

FUEL LEVEL SENSORS



SETTING UP AND
CONFIGURING
FUEL LEVEL SENSORS
RS 232/485

NIKOLIN LTD.

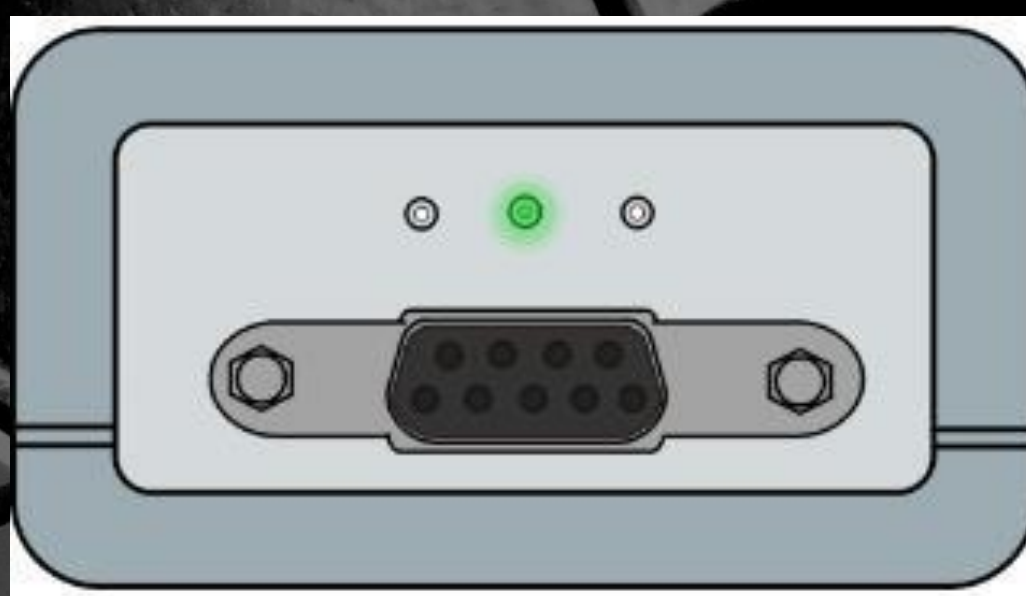
**Download archive with
DUTConfig program.**

**Download the latest virtual COM port
drivers according to your OS version.**

**Connect the sensor to a PC via an
adapter via the RS485/RS232 interface.**



RS232 mode



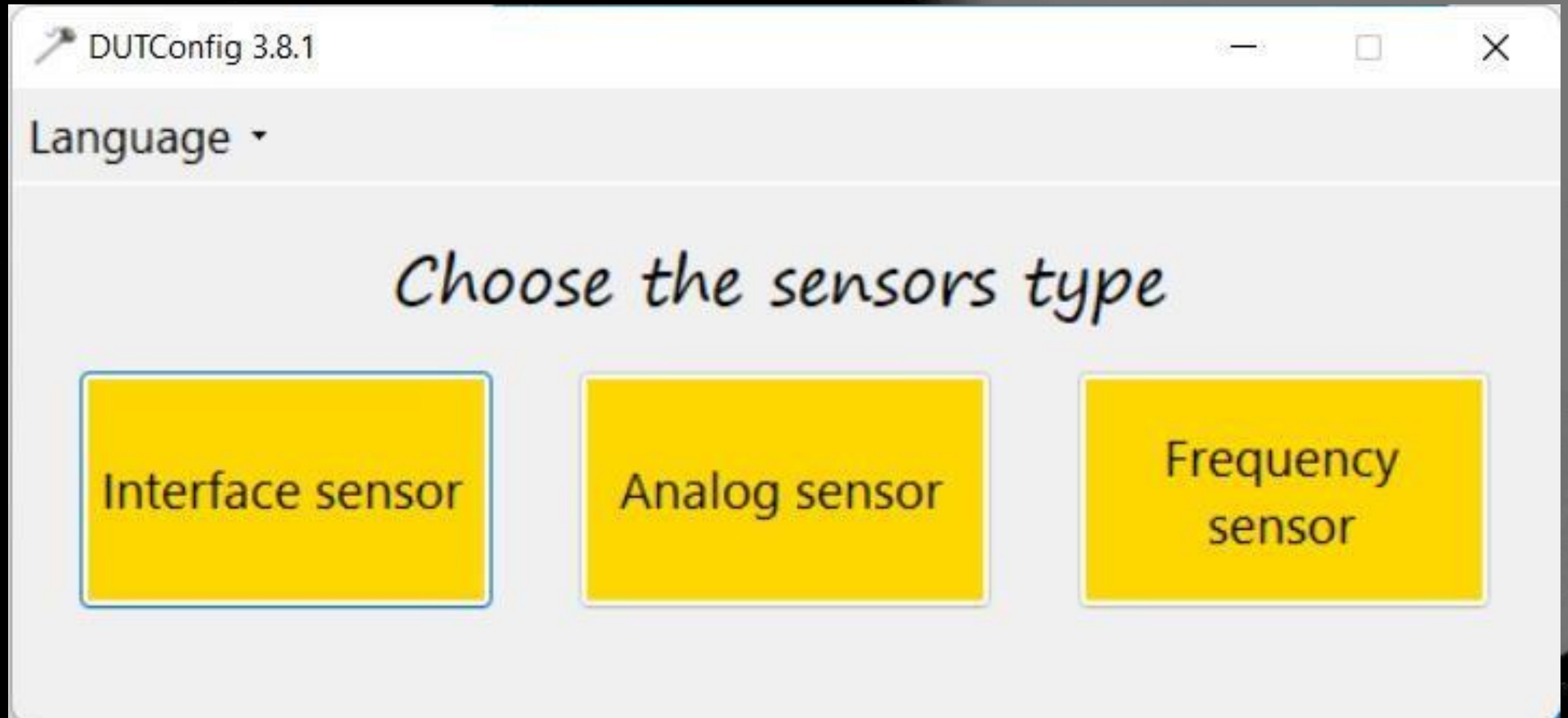
RS485 mode

**Select the RS232/RS485 operating mode
on the adapter.**

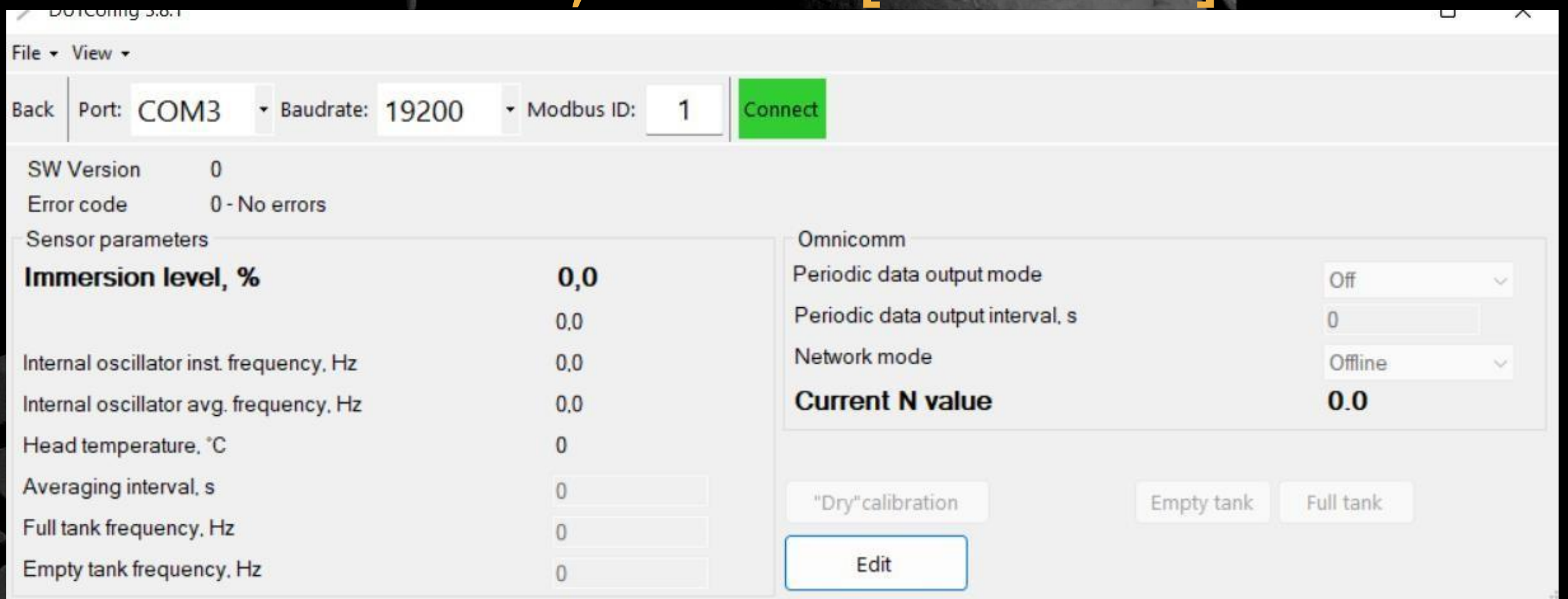
**Attention: the color of the wires on
the cable.**

**Red +
Brown -
Yellow RX (A)
Black TX (B)**

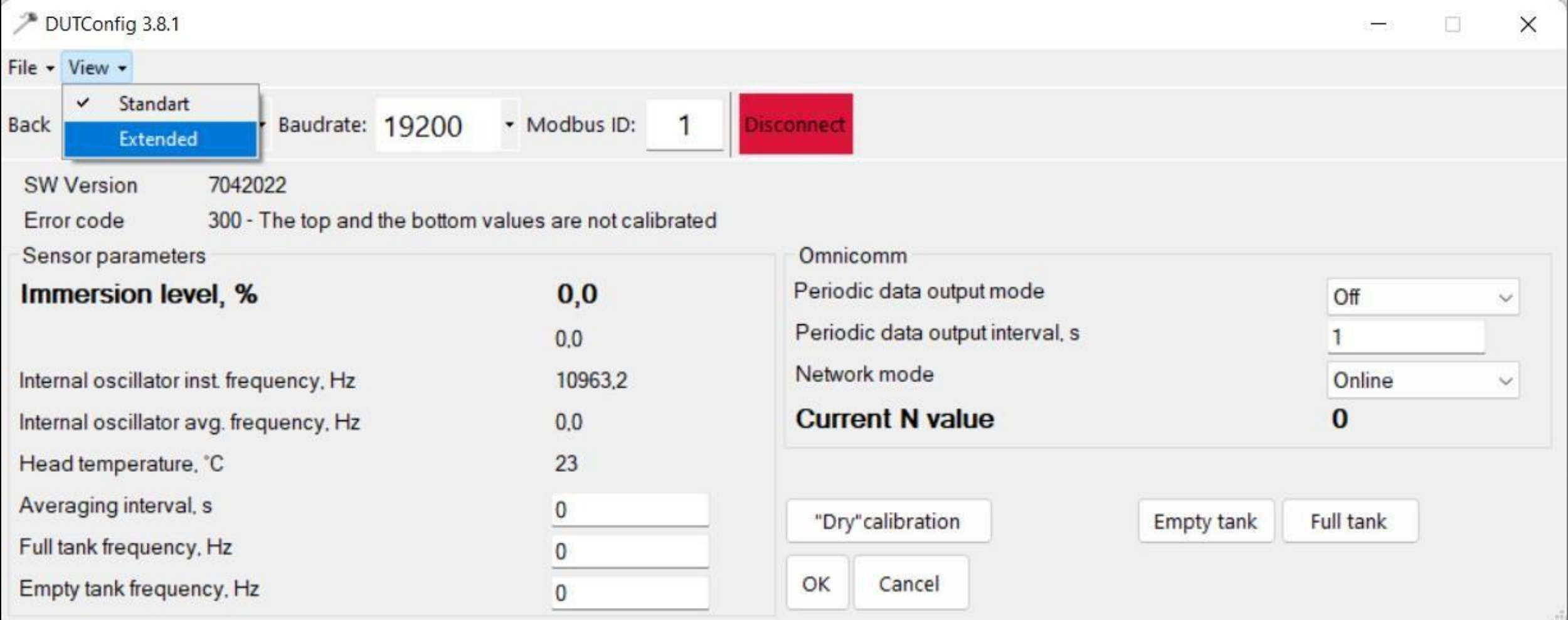
Select the sensor type in DUTConfig software: Interface



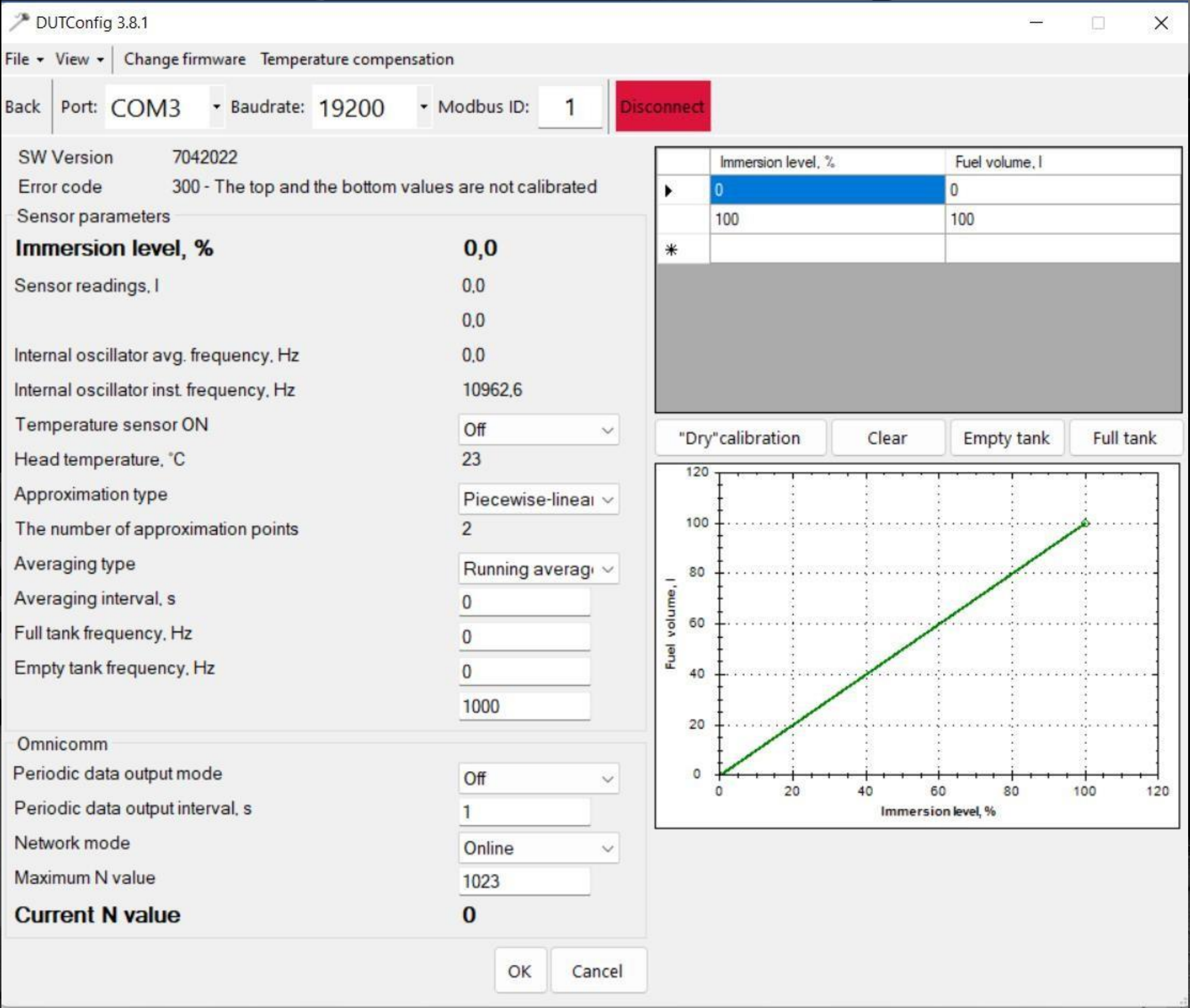
Select Port, Press [Connect] button



ATTENTION!!! Before calibrating the sensor, it is necessary to cut the sensor 2-4 cm shorter than the tank height, make sure that **Thermal compensation is disabled**, Averaging interval is 0. And also set the Maximum value N 1023 ... 4095 (recommended 4095).



To do this, select the menu Mode → Advanced in the main program window.

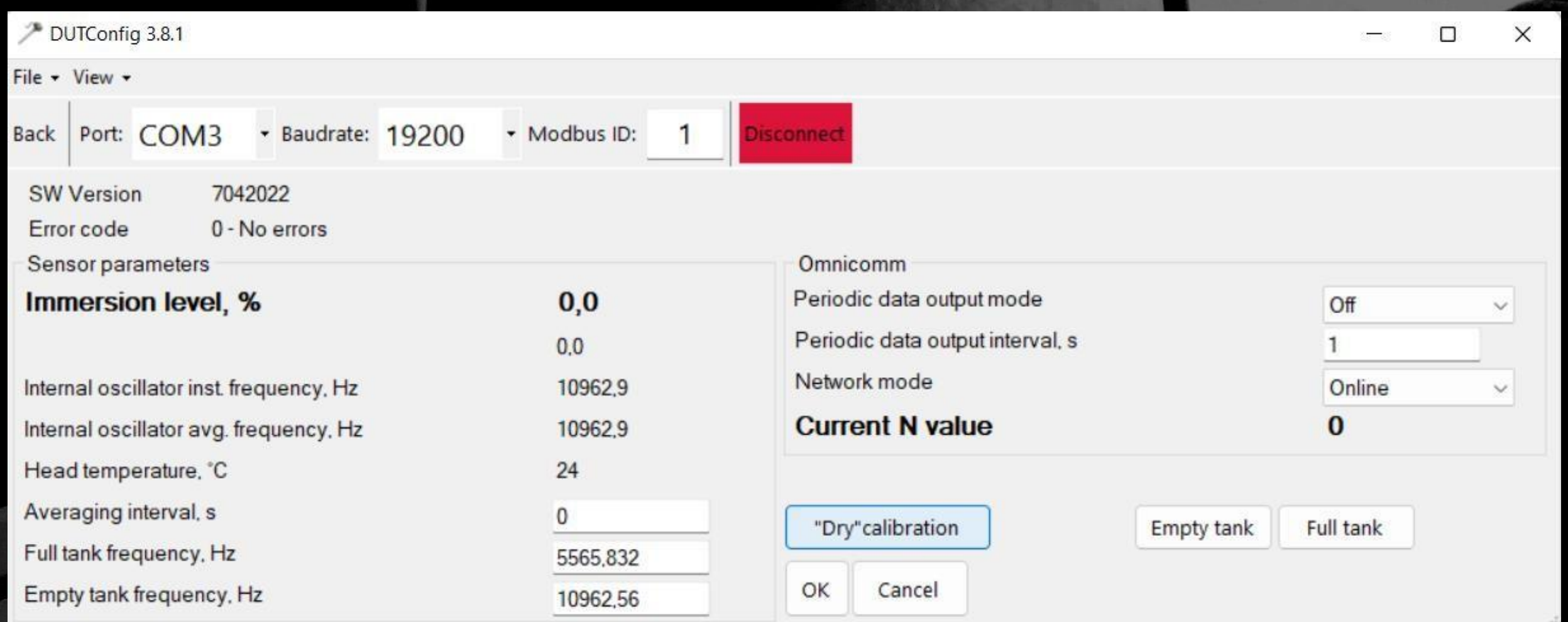


Press the [Set] button - Set the desired values - Press the [OK] button.

FLS calibration

Dry Calibration Method

- 1 Click the **[Configure]** button in the DutConfig software.
- 2 Press the **Dry Calibration** button
- 3 Press the **[OK]** button.



The screenshot shows the DUTConfig 3.8.1 software window. At the top, there are menu options 'File' and 'View'. Below them, a configuration bar shows 'Port: COM3', 'Baudrate: 19200', and 'Modbus ID: 1', with a red 'Disconnect' button. The main area is divided into two panes. The left pane, titled 'Sensor parameters', lists various sensor data: 'Immersion level, %' (0,0), 'Internal oscillator inst. frequency, Hz' (10962,9), 'Internal oscillator avg. frequency, Hz' (10962,9), 'Head temperature, °C' (24), 'Averaging interval, s' (0), 'Full tank frequency, Hz' (5565,832), and 'Empty tank frequency, Hz' (10962,56). The right pane, titled 'Omnicom', shows 'Periodic data output mode' (Off), 'Periodic data output interval, s' (1), 'Network mode' (Online), and 'Current N value' (0). At the bottom of the right pane, there are buttons for '"Dry" calibration', 'Empty tank', 'Full tank', 'OK', and 'Cancel'.

- 4 The values for an empty and full tank will automatically fit into the required lines.

Tank calibration

Before calibration it is necessary to completely drain the fuel from the tank. Install the sensor on the tank using the mounting kit. Pour the first few portions of fuel into 5-10 liters. You can then increase the portion size. We fix the Current value of N, which corresponds to the amount of fuel in the tank. Write the compiled table of values into the terminal software.

The screenshot shows the DUTConfig 3.8.1 software window. At the top, there is a menu bar with 'File' and 'View'. Below the menu bar, there is a toolbar with 'Back', 'View', a dropdown menu showing 'COM3', 'Baudrate: 19200', 'Modbus ID: 1', and a red 'Disconnect' button. The main area is divided into two panels. The left panel, titled 'Sensor parameters', contains a table of sensor data:

Sensor parameters	
Immersion level, %	6,8
	0,0
Internal oscillator inst. frequency, Hz	10963,0
Internal oscillator avg. frequency, Hz	10963,0
Head temperature, °C	23
Averaging interval, s	0
Full tank frequency, Hz	5565,967
Empty tank frequency, Hz	11802,8

The right panel, titled 'Omnicommm', contains several settings:

- Periodic data output mode: Off
- Periodic data output interval, s: 1
- Network mode: Online
- Current N value: 69**

At the bottom of the right panel, there are three buttons: 'Dry calibration', 'Empty tank', and 'Full tank'. Below these buttons is an 'Edit' button.

After the end of calibration, set the Averaging Interval 30-90 seconds (Individually). Recommended for wheeled tractors - 30-40 seconds, tractors and agricultural equipment - 70 seconds, for equipment with a complex shape of the tank - 90 seconds.

The screenshot shows the DUTConfig 3.8.1 application window. The 'View' menu is open, showing 'Standart' and 'Extended' options. The 'Extended' option is selected. The 'Baudrate' is set to 19200 and the 'Modbus ID' is set to 1. A red 'Disconnect' button is visible. The 'SW Version' is 7042022. The 'Error code' is 300 - The top and the bottom values are not calibrated. The 'Sensor parameters' section includes: 'Immersion level, %' (0,0), 'Internal oscillator inst. frequency, Hz' (10963,2), 'Internal oscillator avg. frequency, Hz' (0,0), 'Head temperature, °C' (23), 'Averaging interval, s' (0), 'Full tank frequency, Hz' (0), and 'Empty tank frequency, Hz' (0). The 'Omnicom' section includes: 'Periodic data output mode' (Off), 'Periodic data output interval, s' (1), 'Network mode' (Online), and 'Current N value' (0). There are buttons for '"Dry" calibration', 'Empty tank', 'Full tank', 'OK', and 'Cancel'.

Sensor parameters	
Immersion level, %	0,0
Internal oscillator inst. frequency, Hz	10963,2
Internal oscillator avg. frequency, Hz	0,0
Head temperature, °C	23
Averaging interval, s	0
Full tank frequency, Hz	0
Empty tank frequency, Hz	0

Omnicom	
Periodic data output mode	Off
Periodic data output interval, s	1
Network mode	Online
Current N value	0

"Dry" calibration Empty tank Full tank

OK Cancel

Connecting 2 or more FLS to the terminal (only for RS485)

To connect two or more FLS to the terminal, it is necessary to set an individual ID (1-255) for each FLS, set the Network operation mode.

- 1 Press the [**Setup**] button;
- 2 Specify a new ID;
- 3 Set the Network operation mode - Network;
- 4 Press the [**OK**] button in the main program window.

The screenshot shows the DUTConfig 3.8.1 application window. At the top, there are menu options 'File' and 'View'. Below the menu, there are fields for 'COM3', 'Baudrate: 19200', and 'Modbus ID: 1', along with a red 'Disconnect' button. The main area is divided into two sections. The left section, titled 'Sensor parameters', lists various sensor data: 'SW Version' (7042022), 'Error code' (0 - No errors), 'Immersion level, %' (6,8), 'Internal oscillator inst. frequency, Hz' (10963,0), 'Internal oscillator avg. frequency, Hz' (10963,0), 'Head temperature, °C' (23), 'Averaging interval, s' (0), 'Full tank frequency, Hz' (5565,967), and 'Empty tank frequency, Hz' (11802,8). The right section, titled 'Omnicommm', contains settings for 'Periodic data output mode' (Off), 'Periodic data output interval, s' (1), 'Network mode' (Online), and 'Current N value' (69). At the bottom, there are buttons for 'Dry calibration', 'Empty tank', 'Full tank', and an 'Edit' button.

SW Version	7042022
Error code	0 - No errors
Sensor parameters	
Immersion level, %	6,8
	0,0
Internal oscillator inst. frequency, Hz	10963,0
Internal oscillator avg. frequency, Hz	10963,0
Head temperature, °C	23
Averaging interval, s	0
Full tank frequency, Hz	5565,967
Empty tank frequency, Hz	11802,8

Omnicommm	
Periodic data output mode	Off
Periodic data output interval, s	1
Network mode	Online
Current N value	69

"Dry" calibration Empty tank Full tank

Edit



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FUEL CONTROL

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