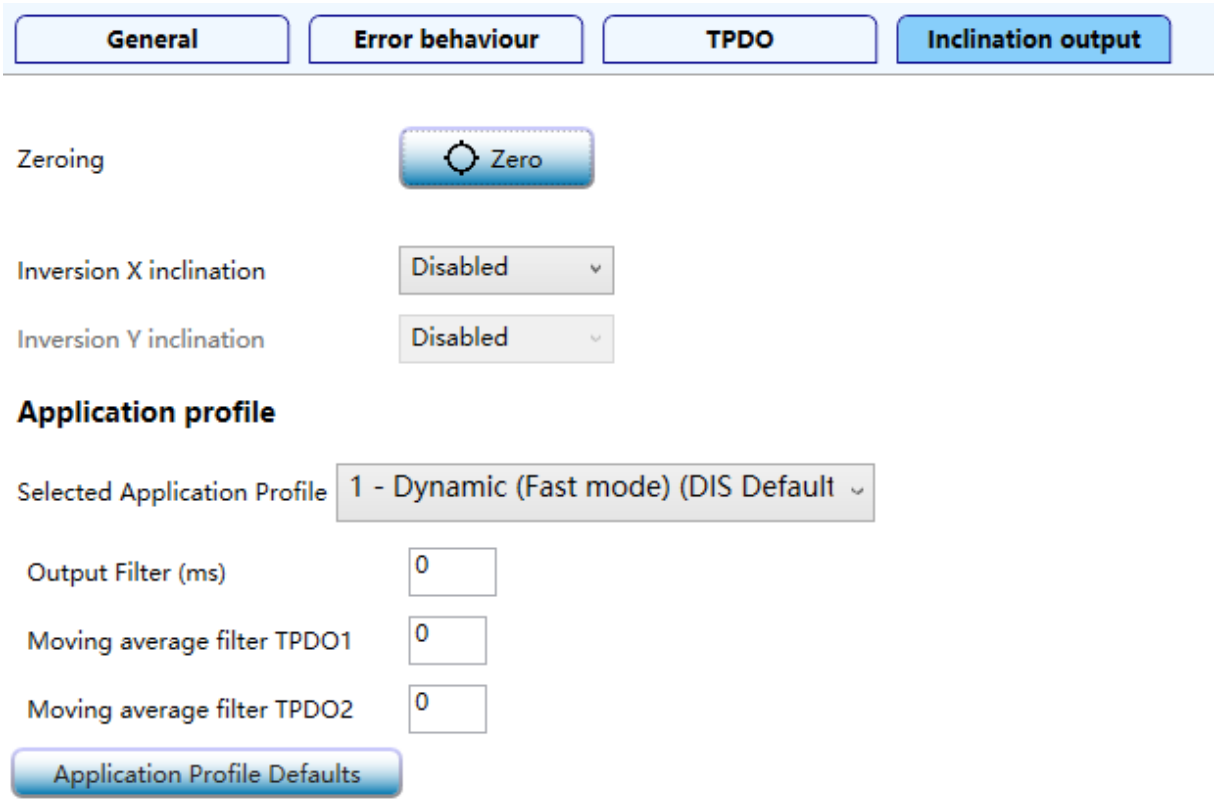

Figure 20 - Tab Inclination output

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Sensor configuration

How do I zero the sensor?

Configuration panel → Tab Inclination output → Zeroing



Figure 21 – zero adjustment

Set the sensor at a new zero position. Click the blue button “zero”. The sensor will be immediately zero adjusted without a click of “apply”.

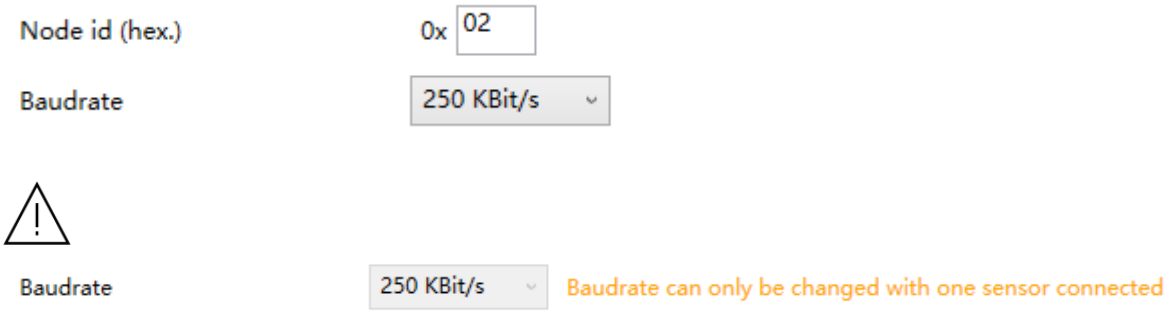
How do I change the TPDO communication parameters such as TPDO event time?

Configuration panel → Tab TPDO → TPDO Transmission type



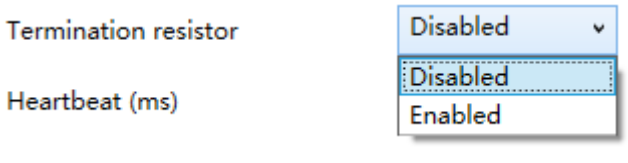
How do I change the CAN parameters such as Node ID and baudrate, etc?

Configuration panel → Tab General →



How do I turn on/off the internal termination resistor?

Configuration panel → Tab General → Termination resistor



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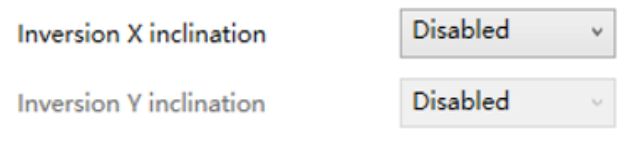
How do I inverse the output direction?

Configuration panel → Tab Inclination output → Inversion



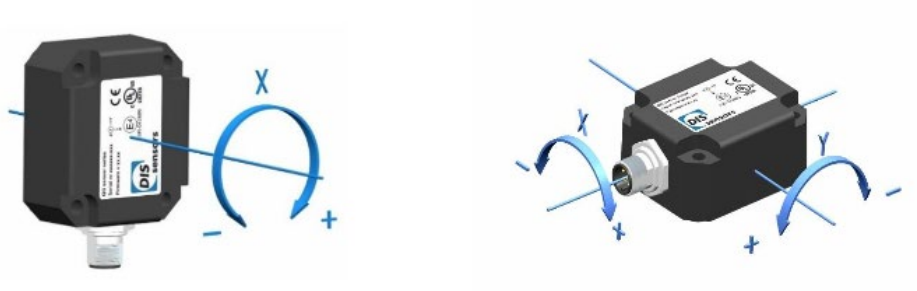


Figure 22 - DIS default measuring direction

If the inversion is enabled, the measuring direction will be inverted (± inverted).

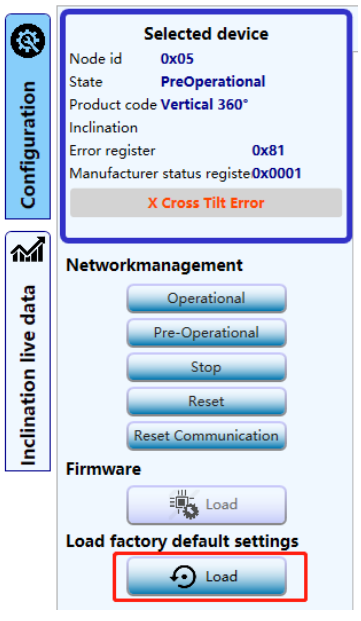


Figure 23 - Load factory default settings

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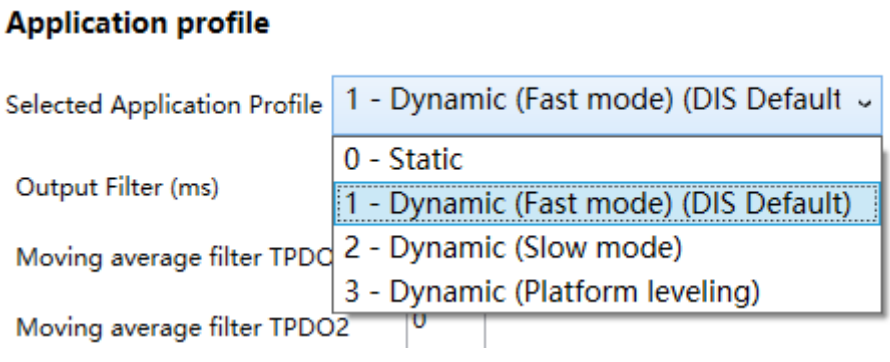
Where can I select application profile?

Configuration panel → Tab Inclination output → Application profile



Application profile is explained in 6 .5 Application profiles in the user manual QG65D CANopen Dynamic Inclinometer. How do I set the filters to improve the inclination output?

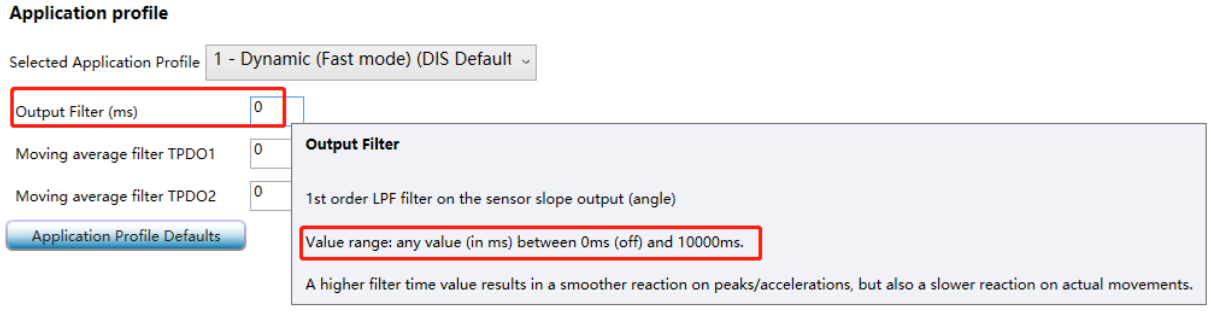


Figure 24 – Output filter

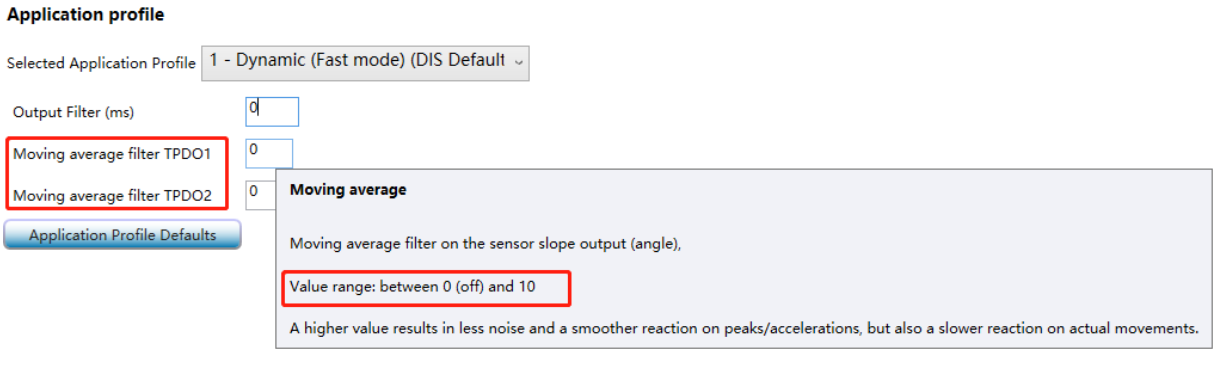


Figure 25 - Moving average filters.

Output filter and moving average filter are explained in 6.3.3. Digital filters in the user manual QG65D CANopen Dynamic Inclinometer.

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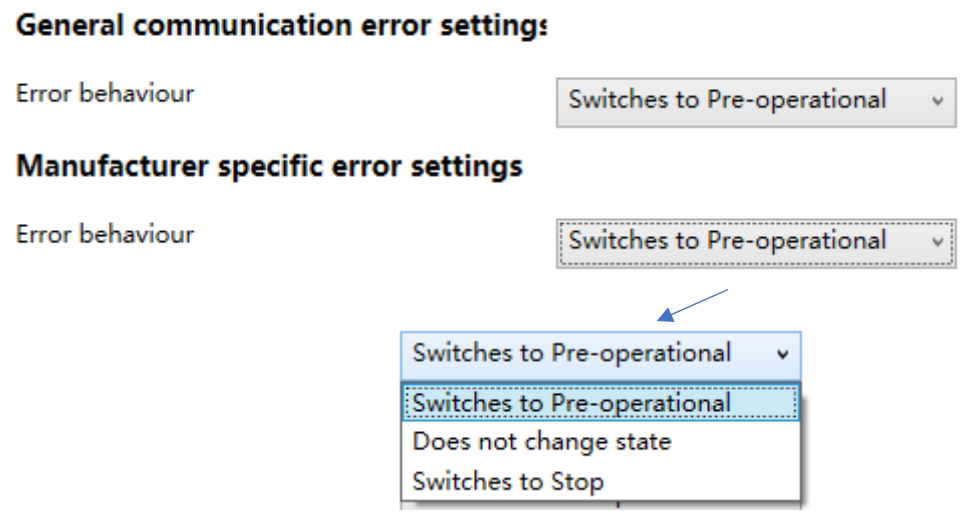
How do I configure the sensor error behaviour?

Configuration panel → Tab Error behaviour



The error behaviour is explained in 8.1.10. Object 1029h Error behaviour in the user manual QG65D CANopen Dynamic Inclinometer.

How do I customise the sensor output?

Configuration panel → Tab TPDO → Manual TPDO mapping

1. Select function mode "0xFF – User defined TPDO-mapping".
2. Select the output for each object for the TPDO message.

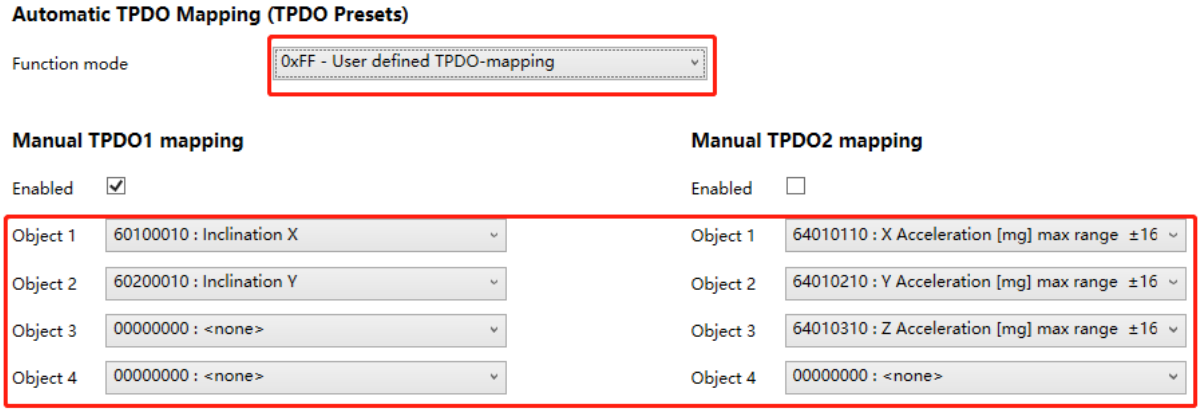


Figure 26 - TPDO mapping

Sensor outputs are defined in 8.3.4 Object 6401h Sensor outputs in the user manual QG65D CANopen Dynamic Inclinometer.

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Inclination live data

Only inclination output can be live monitored with the configuration software.

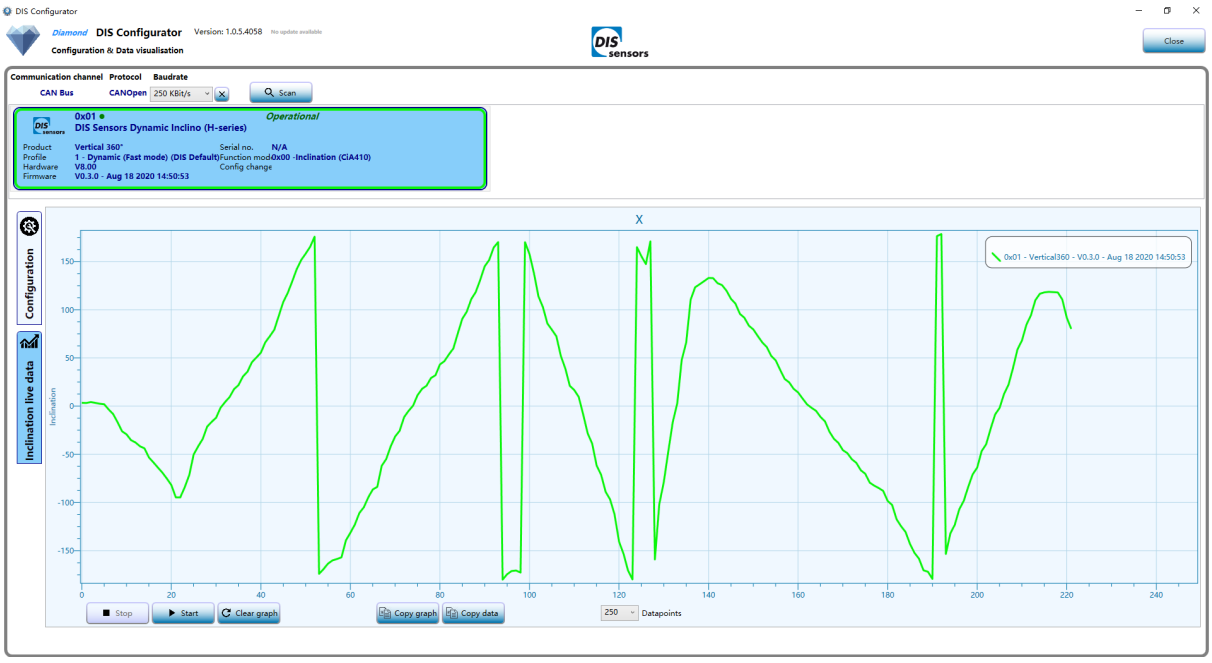
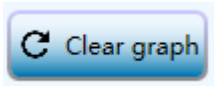
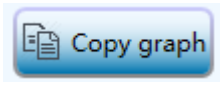


Figure 27 - Live data









To get to your clipboard history at any time, press **Windows logo key** + **V**. You can also **paste** and **pin** frequently used items by choosing an individual item from your clipboard menu.

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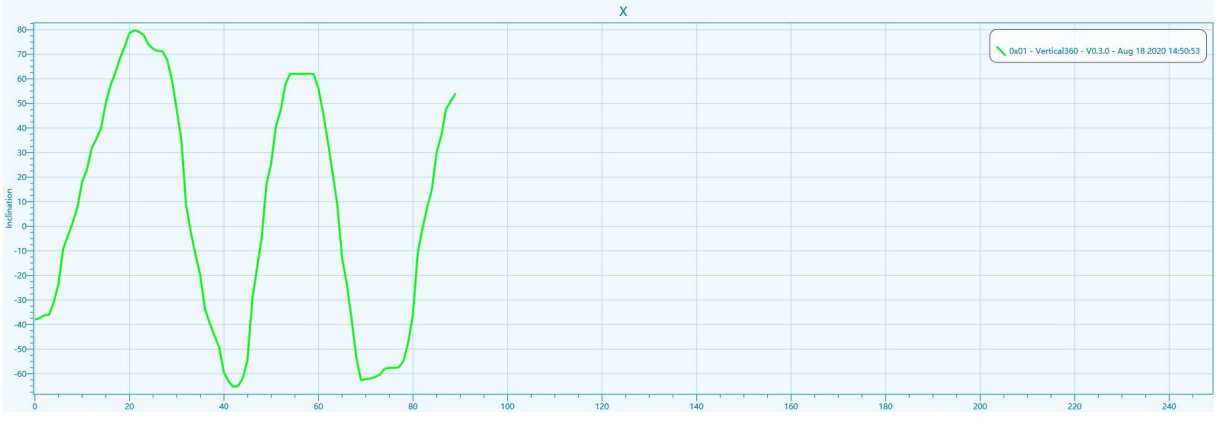
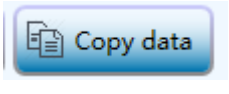
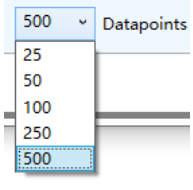




Node : 01 - Longitudinal
200
200
66.83
68.49
68.1
72.95
79.51
88.96
95.85
91.81
86.25
72.77
56.69
13.15
-11.42
-57.47
-68.36
-65.09
-48.7
-27.05
-14.54
10.32
25.64
42.64
83.41

Figure 28 - output data



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