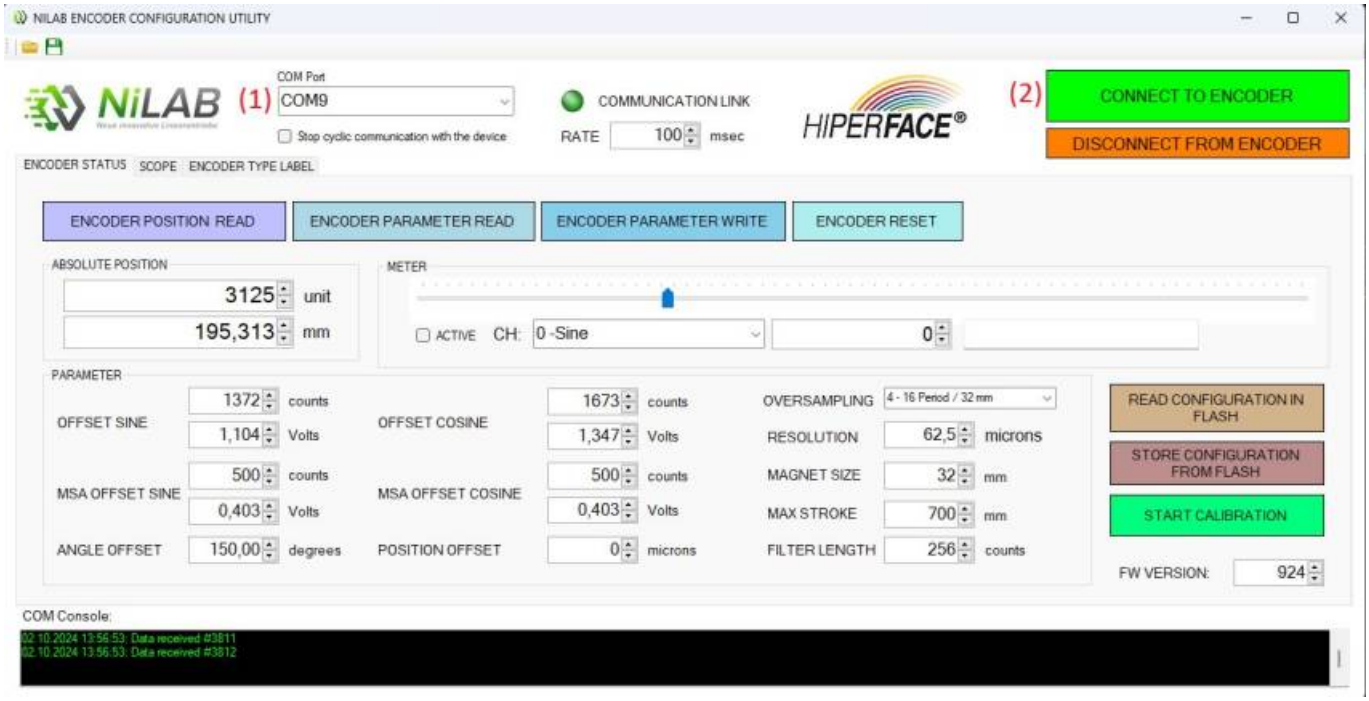
Encoder Calibration

Using Encoder Configurator

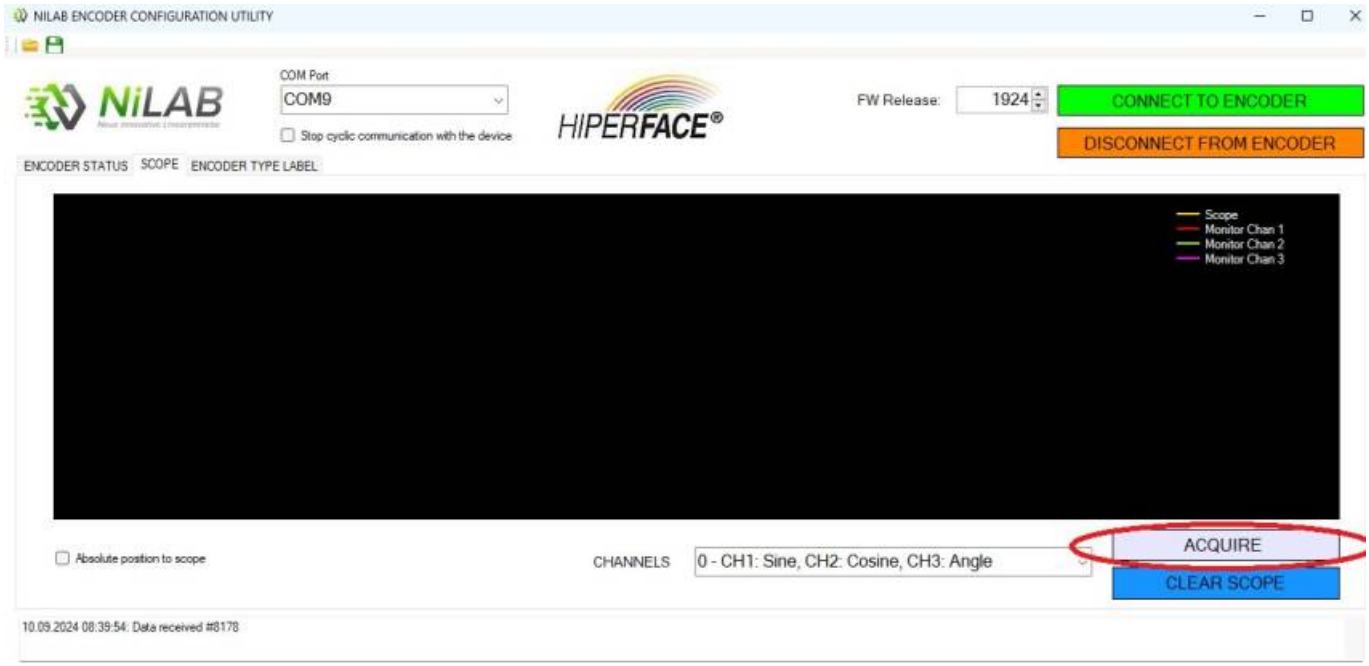
Before using the encoder, after mounting it on the machine, two operations are needed. First, dump the input signal of the microprocessor to check that the signal is correct and free of saturation. Second, calibrate the offset for proper operation.

Dumping of the input signal

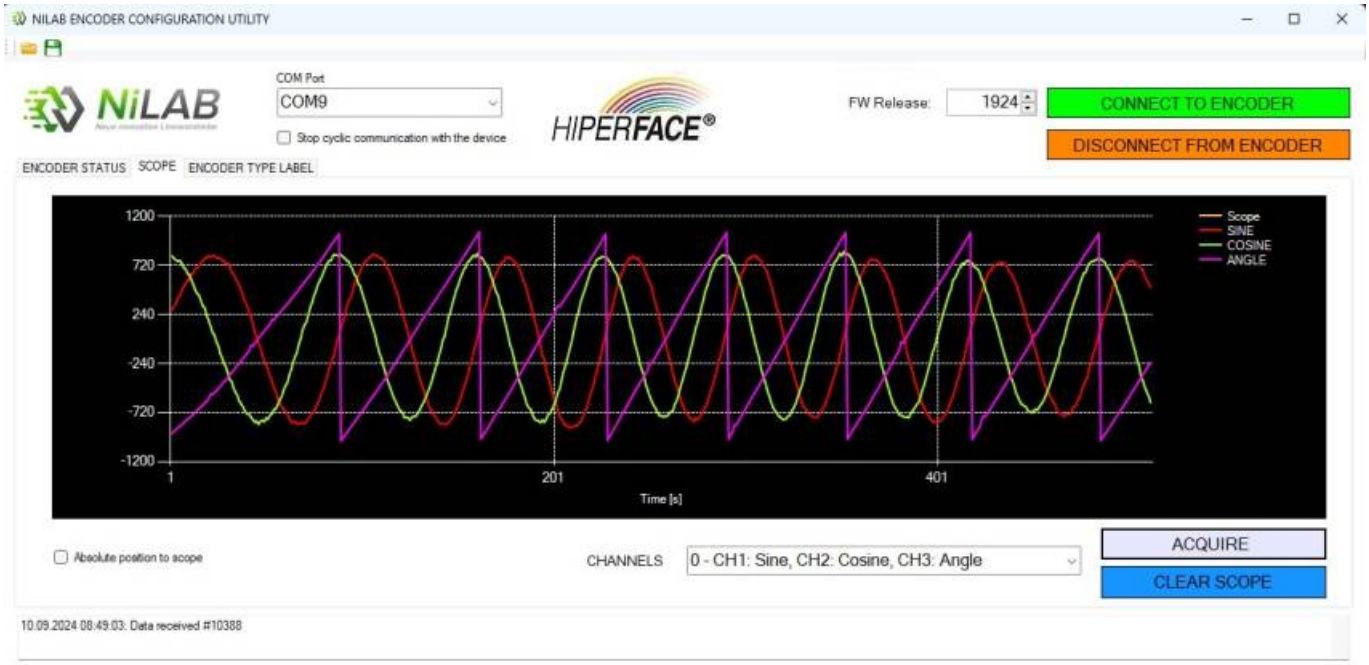
Using the NILAB Encoder Configuration utility, select the COM port where the programming cable is connected (1), then press the CONNECT TO ENCODER button (2) to establish a connection. All the encoder parameters are loaded into the interface and the current absolute position is displayed.



Then go to the SCOPE window folder and click on the ACQUIRE button. On the encoder LEDs, the yellow LED blinks to confirm that the encoder is in acquisition mode.



Move the carriage of the motor by hand in one direction over the entire stroke, and the signals are displayed as below.



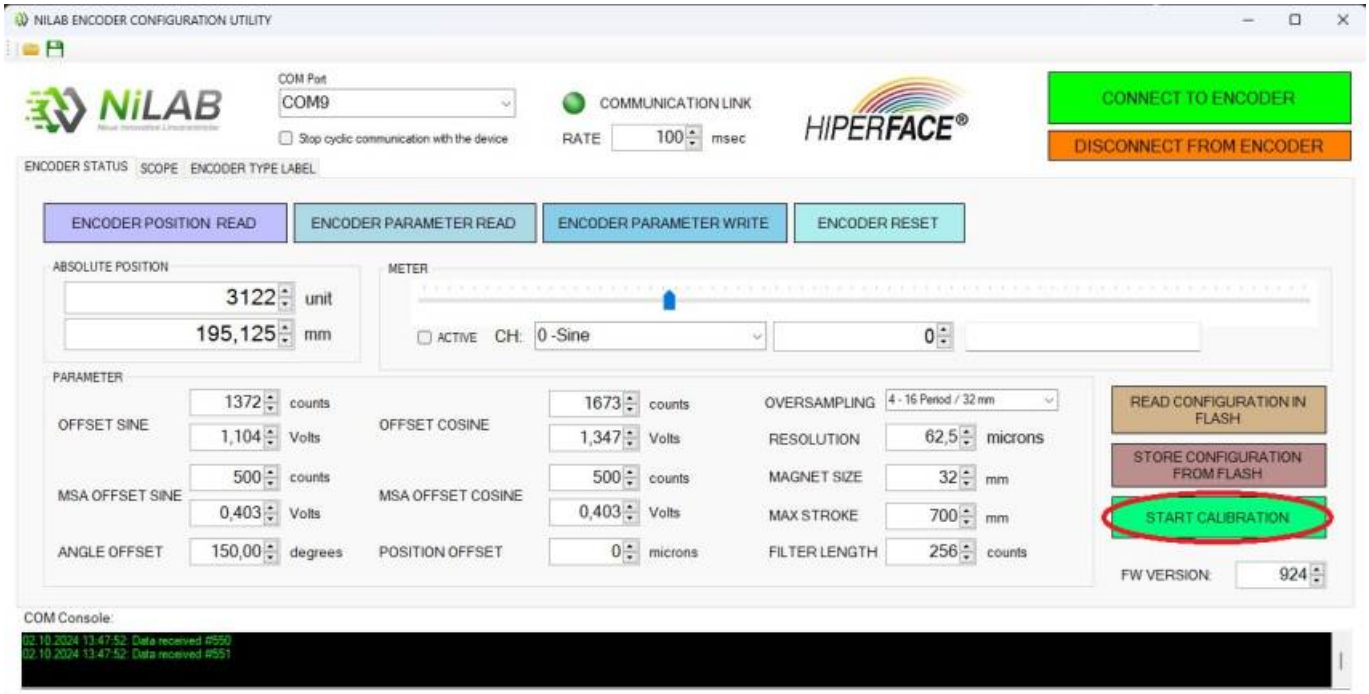
The SIN/COS signal must be free of distortion and saturation. If the SIN/COS signal saturates, move the reference magnet a little farther away from the encoder to eliminate the clamping on the signal.

For example, below is an acquisition where the SIN/COS signals are not OK and saturate.



Calibrate the signal

After dumping the signal, the SIN/COS offset must be canceled using the calibration procedure. Go to the ENCODER STATUS folder and press the START CALIBRATION button. The green LED on the encoder starts to blink to confirm that the calibration procedure is active. Then move the carriage of the motor in one direction over the entire stroke to calibrate the encoder.



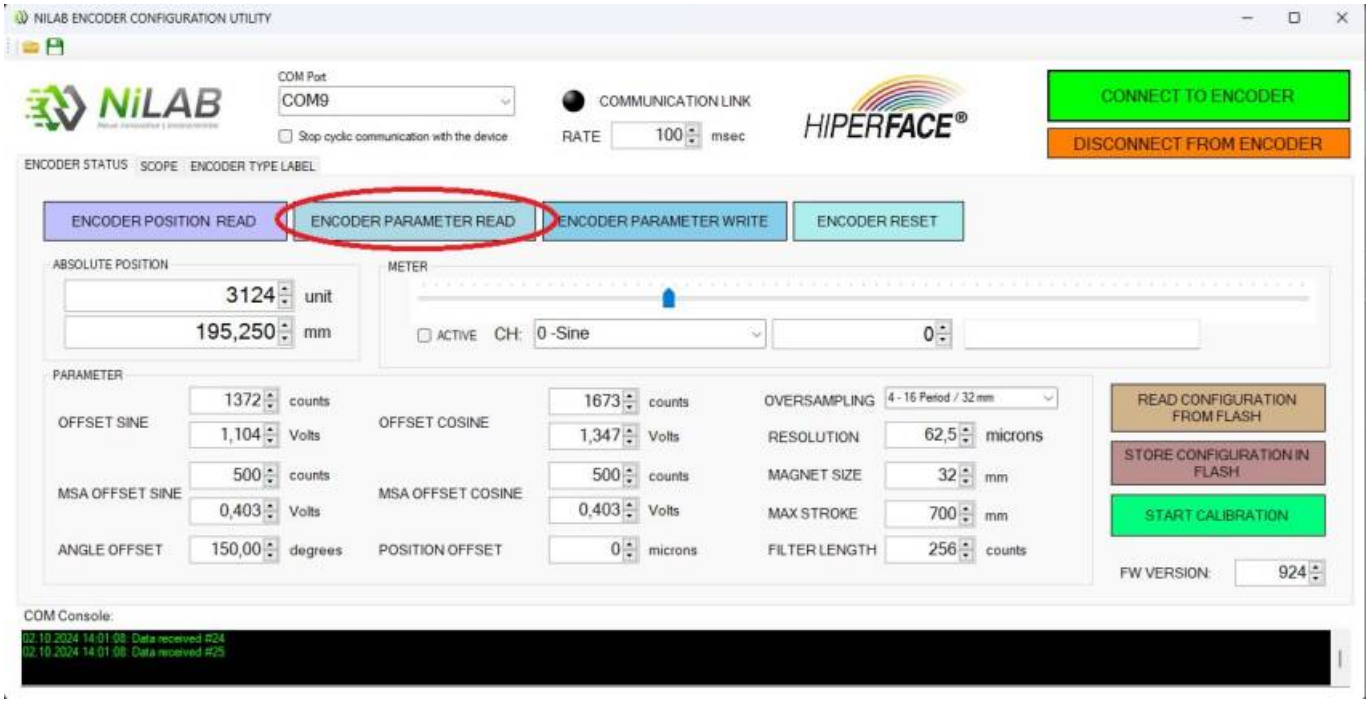
After the calibration using Scope, the calibrated input SIN/COS 1Vpp signal generated by the magnet reference (before multiplication) will look like this:



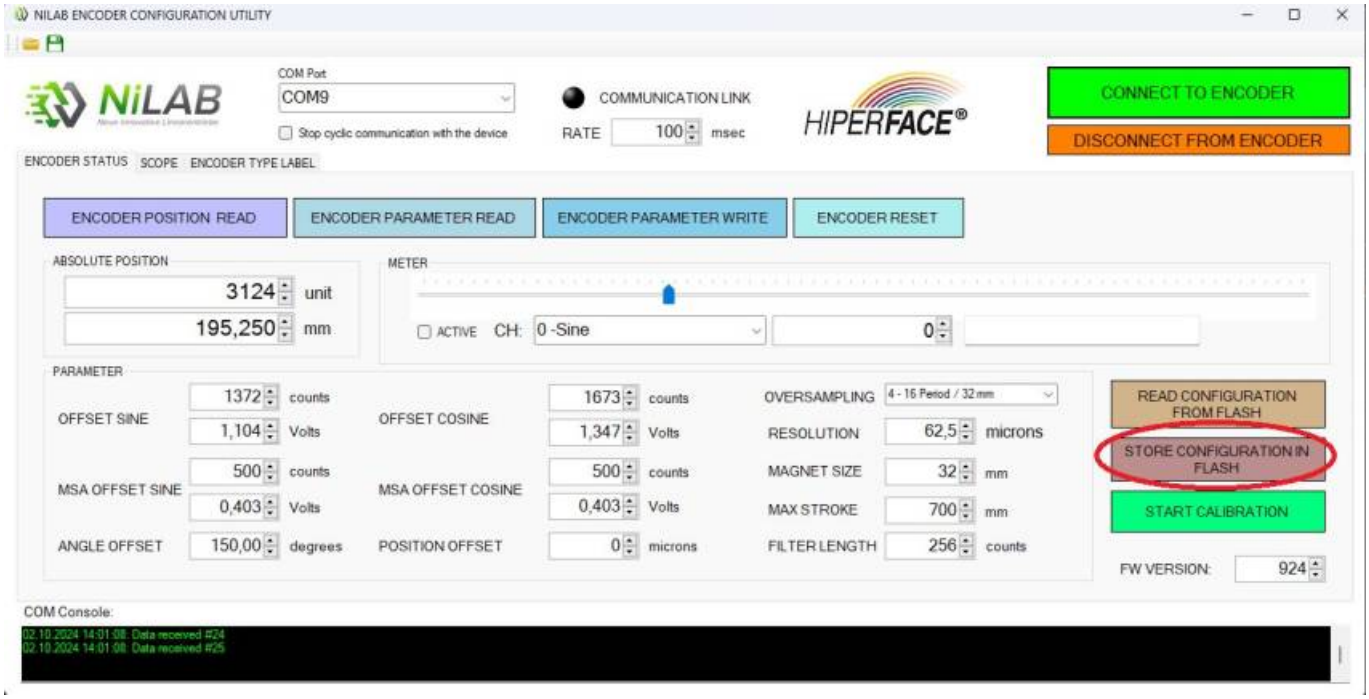
When you select the second channel, the multiplied SIN/COS 1Vpp encoder output signal will look like this. Note that when you acquire the second channel, you need to move slowly compared to the first channel option.



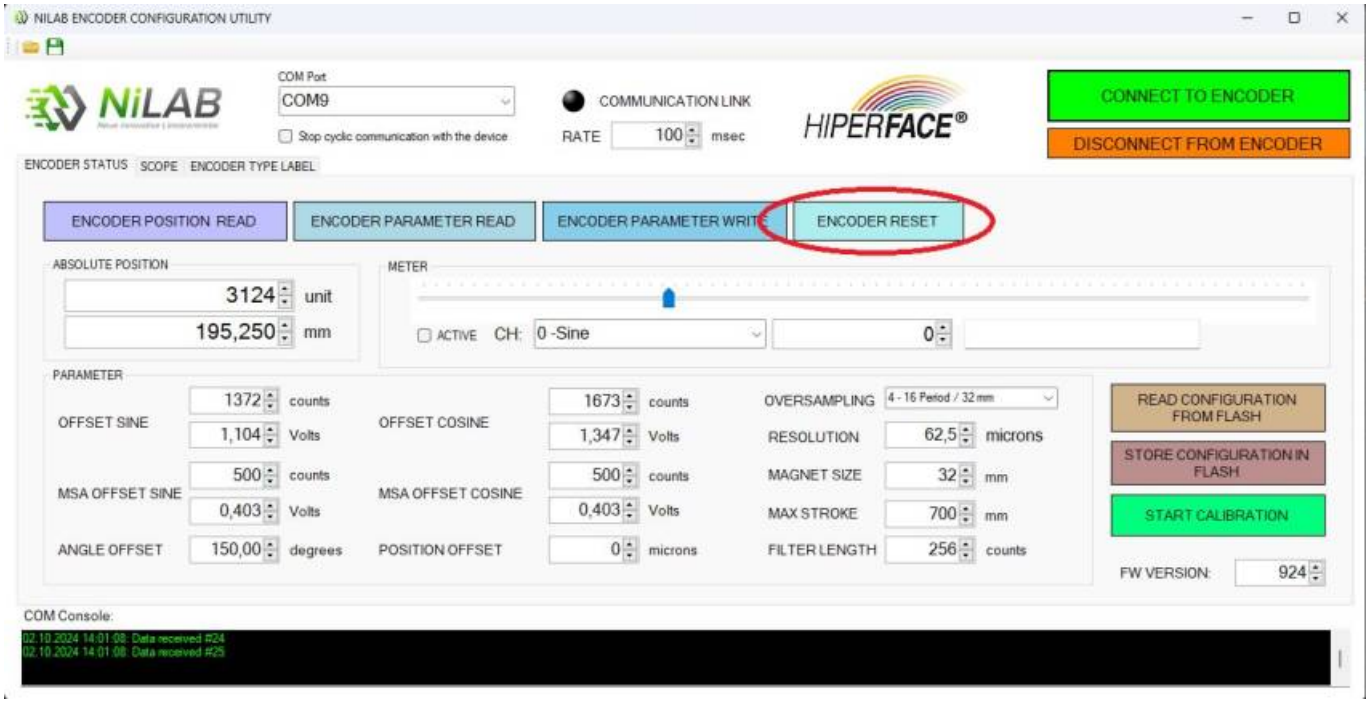
After the calibration, read the new encoder data by pressing the ENCODER PARAMETER button.



Then store the calibration data in the Flash memory of the encoder by pressing the STORE CONFIGURATION TO FLASH button.



After this step, reset the encoder by pressing the ENCODER RESET button.



After Reset, connect again to the encoder by pressing the CONNECT TO ENCODER button.

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https://www.nilab.at/dokuwiki/ - **NiLAB GmbH Knowledgebase**

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