DINI ARGEO
Scales - Weighing systems
A RICE LAKE WEIGHING SYSTEMS COMPANY

# XSPEEDTOOL

Tool for diagnostic and configuration of the weighing filter

**USER MANUAL** **ENGLISH**

www.diniargeo.com

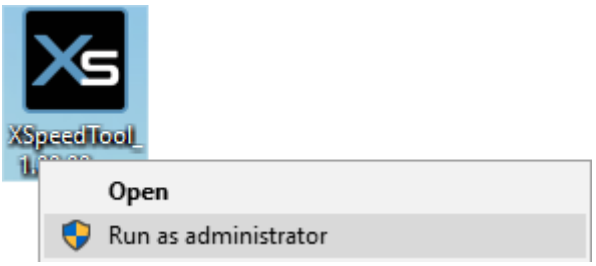
# Table of contents

## Recommended system requirements

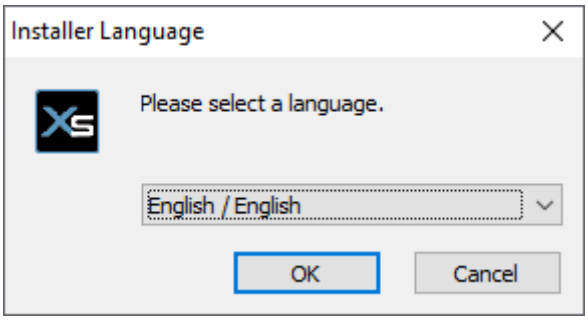
OS: Windows 10
Processor: 1,6 Ghz
Ram: 4 Gb
Free space on hard drive: 250 Mb

## Installation procedure

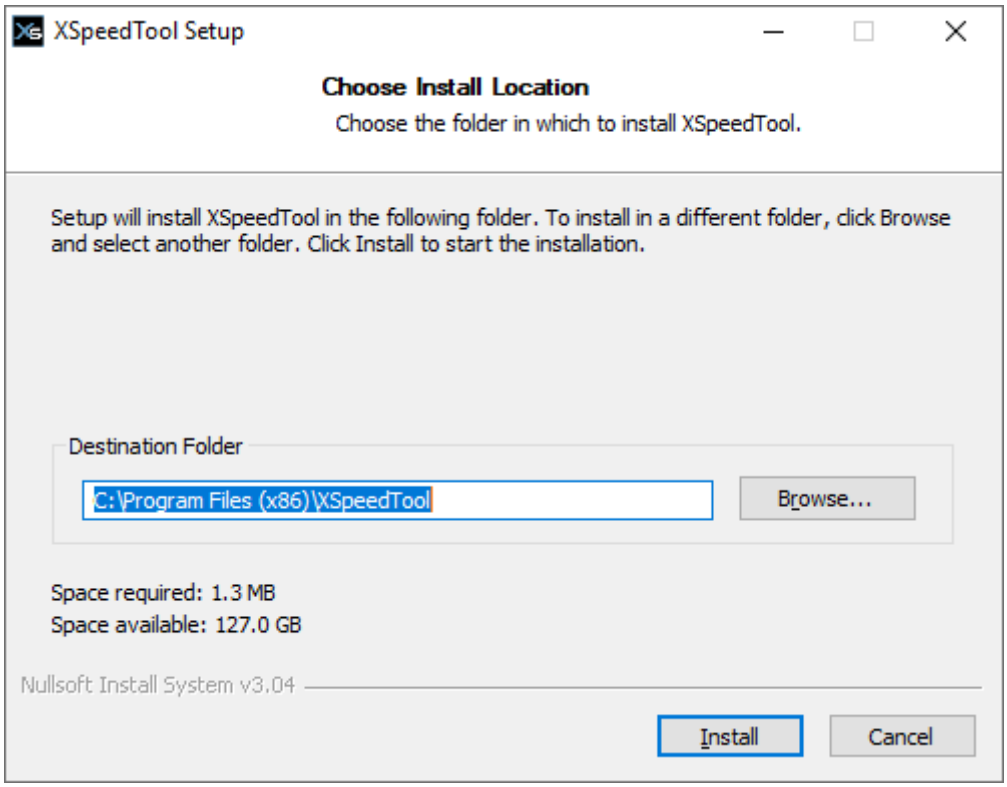
**1.** Run the setup file as administrator (Right click -> Run as administrator).



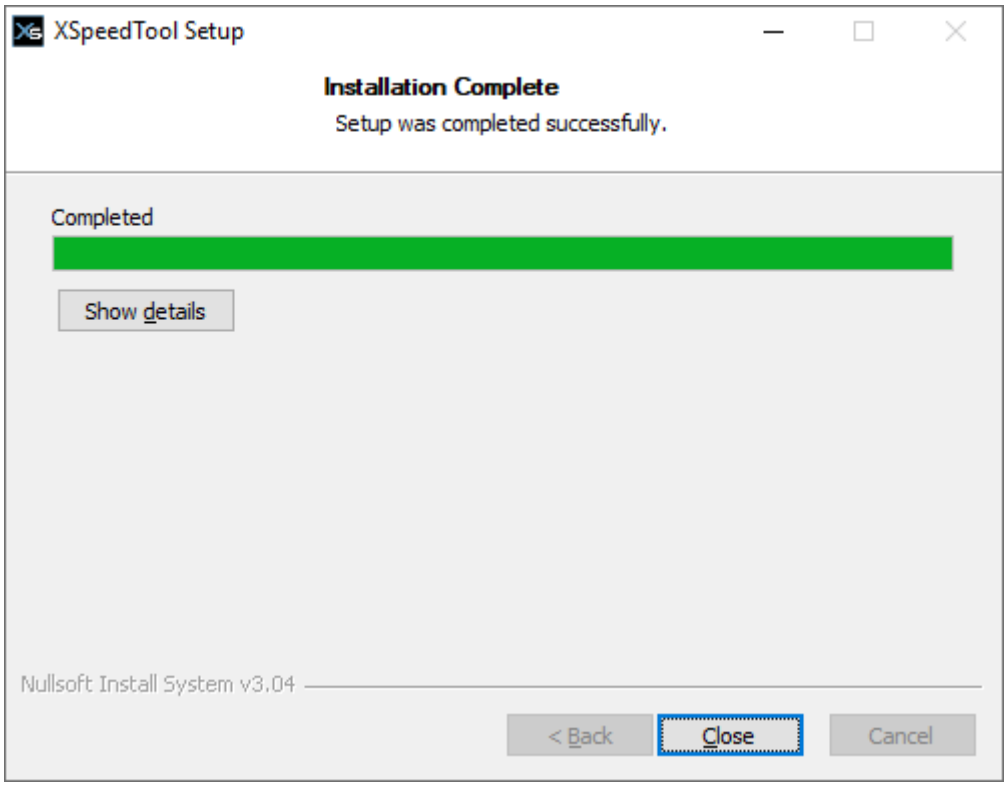

**2.** Select the installation language.



**3.** Select the installation folder (default: C:\Program Files (x86)\XSpeedTool).




**4.** Wait for the end of the installation.




Once the installation is complete, a shortcut will be created on desktop.

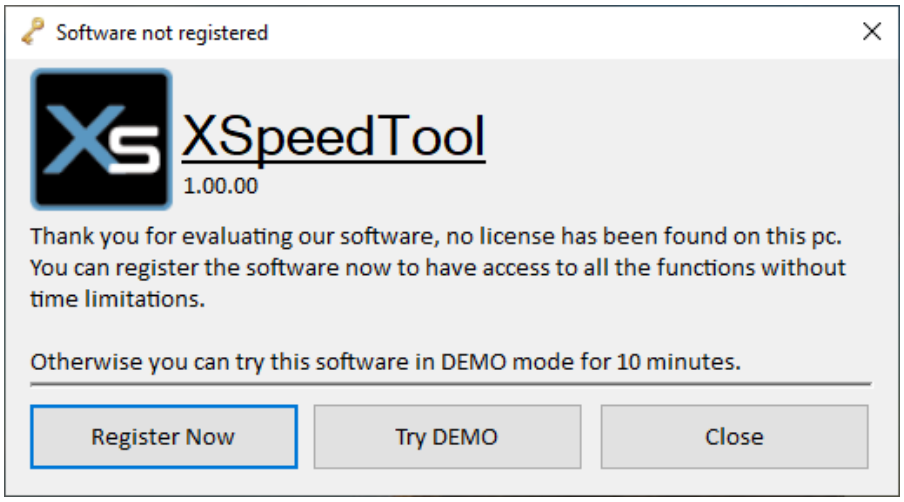
## DEMO mode

Using XSpeedTool software in DEMO mode has the following restrictions:

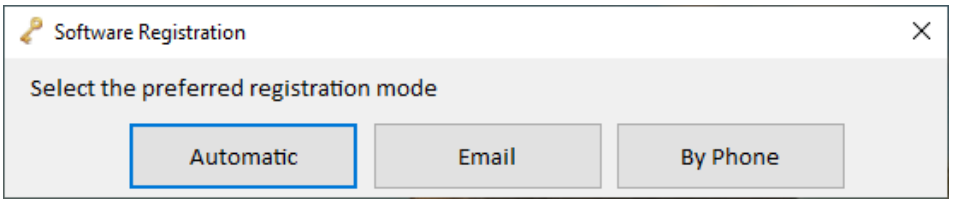
- 10 minutes of use.
- Disabled sending the filter to the instrument.

## License activation

At first startup, the program requires you to enter your license. Click on “**Register Now**”.



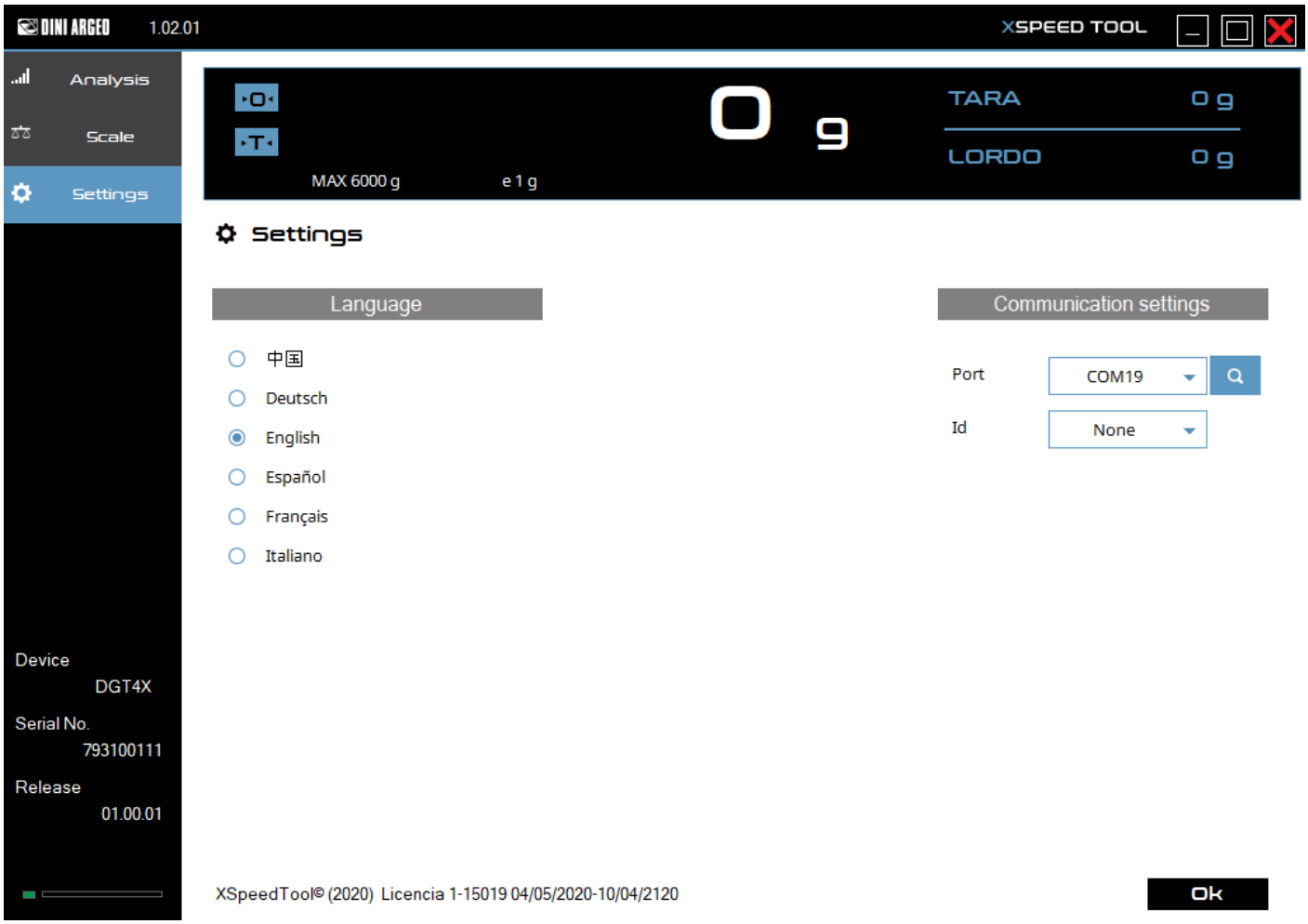

Select the software activation method:




**Automatic:** enter the activation code (supplied by the dealer).

**Email:** send an email to Dini Argeo with the license request file attached. (follow the instructions)

**By Phone:** call Dini Argeo offices to get a license.



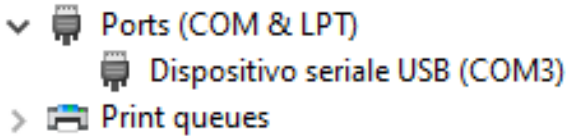

## Communication

### INSTRUMENT

Connect the instrument to the PC using the USB port.

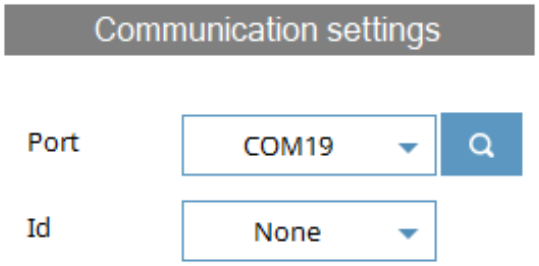
The tool is configured by default to communicate with the program.

By connecting the instrument to the PC via the USB port, a virtual COM port is automatically installed. Check the assigned port number in the "**Device Manager**" window of Windows OS:



**XSPEEDTOOL**

Select the correct COM port.
*Set the ID if you are using 485 protocol.*




**CONNECTION STATUS**

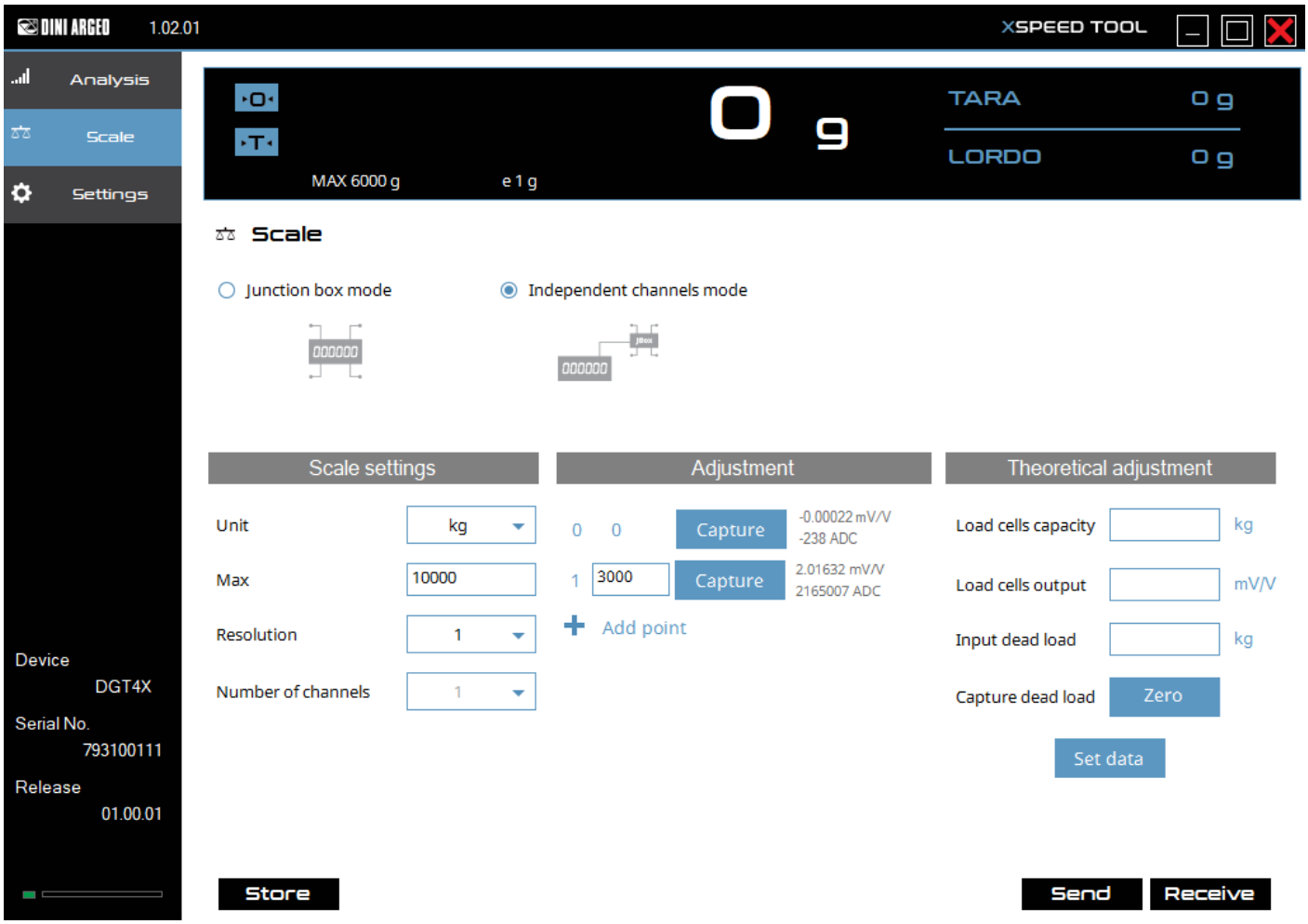
Green ➜ Connection OK.

Grey ➜ Ongoing connection.

Red ➜ Missing connection.

## Language

Select the desired language and press Ok.




## Calibration parameters

Set scale calibration parameters:

- Unit of measure
- Max capacity
- Division
- Number of used channels (in indipendent channel mode only one channel can be used)

## Calibration

It's possible to calibrate the instrument with sample weights.
For each point (up to 8), insert the weight value in the text box.
Load the weight on the scale and press Capture.

Once you have acquired all the points, send the calibration to the instrument by pressing Send.

Save the calibration on the instrument by pressing Store.

## Theoretical calibration

Set the values of theoretical calibration:

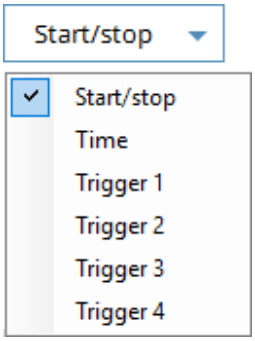
Total load cells capacity (sum of the capacities of each cell).
Load cells sensitivity (in junction box mode, insert the sum value of the signals).
Mechanical tare (If not known, unload the scale and press Zero).

Once you have entered the values, calculate the value of the points by clicking Set data.

Save the calibration on the instrument by pressing Store.


## Data acquisition

Acquisition can be done in several ways:




If the instrument is configured in junction box mode (dependent channels) the available acquisition rates are: 5, 10, 20, 40, 80, 160, 320.

**START/STOP**

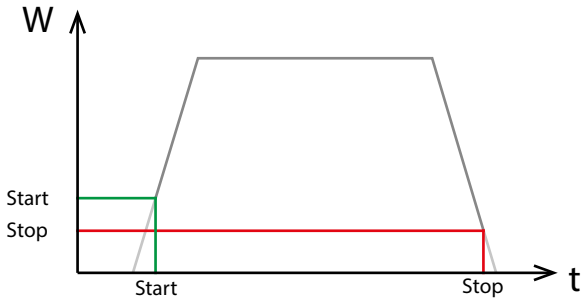
The acquisition begins when you press Start and ends when Stop is pressed.

**TIME**

The acquisition begins when you press Start and ends automatically after the time set in Time (s).

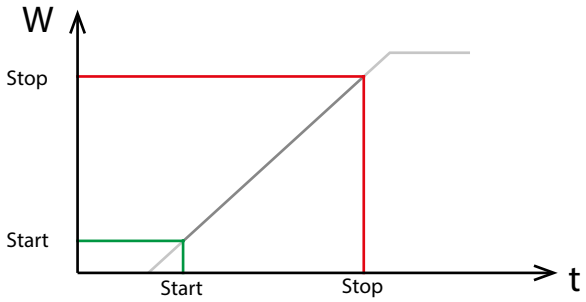
**TRIGGER 1**

Once Start has been pressed, the acquisition begins when the weight exceeds the upper threshold (Start) and ends when the weight falls below the lower threshold (Stop).



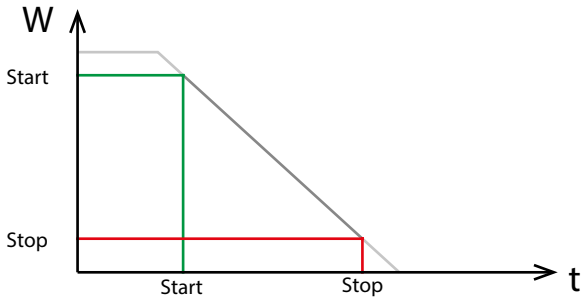

**TRIGGER 2**

Once Start has been pressed, the acquisition begins when the weight exceeds the lower threshold (Start) and ends when the weight reaches the upper threshold (Stop).



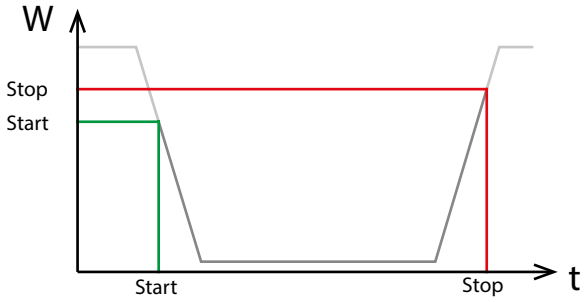

**TRIGGER 3**

Once Start has been pressed, the acquisition begins when the weight falls below the upper threshold (Start) and ends when the weight falls below the lower threshold (Stop).



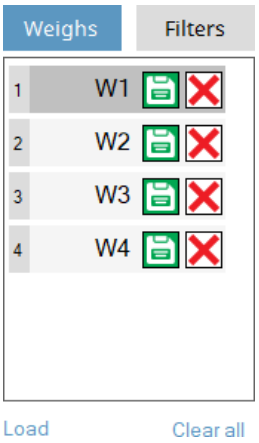

**TRIGGER 4**

Once Start has been pressed, the acquisition begins when the weight falls below the lower threshold (Start) and ends when the weight reaches the upper threshold (Stop).



## Weighs list

On the right side all the acquired weighs are saved.
Select a weight to show it on the graph.




| | |
|---|---|
| | Saves the weight on the PC. |
| X | Deletes the weight. |
| Load | Loads the weight saved on the PC (**.xsd** format). |
| Clear all | Deletes all weighs. |

## Graph processing

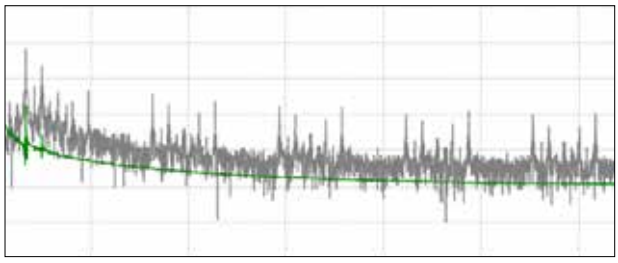
After the acquisition, the graph shows the weighing trend.
The grey curve indicates the unfiltered signal. To hide it, remove the tick on ☐ Raw data .

Hovering the mouse over the curve will highlight the coordinates of the point above the graph:
W 201.50 g T 1.966 s .

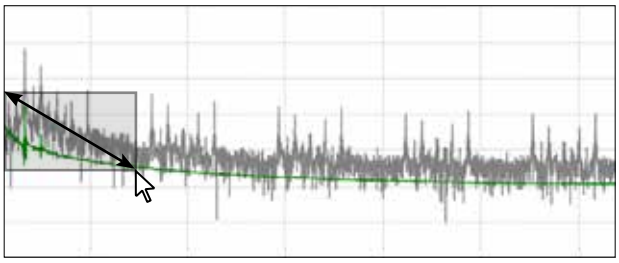
### ZOOM FUNCTION

It is activated by ticking the magnifying glass ☑. By holding down the left mouse button and dragging the cursor over the graph, the selected area is zoomed in.
To restore the graph, remove the tick and click Refresh .
By clicking the buttons ⊖ only the desired axis is zoomed out.

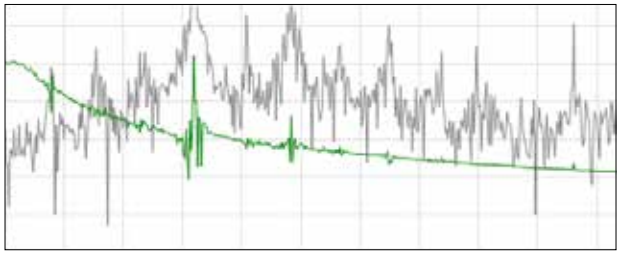
**1.** Enable zoom function ☑.



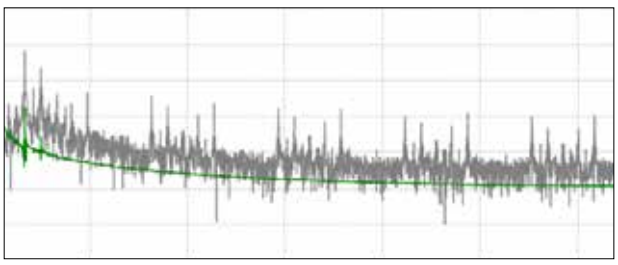
**2.** Select the area to zoom in.



**3.** Only the selected part of the graph is displayed.



**4.** Disable zoom function ☐ and press Refresh to restore the original graph.



# Spectrum

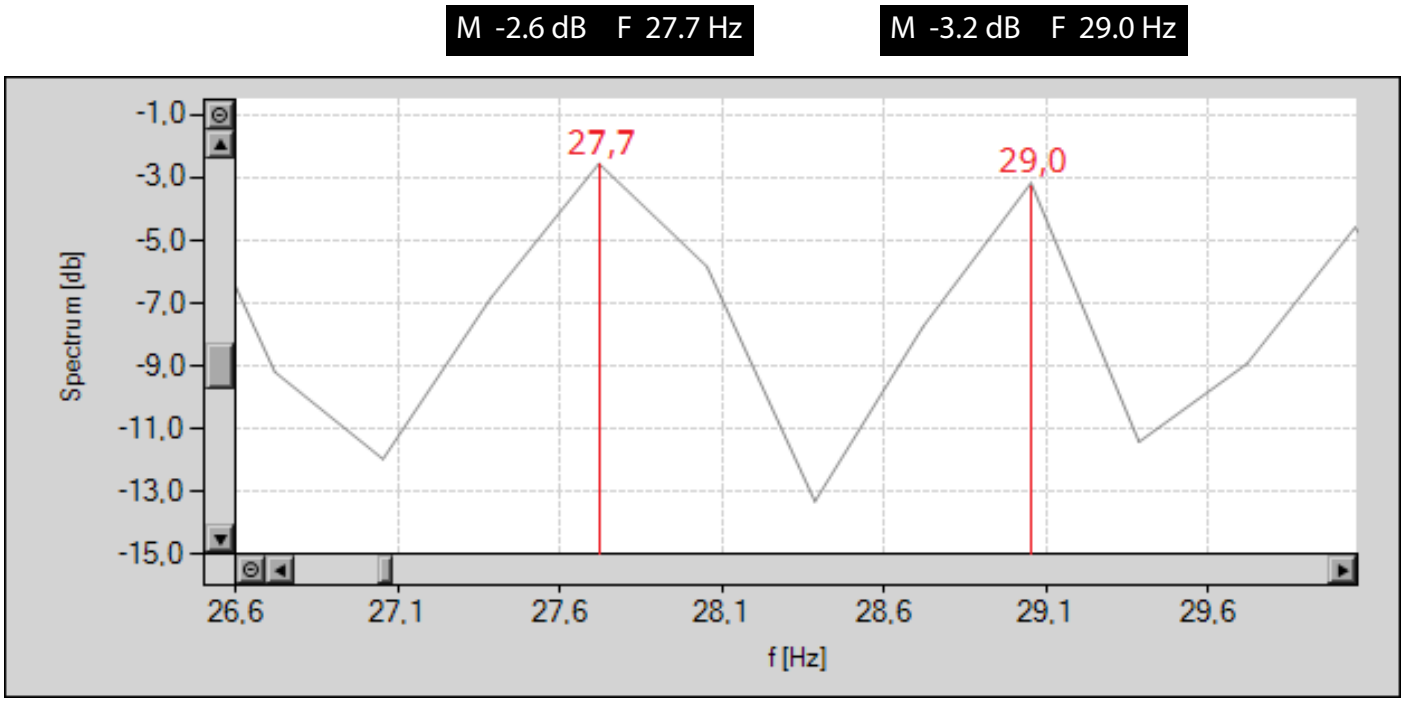
The spectrum describes the acquired signal in the frequency domain.
By analyzing the spectral graph of the signal and applying the appropriate filters, you can eliminate the vibrations and disturbances that negatively affect system performance.

Click on the tick ☑ Spectrum to activate the spectrum visualization.

**Note:** The spectrum calculation may take several seconds, depending on the amount of data to be analyzed.

## Spectrum analysis

To evaluate the vibration frequency, zoom in on the graph until you see the wavelength of the signal.



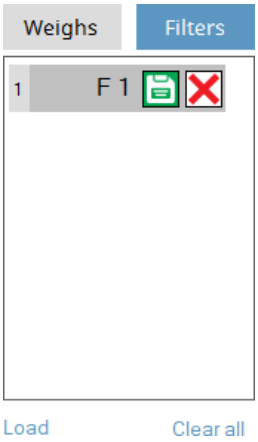

In the example of the above graph, the wavelength is given by the difference 29,0 - 27,7 = 1,3 Hz.

## Filters list

Click on  to save a filter in the filters list.

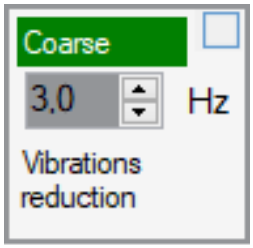
Click on a filter and then on 

to see the filter action on the graph.




| | |
|---|---|
|  | Saves the filter on the PC. |
|  | Deletes the filter. |
| Load | Loads a filter saved on the PC (**.xsf** format). |
| Clear all | Deletes all filters. |

## Filters




**Coarse filter**

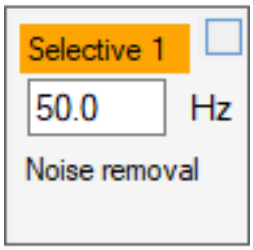
Filter for removing signal vibrations.
**Recommended value**: 2 ÷ 10 Hz (go below 2 only with rate 2600 Hz)
A smaller value makes the weight more stable.

*The set value must be less than half the acquisition rate.*


**Fine filter**

Fine filter, expressed in percentage.
**Recommended value**: 10 ÷ 50 %

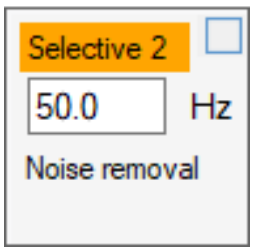
A smaller value makes the weight more stable.




**Selective filter 1**

Filter for the removal of fixed frequency noise.

Enter the noise frequency.




**Selective filter 2 (*)**

Filter for the removal of fixed frequency noise.

Enter the noise frequency.

**(*)** *Available depending on the model.*

## Sending and saving the filter

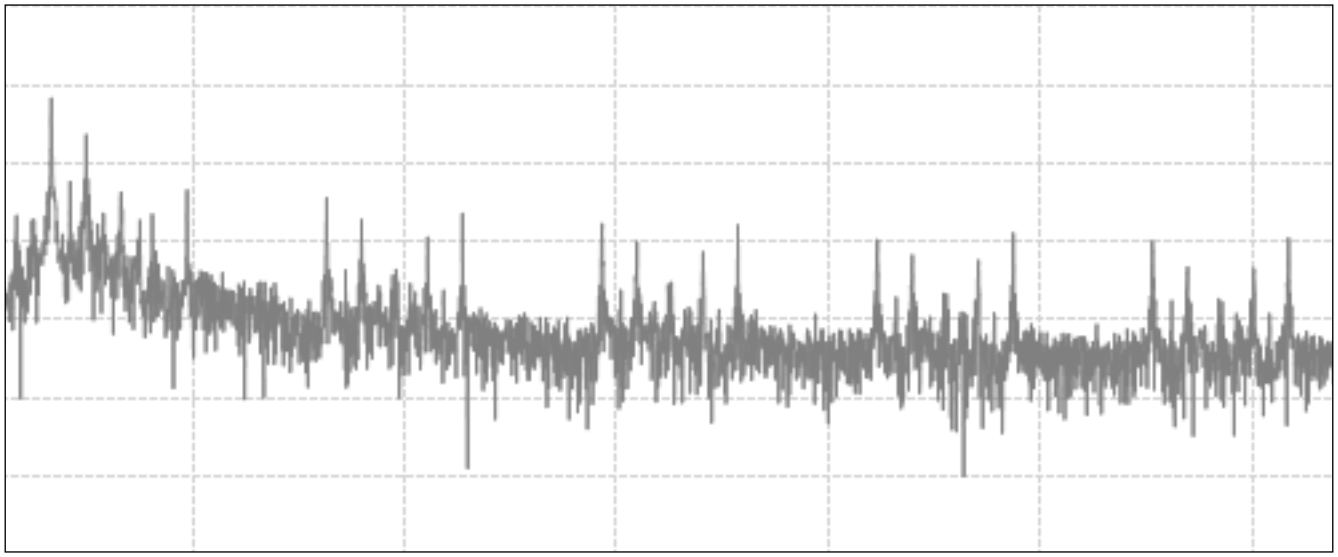
To send the filter to the instrument, click on **Send**.

By restarting the instrument, you lose the filter sent.
To save the filter on the instrument click **Store** on the “Scale” tab.

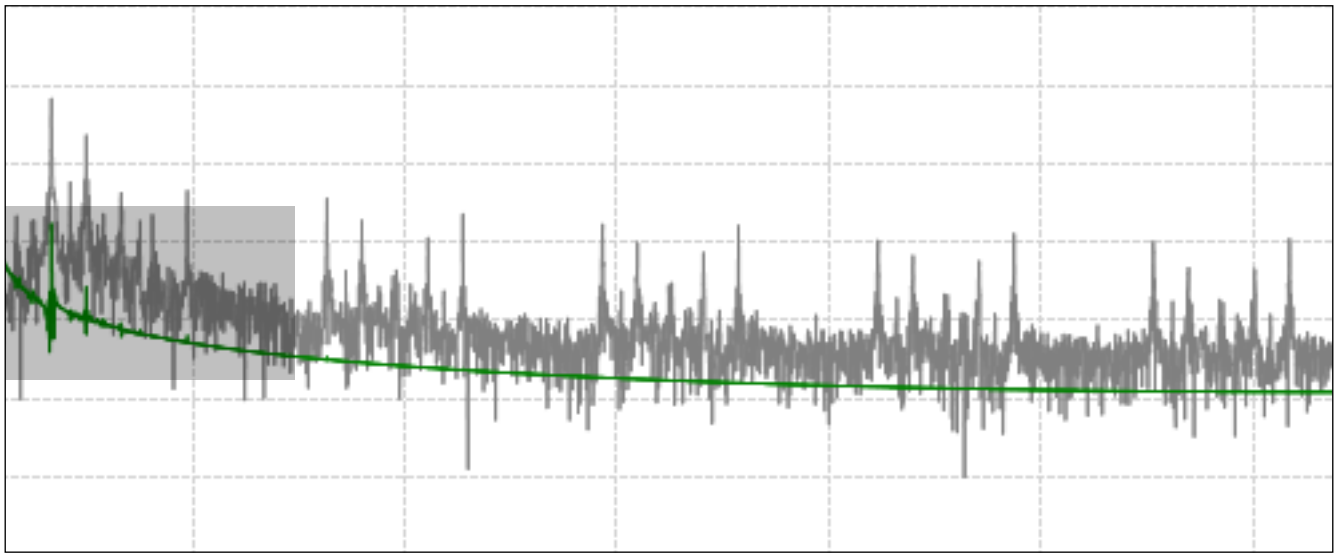
In **DEMO** mode, it’s not possible to send the the filter to the instrument.

# Example

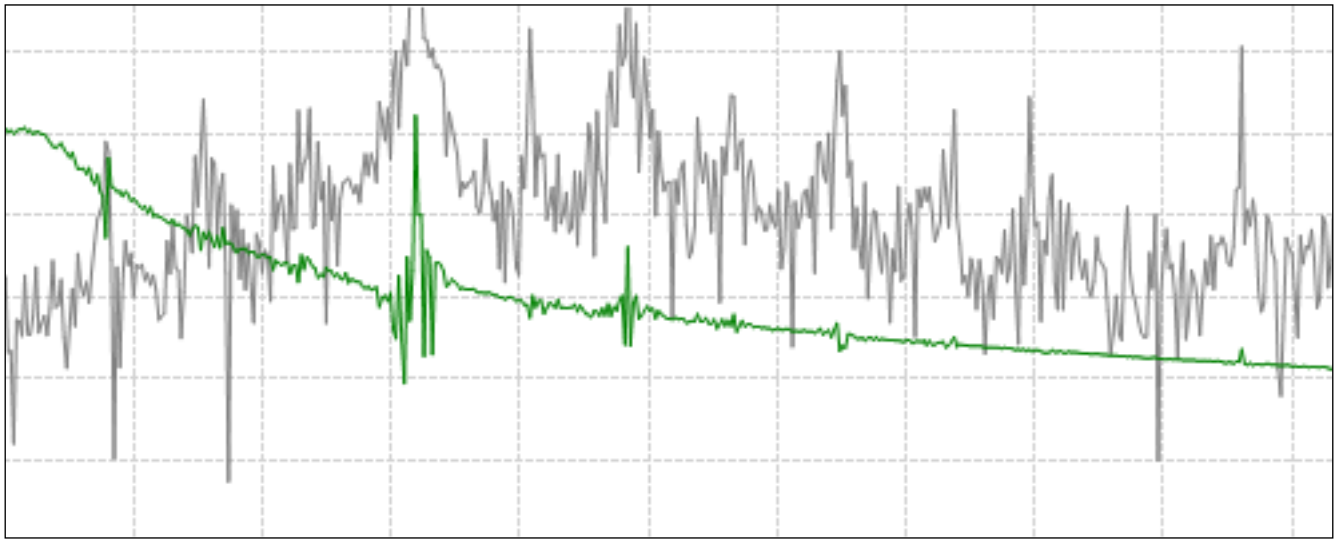
After acquiring the weight, the spectral representation of the signal appears to be:



By applying a coarse filter at 10 Hz:

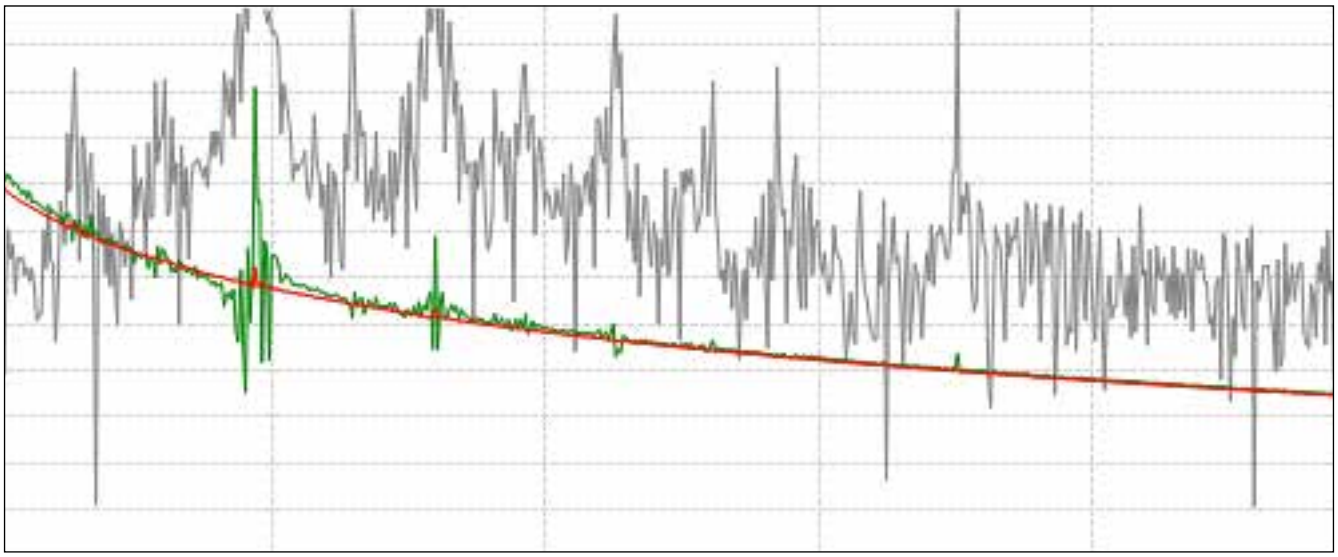


The signal is still not stabilized (zoom in to check the stability in each area of the graph):



There are two ways to proceed:

1. Further reduce the frequency of the Coarse filter.
2. **Activate the Fine filter:**



*The graph above has been obtained by setting the fine filter to 50%.*

The combination of the two filters removes instability due to vibrations and at the same time maintains an excellent weighing speed.

An additional filter (two for some models) is also available for noise removal.
Apply it in case you observe a noise caused by a specific frequency (e.g. 50 Hz power supply).

# Notes

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Authorized service center stamp