Auxiliary software for digital Gauss-/Teslameter CYGM99[A/B/C]

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1. Installation

1.1 Installation of the required USB drivers

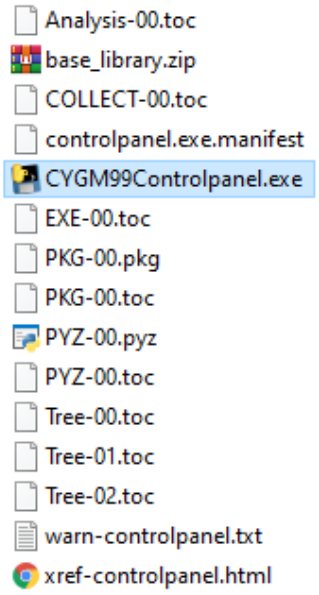
The connection to the Gaussmeter is established internally via a USB UART chip. For this chip you have to install the driver of the chip manufacturer on the computer.

You can find the correct driver on the manufacturer's website under the following link:
http://www.wch-ic.com/downloads/CH341SER_ZIP.html
or search the Internet for "CH341SER driver“.

Follow the instructions of the installation program to install the driver.

1.2 Installing the auxiliary software.

Unzip the .zip file to your destination directory. Locate the .exe file in the "dist" folder you just unzipped and run the file.



2. Introduction

The auxiliary software can be operated via a central panel. The panel offers a selection of further options for operation.

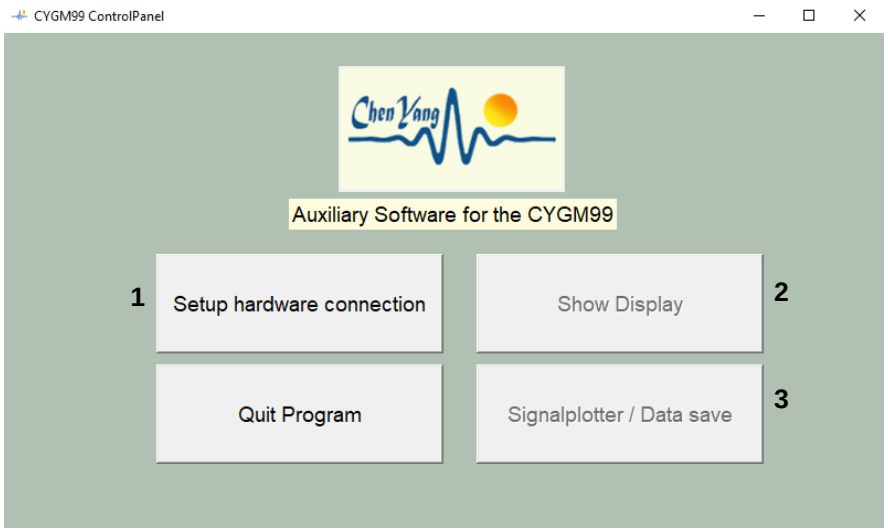


Figure 1 The control panel

The panel offers three options:

1) Setup hardware connection

Here you can set the COM port via which the accompanying software communicates with the CYGM99[A/B/C]. To find out via which COM port the CYGM99[A/B/C] is connected to your computer, open the device manager under Windows and search for „CH340“ under the "Ports (COM&LPT)" tab. The Gaussmeter logs on to the computer under this name. Enter the number of the COM port into the input field and click on "Done" in the lower left corner of the window.

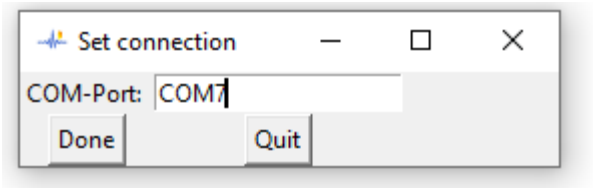


Figure 2 Setting up a hardware connection

Once the hardware connection is established, the other two functions of the auxilliary software can be accessed.

2) **Show display**

The show display subroutine mirrors the physical Gaussmeter‘s interface. It can be operated in exactly the same way as the Gaussmeter.

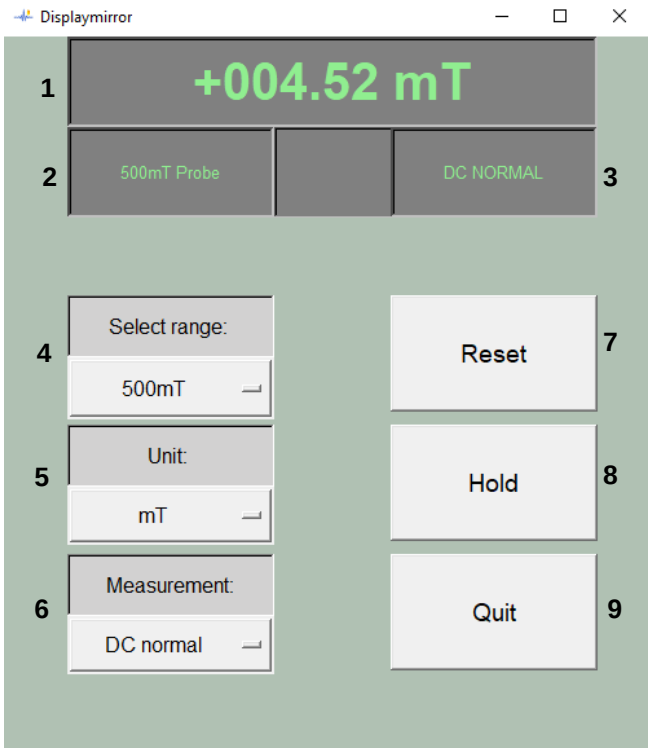


Figure 3 display mirror subprogram

Analogous to the physical Gaussmeter, the buttons behave as follows:

Range: Click on the Range button (**4**) to switch between the two ranges of the probe. The current range is shown in display **2**.

Unit: The drop-down menu Unit (**5**) offers the choice between the measuring units milli Tesla (mT) and Gauss (Gs). The current unit is shown in display **1**.

Measurement: The measurement menu (**6**) selects the measurement mode. The current measurement mode is shown in display 3. The following are available for selection:

> **DC normal:** displays the current value of a DC measurement.
> **DC maximum:** Displays the highest value of a DC measurement in terms of amount.
> **DC minimum:** Displays the lowest value of a DC measurement in terms of amount.
> **AC RMS:** Calculates the RMS value of an alternating field.
> **AC Peak:** Calculates the peak value of an alternating field.

Reset: Clicking on the Reset button (**7**) initializes a zero point reset of the measuring instrument. The currently measured measuring value becomes the new zero point.

Hold: Clicking the Hold button (**8**) freezes the current display on display **1**. When the button is pressed again, the display is updated again.

Quit: The quit button (**9**) terminates the show display subprogram.

3) Signalplotter / Save data

The signal tracer draws a graph of the last measured values. In this view, deviations and transients can be detected more easily.

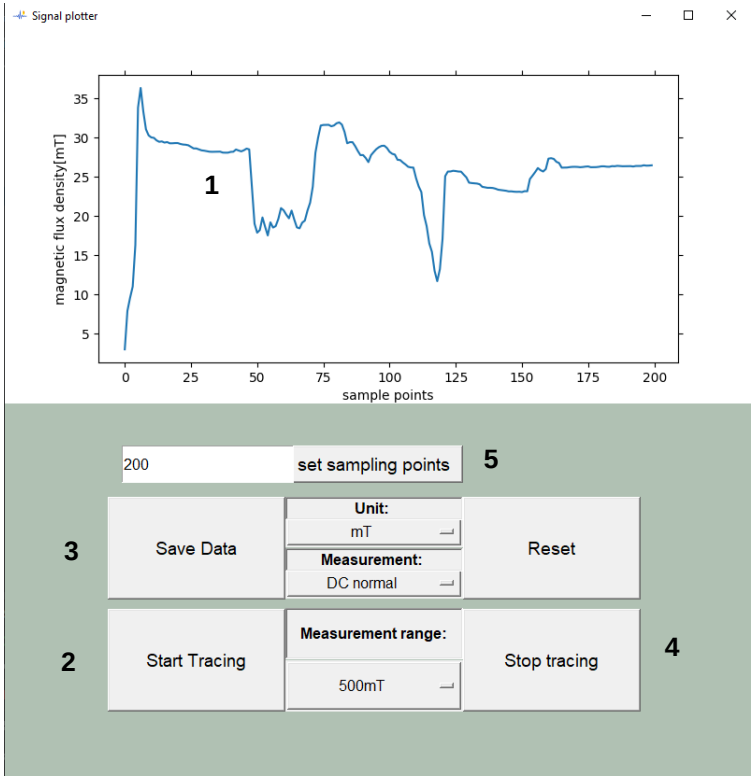


Figure 4 Signal plotter subprogram

The tracer subprogram is shown in the figure above. As in the Show-Display subprogram, it is possible to control the Gaussmeter via the buttons.

Set sampling points: Choose how many sampling points shall be saved and displayed (**5**). The standard size and minimum size are 200, the maximum size is 4000. This button is only enabled while the tracing process is stopped.

Start Tracing: By clicking on the Start Tracing button (**2**) the tracing of the signal commences. The signal is displayed on graph **1**.

Stop Tracing: A click on the Stop Tracing button (**4**) stops the tracing process.

Additional Feature: Once the tracing process is stopped via the "Stop Tracing" button, it is possible to save the displayed graph in an .xlsx table.

To do this, click on the "**Save Data**" button (**3**). A window is opened and prompts you to select a folder in which the table is to be saved. The program will then save the measurement data like this:

Measurement results with:	CYGM99A
Probe:	500mT
Date:	2021-09-21 13_38_23
Number of data points:	200
samplepoint:	measurement results in [mT]:
1	76,59
2	79,22
3	79,63
4	79,65
…	…

Table1: Example view of a saved table