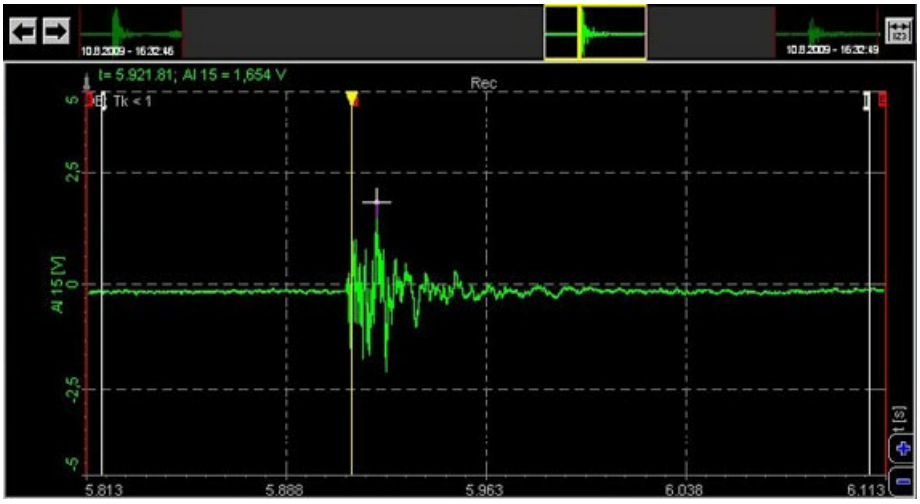
Data Storing and Triggering Options



Storing options in Dewesoft X

Storing strategies are very important for the entire system. That's why Dewesoft X offers many ways of how to store data.

You can see all the storing options in Measure mode under the Storing tab.

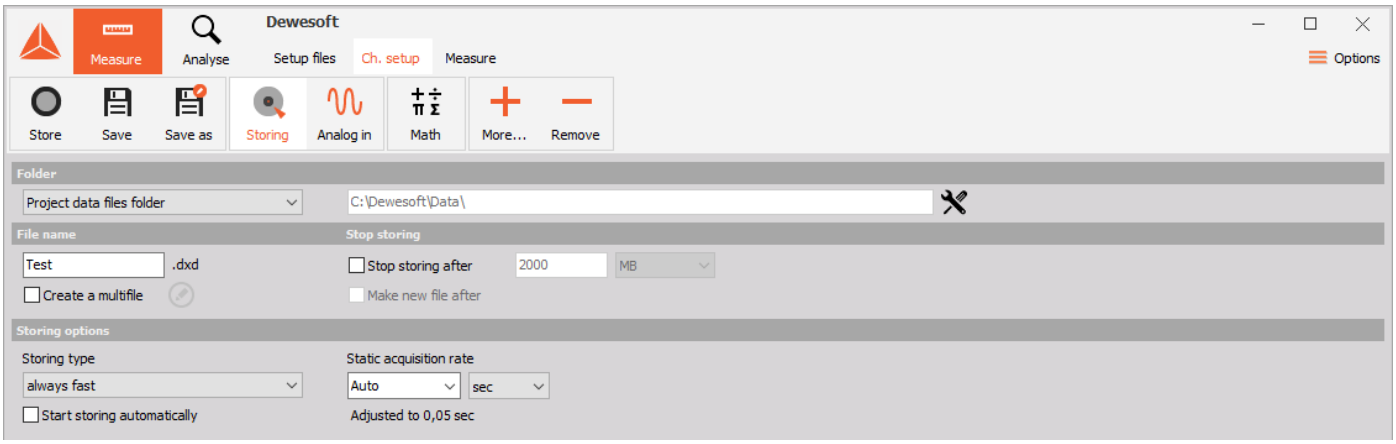


Image 1: Storing options

These are the possible storing options in Dewesoft X

- Always fast
- Always slow
- Fast on trigger
- Fast on trigger, slow otherwise.

With always fast and always slow storing options you can choose between different static acquisition rates and units.

When you select one of the triggers storing options Trigger setup tab will automatically appear on Dewesoft X Setup screen.

NOTE: With Dewesoft X, you can trigger from your signals by setting any channel(s) to start and stop recording according to levels.

Before we explain other functions on the screen above, let's first take a look at how to name and save files that will be stored.

We can change the folder where data is stored under the Folder section.

Image 2: Data files folder

Project data files folder	Folder from project settings
Custom folder	Arbitrarily chosen folder from local storage

We can define the file name for each measurement separately by entering it into the edit-field

Image 3: File name field

For repetitive measurements, we use the Create a multifile function.

Image 4: Create a multifile

Multifile automatically assigns a new file name for each cycle (start) of storage. File names can be either consecutive (such as 0001, 0002, 0003) or by the date and time.

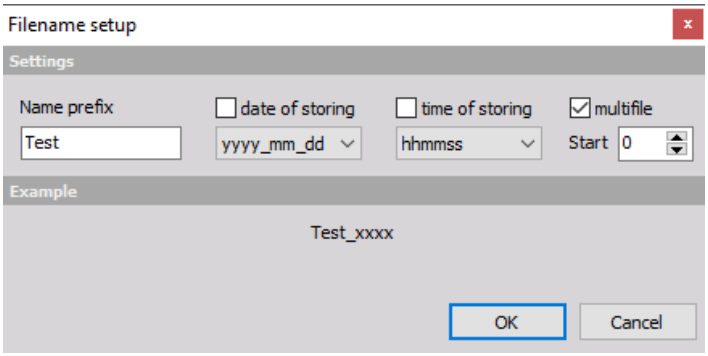


Image 5: Multifile name by the date and time

Additionally, you can define how a new file will be created by selecting Make a new file after checkbox. The criteria for switching to a new file are either the file size or time interval, which can be defined in seconds, minutes, or hours.

MB	Creates new file after defined file size in Megabytes is reached
h	Creates new file after defined time in hours is reached
min	Creates new file after defined time in minutes is reached
sec	Creates new file after defined time in seconds is reached
triggers	Creates new file after the trigger occurs

This can be very useful when acquiring data for longer time periods. If we choose to switch the file each hour with absolute time, then the switching will be done exactly on the hour (01:00, 02:00, 03:00...). The time will be taken from absolute PC time (or another more exact timing source, if available, as defined in the hardware setup). The file switching is done in such a way that no data point is lost in the process.

Storing in Dewesoft X

First, let's look at how to store full speed data in Dewesoft X. Let's perform a short measurement with Sirius unit and tuning forks and explain the use of basic buttons.

Let's first look at the Keyboard Shortcuts that can be useful when working with Dewesoft X.
F2 - go to Channel Setup
F3 - go to Measure
F5 - Store (if you are using a later version than SP5 you can stop storing without stopping the Acquisition)
F7 - Stop storing

In Measure - storing there are three useful Keyboard Shortcurs
Space - Keyboard event
n - text (note) event
v - voice event

First, we will learn how to store data in Dewesoft X.

Let's perform a short measurement with Sirius unit and tuning forks and explain the use of basic buttons.

If we want to store measured data, we need to be in Measure mode, where we can see Store button.

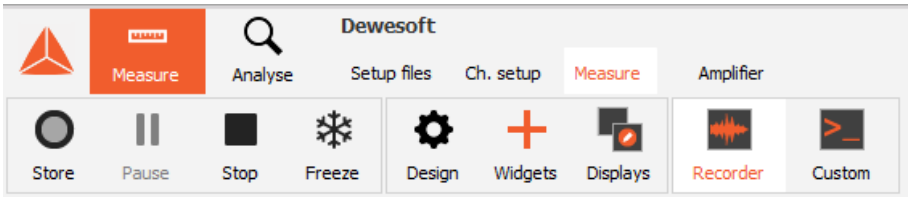


Image 6: Measure mode in Dewesoft

For start storing, we need to click Store button

on the main menu.

Once we do that, a small Warning window will appear if the file which we want to write to already exist on the hard drive.

We can either overwrite the previous file or use another file name.

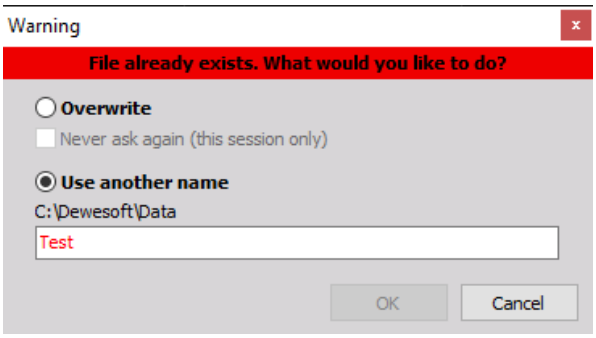


Image 7: Warning

Now the data will be stored to the file with full speed.

NOTE: Data are stored with the speed that is defined by typing in the Sample rate. That speed can be different from channel to channel by setting up the Sample rate divider.

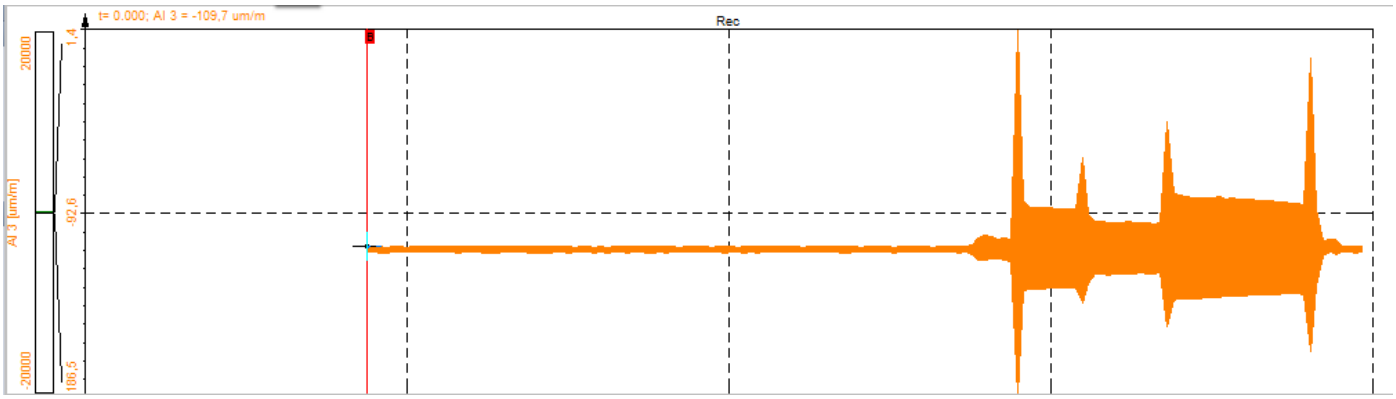


Image 8: AI data file on the Recorder

When we start storing, these are the actions that we can select between different storing options.

The Store button changes to

and if we click the Pause button,

data will still be acquired, but storing will be paused. At that point, the Pause button caption changes to Resume button

Store button stays the same

and if we click Store button again, storing will be resumed. Due to this, there will be two sections of data visible in Analyse mode.

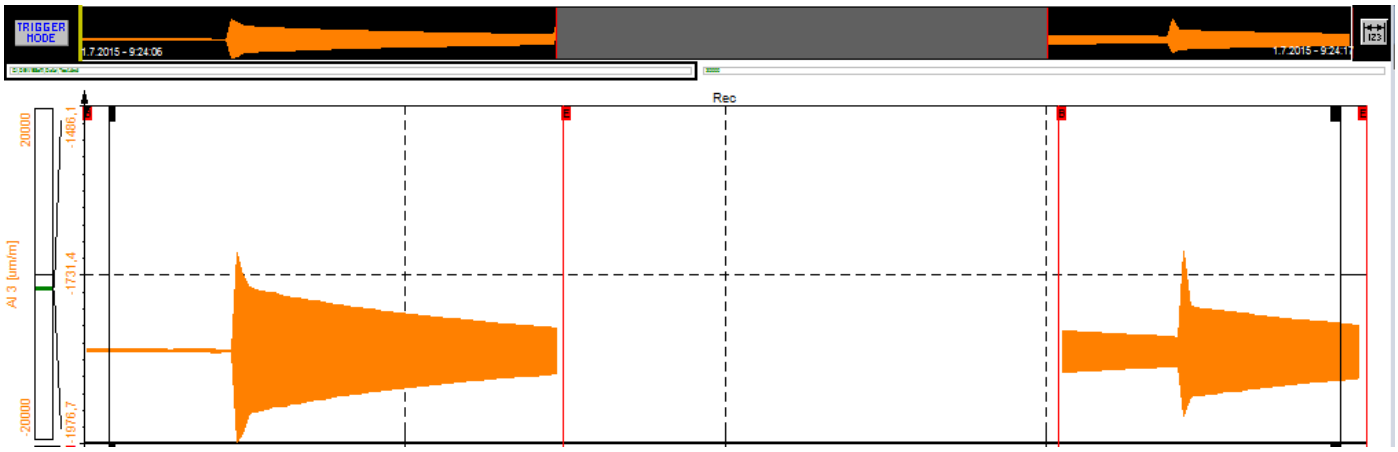


Image 9: Paused and countined measurement shown on the recorder

We can also Stop and freeze the storing.

Note: All the action buttons need to be clicked manually and if we are in Measure mode data isn't yet stored. For that, we need to use Store button.

ALWAYS FAST storing option

If we don't make any changes in Storing settings and go directly to Measure marker, the data will be stored all the time with the selected Dynamic acquisition rate. Now the data will be stored to the file with full speed.

The procedure of how to store data is the same as we mentioned it in the beginning.

To start storing, click Store

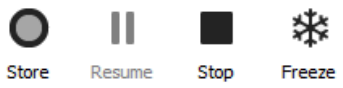


Image 10: Control buttons

in the main menu.

Now the data will be stored to the file with full speed.

The Store button changes to

and if we click the Pause button

data will still be acquired, but storing will be paused. At that point, the Pause button caption changes to Resume button

Store button stays the same

and if we click it again, storing will be resumed. Due to this, there will be two sections of data.

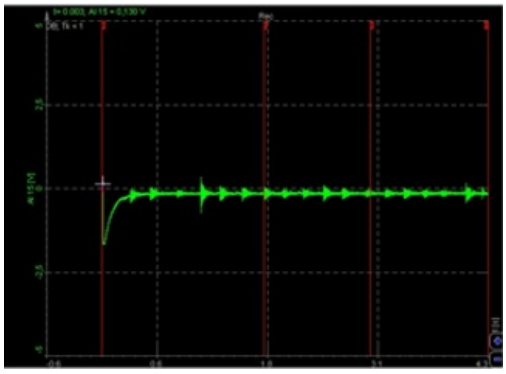


Image 11: Two-section data

If the user clicks Analysis, he will see two sections with data and space in between will be blank - no data is stored there

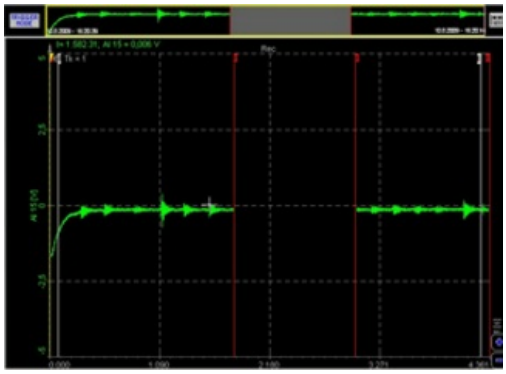


Image 12: Two-section data with the blank space between

ALWAYS SLOW storing option

This function stores data at intervals, set with Static/reduced rate. Even thought storing is set to slow, Dewesoft X will acquire the data with full speed, calculate the minimum, maximum, average and RMS for this time interval and store only these values.

If we look at the example below the static acquisition rate is set to 0,1 second which means, that in this case we will use much less disk space for storing our data.

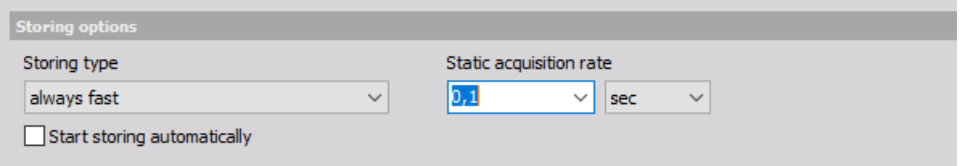


Image 13: Static acquisition rate

If our data consists of events which can be captured, we can choose to store with two options of triggers. The trigger event can be defined in the software and then Dewesoft X will wait for this event and store only the portion of interest.

If the Start storing automatically is selected, the data storage will be automatically started as soon as you change to any online display (scope, recorder,...).

If you want to stop storing, just press the Stop button or F7 on the keyboard. This function is independent of the storing type (fast, reduced, triggered,...). This function can be used together with the auto load function of Dewesoft X for highest automation.

If we want to acquire the data with slow speed, we can choose the always slow storing option.

The data will be stored at intervals, which are set with static/reduced rate.

In our case, this is set to 0,1 seconds. That's why much less disk space will be used for storage. Even though storage is set to slow, Dewesoft X will still acquire the data at full speed, calculate the minimum, maximum, average and RMS for this time interval and store only those values.

Let's store some data and take a look how the data appears in the recorder. This is what the data looks like at full rate in Measure mode.

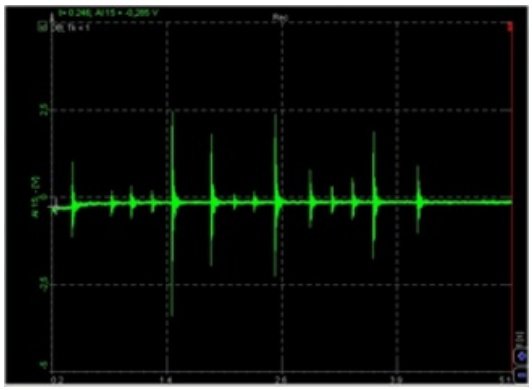


Image 14: Full rate data in Measure mode

And now let's switch to Analyse mode. The data will be shown as the envelope of the original signal since the full rate is no longer available, merely the 0,1-second values. We can also switch to average or RMS modes in the recorder setup to see those two parameters.

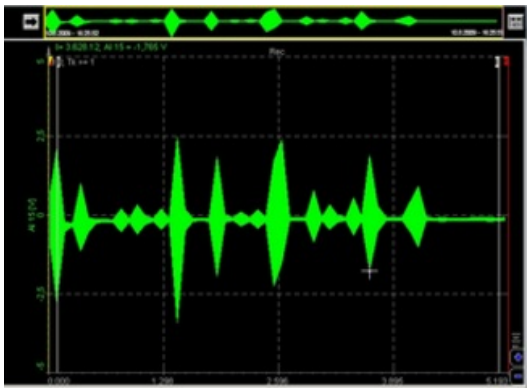


Image 15: Measured data in Analyse mode

The recorder below shows the RMS of the signal. We can judge from the average, RMS and min/max values what the original signal could be. For example, if there is a big maximum and the average value did not grow, we can deduce that there was a short spike in that channel.

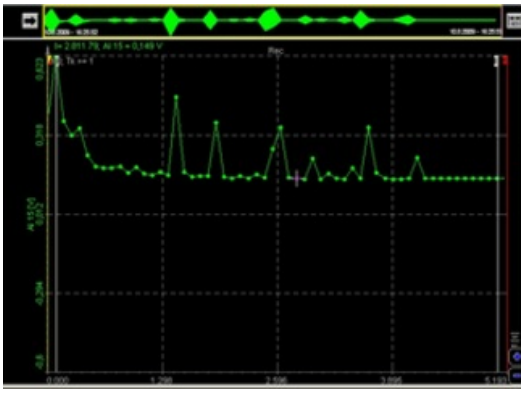


Image 16: RMS of the signal

FAST ON TRIGGER storing option

If Fast on trigger is chosen, data will be stored with the dynamic rate once the trigger point occurs.

If our data consists of events that can be captured, we can choose to store it as fast on the trigger. The trigger event can be defined in the software and then Dewesoft X will wait for this event and store only the portion of interest. This can be set by choosing the fast on trigger storing option. After doing this, the new tab Trigger will appear where we are able to set up the trigger condition and strategy.

First, we can choose to define the pre-time, post-time and holdoff-time.

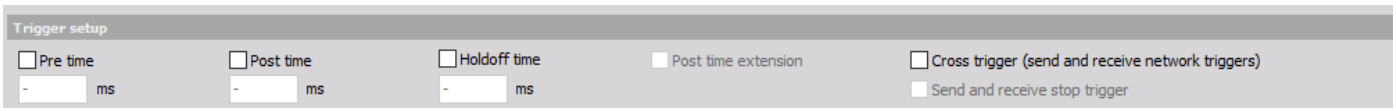


Image 17: Fast on trigger settings

PRE TIME is the time which will be stored before the trigger event occurs.
We define the 100 ms before an event as the pre trigger. This means that Dewesoft X will keep the data in the buffer until the trigger event occurs and then store this data to the file before the trigger in addition to the data after the trigger occur.

POST TIME is the time after trigger event which will be stored.
If this is not defined, Dewesoft X will continue to store until we stop it manually or a stop condition occurs.

HOLDOFF TIME is the time which is between the last trigger and next one.

For this example, we want to capture trigger shots, so the post trigger should be set to 200 ms, so a total of 300 ms of data will be captured per trigger event. Now we need to define the trigger conditions for the beginning of storage. Let's add one trigger condition by clicking setup to define it.

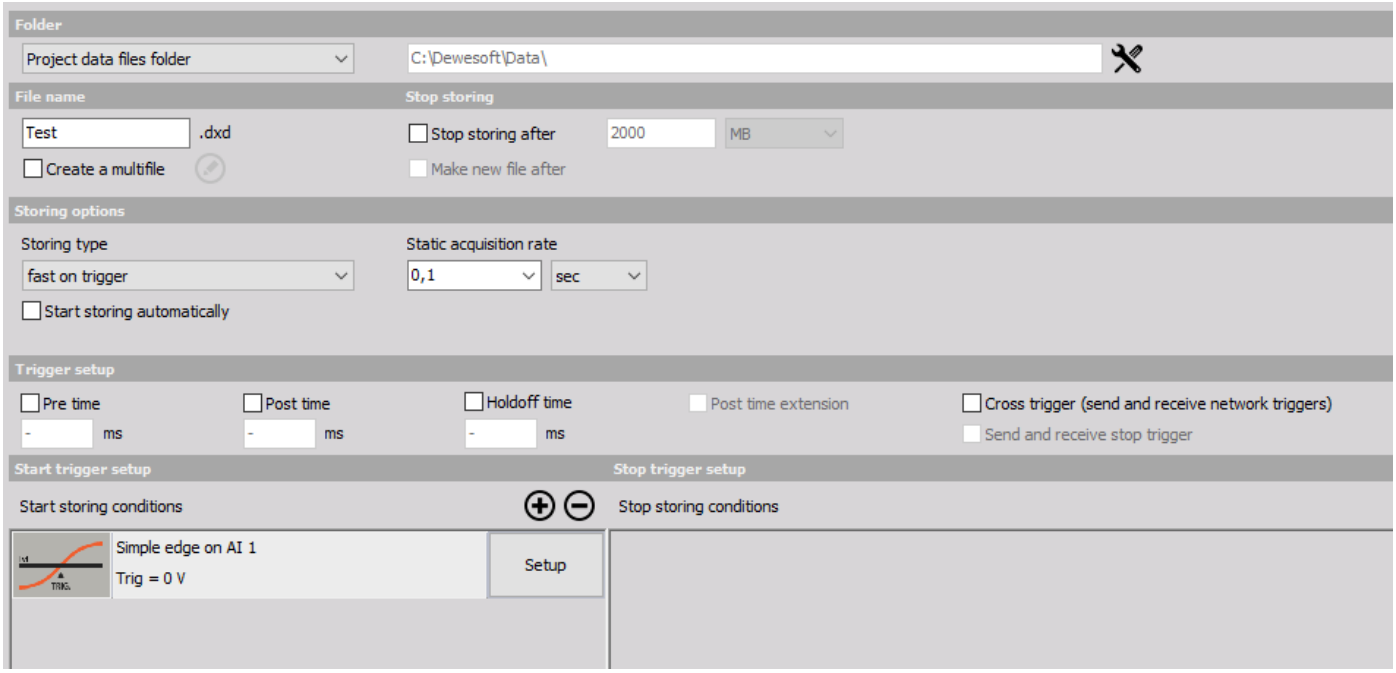


Image 18: Start storing conditions

In the Trigger setup window, we can choose Channels for triggering. We can select several channels for triggering, but since this example deals only with one, there is only one choice.

Then the trigger criteria need to be defined. The user can trigger on time data, time or FFT.

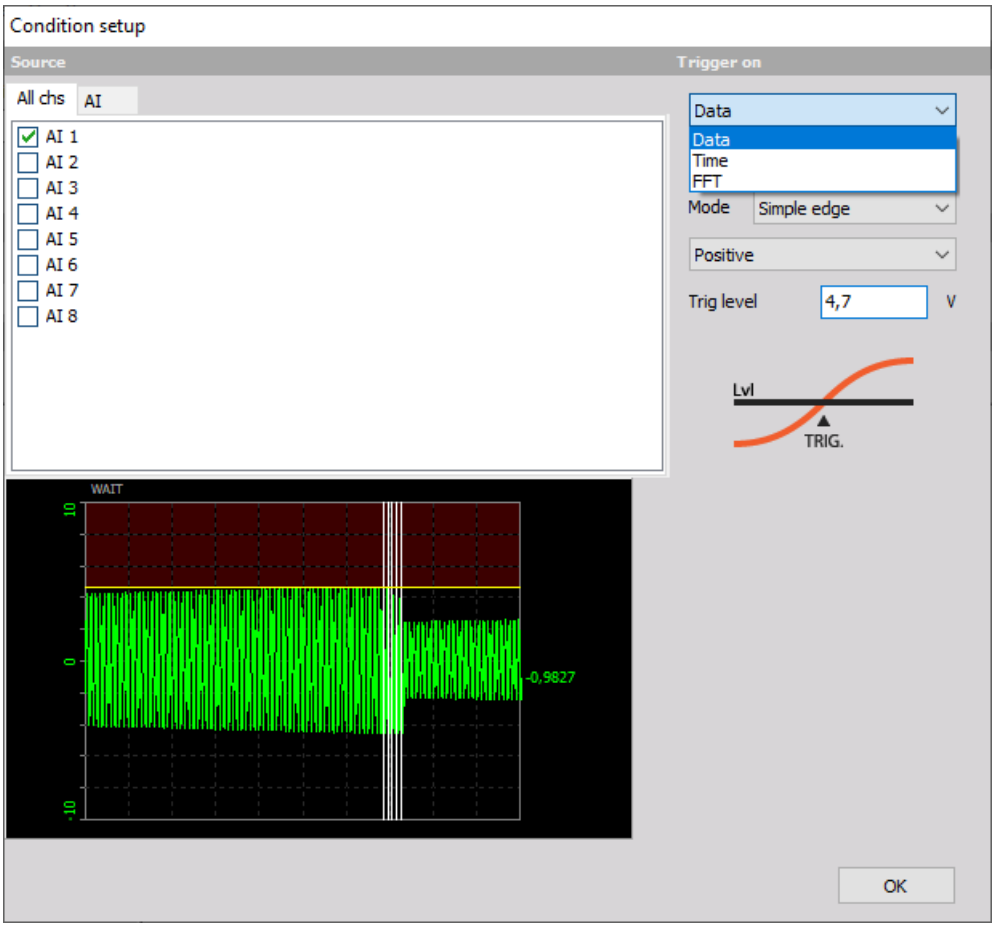


Image 19: Condition setup

Time triggering includes edge, filtered edge, window, pulse-width... on real data, average or RMS values.

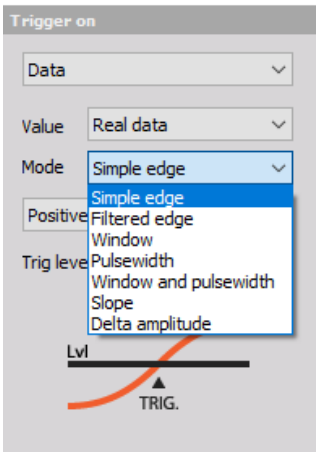


Image 20: Trigger on modes

For this simple application, only the simple edge with a trigger level of 0.5 will be selected. This means that when the value crosses the 0,5 V limit, it will produce a trigger. One can already test the behaviour of the trigger from the scope in the lower left side of the setup window.

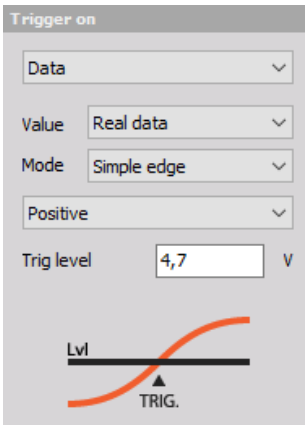


Image 21: Trigger on positive simple edge

Now let's take some measurements. The user just needs to meet the trigger criteria with sensor to produce the necessary trigger. We can see from the recorder that the first shot was not high enough, therefore we hit it harder. That did it, and one we can see the beginning of the storage event, the trigger event and the end the of storage event.

Note that the Store button changed the name to Arm

and there is an additional Trig button

This is the manual trigger to issue a to trigger even without an event.

Let's review the data being stored. We can see that only the trigger events are stored, yet for the rest of time the data is blank. Note that there is a new button, called TRIGGER MODE, in the data preview. This gives us a chance to review the trigger events without zooming in on the data. If it is clicked, the first trigger event is automatically zoomed in.

The trigger mode button changes to an "arrows" button, where we can browse between the events. If those two buttons are clicked, the recorder shows the trigger events one by one. On the data preview, we can see the currently selected trigger event. Right, click on the recorder to zoom out to the full region and to leave trigger mode.

Note that there was one peak at the beginning of storage. It was not enough to be stored with the trigger, but sometimes it is still nice to see what the values in the regions without the trigger event were.

FAST ON TRIGGER, SLOW OTHERWISE storing option

Data will be stored with the dynamic rate at trigger points, and with the reduced rate when there is no trigger.

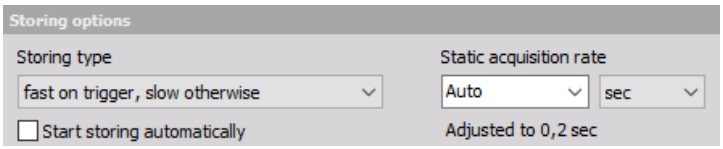


Image 22: Fast on trigger, slow otherwise storing options

To be able to acquire data with two speeds, we need to use a different strategy: Fast on trigger, slow otherwise. All the settings for this mode are the same as for fast on trigger. It should be noted, however, that if the user acquires and reloads similar data with this strategy, the data is also reduced for the regions without the trigger event. This can be seen on the picture below.

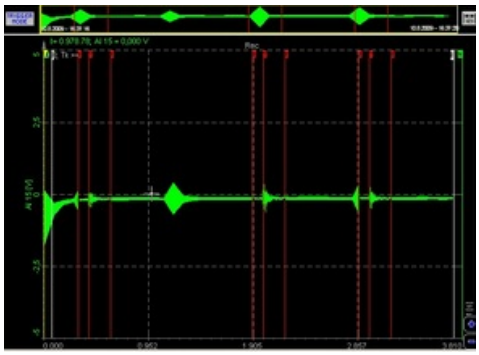


Image 23: Data sections with different speeds

By zooming in on the data, one can see the reduced, stored data before the trigger, where only the maximum and minimum of the signals is seen and then for a region with trigger the full speed data can be seen.

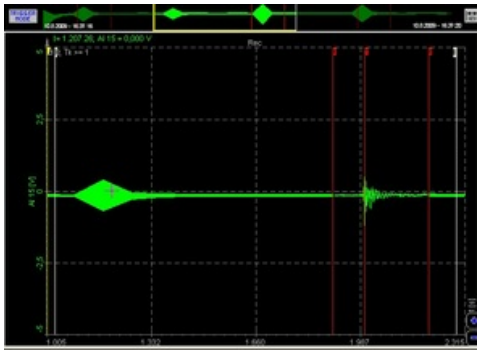


Image 24: Zoomed region with different speed

Static/reduced acquisition rate

When the static mode is selected, the system will still run at the dynamic sample rate shown in the box DYNAMIC ACQUISITION RATE, however, it will not store every data point. Instead, the system will reduce the data continuously according to the static/reduced rate selected here.

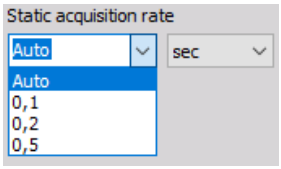


Image 25: Static acquisition rate

You can select the value from the drop-down list, like 0.1 seconds. This means that every 0.1 seconds the reduced data will be available.

If you select AUTO, the static/reduced rate will be adapted automatically depending on the setting of the dynamic acquisition rate.

You are also allowed to enter your own values, but be aware that not all values will be accepted - if so the real value will be mentioned below the drop down list.

For example, if we have a dynamic rate of 1000 Hz, and a static rate of 5 seconds, and we check that we wish to store the static rate, the system will sample at 1000 Hz, but will store a set of min/max/ave/RMS values for each input every five seconds.

This means that 5000 samples are going by for each channel, every five seconds. Are they ignored? No - they are used to derive the min/max/ave/RMS values which are saved for each active input, at the static rate!
So, each set of reduced samples are based on all 5000 samples that were seen for each channel between static intervals.

Important: when the system does this, it does not make a single column of data for each channel - instead, it creates multiple columns of useful data for each channel, including the min/max, RMS, and average values that were seen between each interval of the static/reduced rate.

CHANGE STATIC/REDUCED RATE SCALING

Sometimes it is required to change the units for the stating / reduced rate (Hz, sec, min, samples).

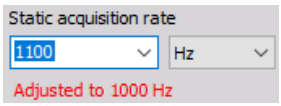


Image 26: Adjusted static acquisition rate

Simply click on the small arrow below the drop-down list to select another scaling.

For each unit (scaling) Dewesoft X will adapt AUTO value automatically (and show in Adjusted to field), depending on the setting of the dynamic acquisition rate.

Trigger conditions

On this screen start and stop trigger conditions can be set:

- Trigger setup to set the storage time before and after the trigger event
- Start trigger setup defines start and stop trigger condition; with Don't store setup
- Stop trigger setup defines when the storage should be stopped

TRIGGER SETUP

The Trigger setup can be used to influence the storage before and after the trigger event. Four settings can be used to achieve the desired result:

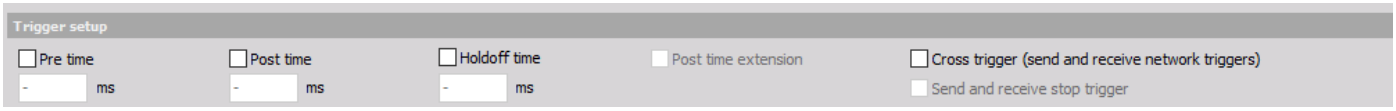


Image 27: Trigger setup

PRE time	Pre-trigger time, defined in milliseconds. This value defines the storage duration before the trigger event occurs Dewesoft X will keep the data in the buffer until the trigger event occurs and then store also this data to the file. As a standard, this feature is not selected and the storage starts with the trigger event itself.
POST time	Post trigger time, defined in milliseconds. This value defines the storage duration after the trigger event has been finished Dewesoft X will continue to store until we stop it manually or stop condition occurs. As a standard, this feature is not selected and the storage stops immediately after the trigger event is over.
HOLDOFF time	Gives you the possibility to suppress trigger events for a certain time after the last event had happened. This feature is not selected as a standard and will normally used when you have plenty of events or very long storage times.
Post time extension	The posting time extension is checked automatically as long as the Post time is not selected. The acquisition duration will be prolonged when further trigger events appear while the first one is still recorded.

The following example is set to 0,1 sec Pre and 0,2 sec Post time, so we will capture 300 ms of data in total per trigger event:

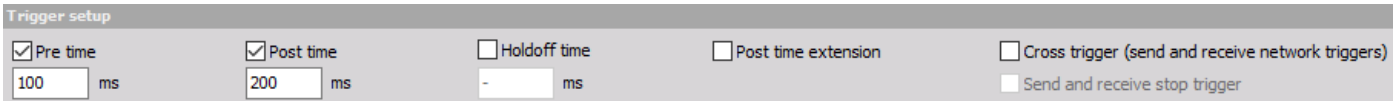


Image 28: Pre time and post time

START TRIGGER SETUP

When you select the trigger setup for the first time, there is no start trigger condition defined:

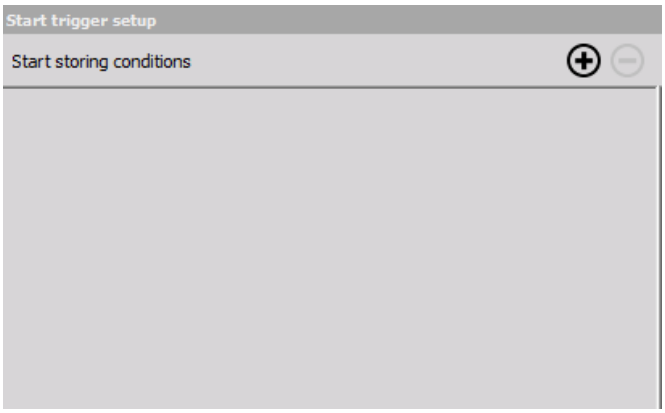


Image 29: Start storing conditions window

When you press:

+ (Add button)	A new trigger condition will appear immediately in the list
- (Remove button)	The selected trigger condition is removed from a list

Use the Add button to add a new Start trigger condition:

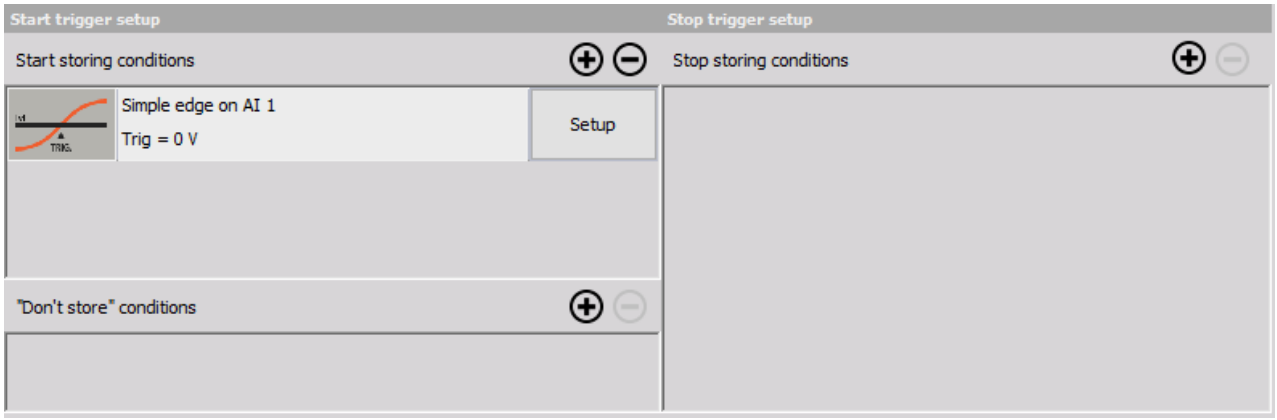


Image 30: Simple edge start storing condition for the first AI channel

After pressing Add button beside this new trigger Start storing conditions also appear:

- empty **Don't store conditions** section on Start trigger setup part of the screen
- empty **Stop trigger conditions** in new Stop trigger setup column

As a standard, the trigger condition is set to a Simple edge trigger with a positive edge at the first active analog input channel.

When we select the Setup button on the trigger condition line of Dewesoft X Setup screen, the Condition setup window appears to enter the trigger condition settings.

"DON'T STORE" SETUP

The Don't store trigger condition and Setup works in exactly the same way than the Start trigger setup.

This function can be used to suppress data storage for the defined condition.

For example, a machine is producing a certain part and you measure the pressure. The system should trigger when the pressure grows above a certain limit. But you only want to store the data if there is really a part in the machine. Then you can connect a signal to another channel which reports if the unit is present or not and use this result as a Don't store function

STOP TRIGGER SETUP

The Stop trigger condition and Setup works in exactly the same way than the Start trigger setup (see above). The only difference is that this section defines when the storage should be stopped.
Use the Post time feature from the Timing setup to prolong the storage time if required.

REMOVE A TRIGGER CONDITION

To remove a trigger condition simply click on the trigger illustration or the description field to select the condition, the selected field becomes darker - and press the minus button.

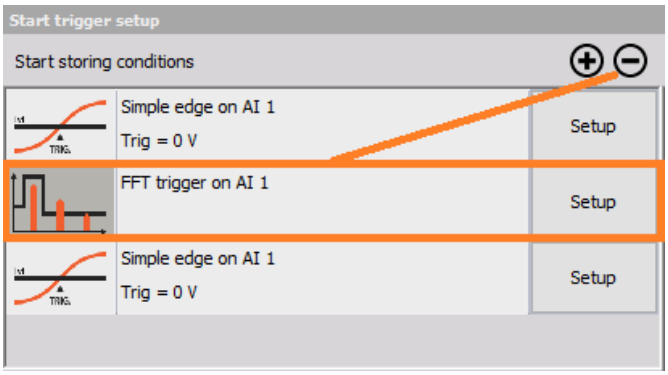
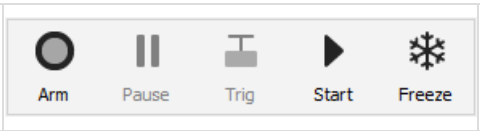


Image 31: How to delete the start storing condition

TRIGGER CONTROL ELEMENTS

To activate the selected trigger condition, just switch into an online display (scope, recorder,...) and press the Arm button on main Dewesoft X tool bar or F5 on the keyboard. As soon as the trigger the condition appears on the input, the data will be stored into a file.



When the trigger condition is activated, we see additional

Trig button, which tells us that we are using triggered storing. We can also press this button to issue a manual trigger.

If you want to force a trigger event even when it isn't available, press the Trig button or F6 on the keyboard. Trigger shots will

appear in the scope and the Trig button flashes.
If several trigger events appear, all of them will be stored in the same file. Dewesoft X offers a special analysis feature in the Analyse mode for easy data analysis.

Trigger condition setup

Dewesoft X offers several different trigger conditions, which can be set in Condition setup window. Trigger conditions can be combined completely independently, that combined with an OR function. That means any defined trigger condition has to become true to activate the trigger.

When we select the Setup button on the Dewesoft X Setup screen - trigger condition line, the following Condition setup window appears:

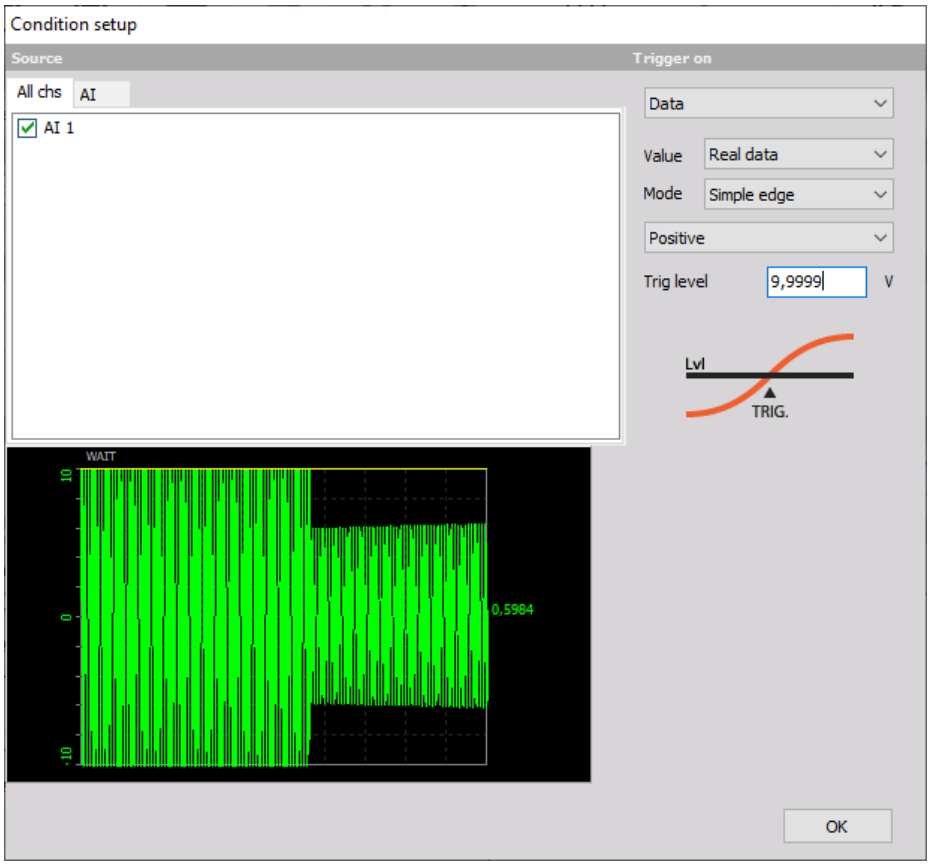


Image 32: Trigger level

In Condition setup window we can enter all the trigger condition settings. The **Source** section contains a channel list in two different tabs. **All chs** tab represents all used channels and **AI** tab filter only analog input channels. In lower part the current signal value is displayed. The white vertical lines displayed indicate when the trigger condition became true. On screen right side the **Trigger on** section represents trigger settings. This fields depends from selected trigger type, below trigger settings **symbolic trigger curve** is displayed.

Choose the trigger condition according to your requirements and press the OK button to accept the trigger settings.

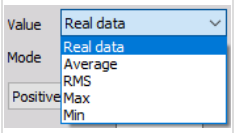
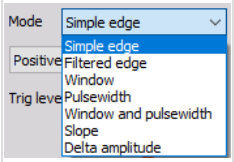
TRIGGER TYPE

The following trigger types are supported:

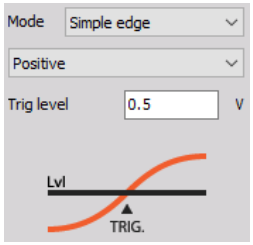
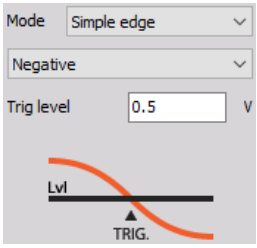
- Data
- Time

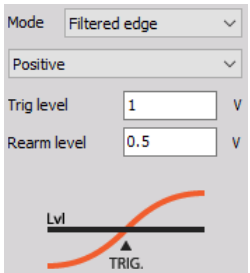
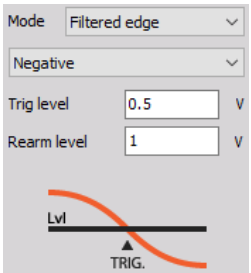
- FFT

Data trigger setup

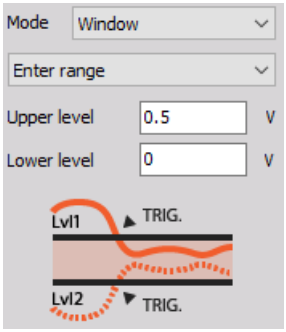
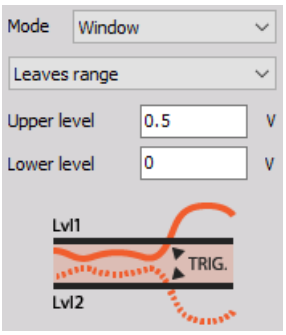
1. Define the Value When the data trigger is selected, you can also choose between Real data, Average or RMS from the drop down list for your trigger condition.	
2. Define the Mode Select the trigger type Simple edge, Filtered edge, Window, Pulse-Width, Window and pulse-width or Slope from the drop down list.	
3. Set up other trigger condition These settings (e.g. Slope, Trigger level, Rearm level, Pulse time...) depend on selected trigger type in Mode field.	

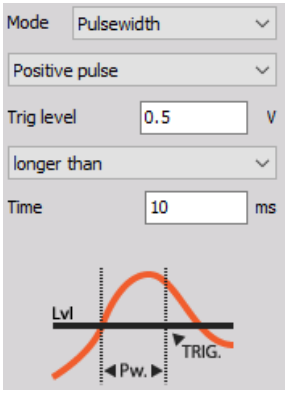
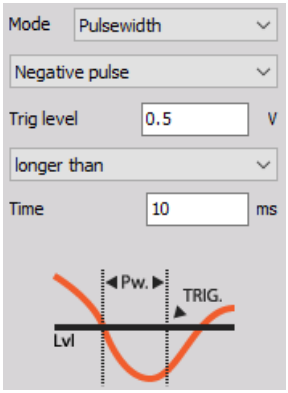
TRIGGER MODE AND SETTINGS

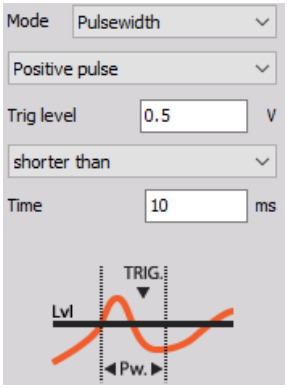
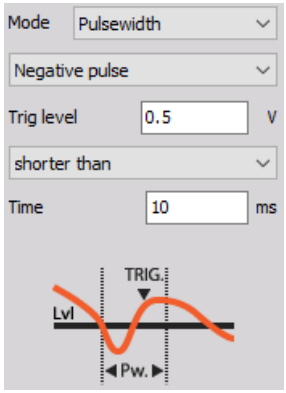
SIMPLE EDGE	POSITIVE SLOPE	NEGATIVE SLOPE
This is the most used trigger condition with data acquisition systems. The trigger event is a rising or falling edge, which crosses a defined level.	 Trigger on rising edge when signal rises over defined Trig level.	 Trigger on falling edge when signal drops bellow defined Trig level.

FILTERED EDGE	POSITIVE SLOPE	NEGATIVE SLOPE
is basically the same as the simple edge trigger, except for the rearming level. This level can be used to define a second level, which must be crossed before the trigger condition can become true again. This trigger type is mostly used with very noisy signals.	 Trigger on rising edge when signal rises over defined Trig level; retriggers only when Rearm level has been crossed.	 Trigger on falling edge when signal drops bellow defined Trig level; retriggers only when Rearm level has been crossed.

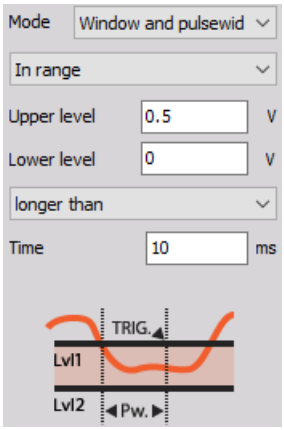
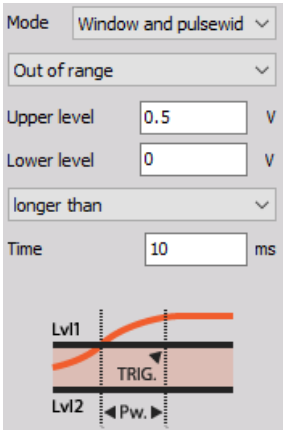
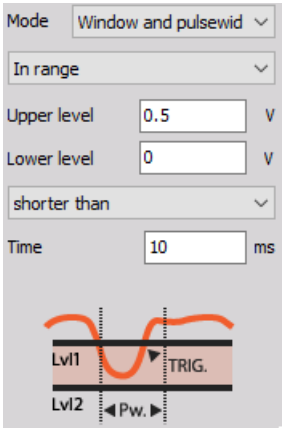
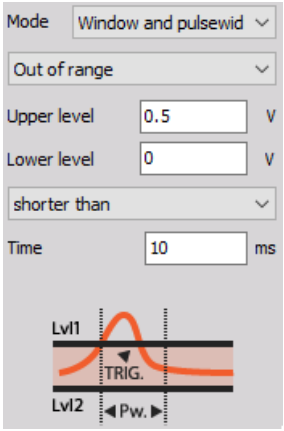
WINDOW	ENTERS RANGE	LEAVES RANGE

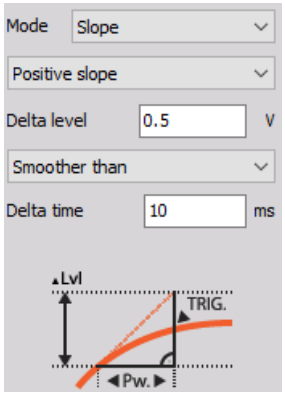
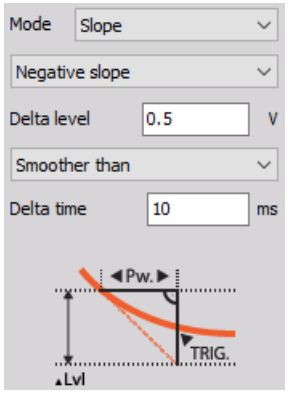
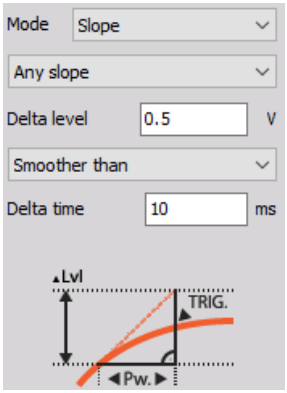
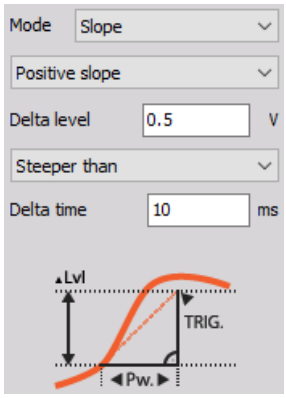
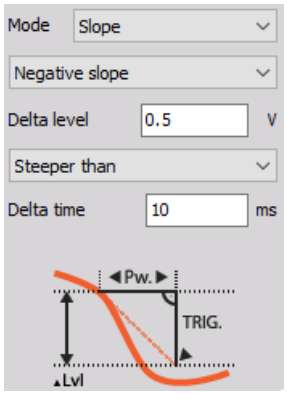
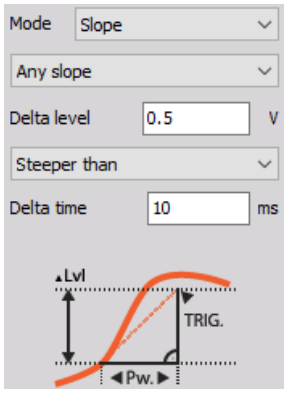
works with two independent levels, which build some kind of window. The trigger condition can become true when the signal enters or leaves the window.	 Trigger when the signal enters the window - signal falls below Upper level or rises above Lower level.	 Trigger when the signal leaves the window - signal rises above Upper level or falls belowLower level.

PULSE-WIDTH	POSITIVE PULSE	NEGATIVE PULSE
Longer than time checks in addition to the level (like the simple edge trigger) the duration Time of the event and triggers only if the event is longer above the selected level	 Trigger on rising edge when signal rises over defined Trig level and stays above this level longer than selected Time.	 Trigger on falling edge when signal drops bellow defined Trig level and stays bellow this level longer than selected Time.

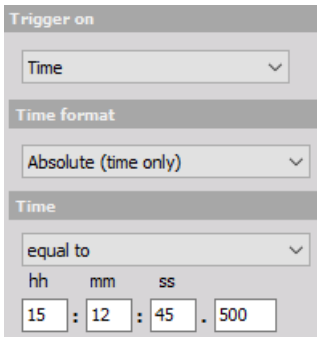
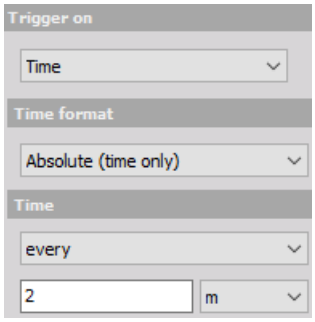
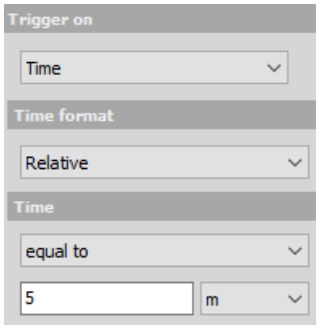
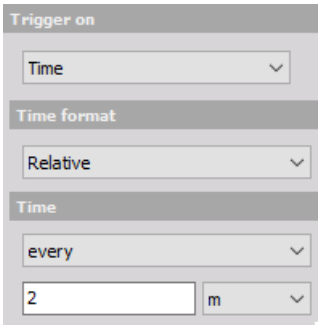
Shorter than time checks in addition to the level (like the simple edge trigger) the duration Time of the event and triggers only if the event is shorter above the selected level	 Trigger on rising edge when signal rises over defined Trig level, but falls below this level earlier than selected Time.	 Trigger on falling edge when signal drops bellow defined Trig level, but rises above this level earlier than selected Time.

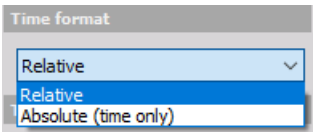
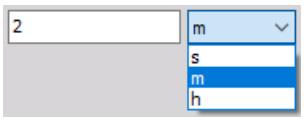
WINDOW AND PULSE WIDTH condition combines the features of the window and the pulse-width trigger; it is very powerful, but you really have to know what you expect to trigger on.	LEVEL IN RANGE	LEVEL OUT OF RANGE

Longer than time	 Trigger when the signal enters the window (signal falls below Upper level or rises above Lower level) and stays inside for a longer than defined Time.	 Trigger when the signal leaves the window (signal rises above Upper level or falls below Lower level) and stays outside for a longer than defined Time.
Shorter than time	 Trigger when the signal enters thewindow (signal falls below Upper level or rises above Lower level) but leaves before the defined Time is over.	 Trigger when the signal leaves thewindow (signal rises above Upper level or falls below Lower level) but returns before the defined Time is over.
SLOPE	POSITIVE SLOPE	NEGATIVE SLOPE	ANY SLOPE

Smoother than Delta time	 Triggers when signal rises over defined Delta level later than defined Delta time	 Triggers when signal drops below defined Delta level later than defined Delta time	 Triggers when signal rises over or drops bellow defined Delta level later than defined Delta time
Steeper than Delta time	 Triggers when signal rises over defined Delta level earlier than defined Delta time.	 Triggers when signal drops bellow defined Delta level earlier than defined Delta time.	 Triggers when signal rises over or drops bellow defined Delta level earlier than defined Delta time.

Time trigger setup

ABSOLUTE (TIME ONLY)	 The system triggers exactly at the defined time hh:mm:ss.xxx (also every day if the time matches).	 The system triggers every defined time x [unit], the time starts running from the beginning of measurement.
RELATIVE	 The system triggers when the defined time x [unit] has been passed since the measurement has been started.	 The system triggers every time x [unit], the time starts running from the beginning of measurement.

Time format select from drop down list: 	Time select from drop down list: 	[unit] select from drop down list: 

FFT trigger setup

Up to now, we triggered the system only on amplitude values over time and/or directly on time. The FFT trigger allows us to trigger amplitude values in the frequency domain.

This type of trigger is very helpful in any kind of dynamic applications where you want to supervise the frequency behavior of the system under test.

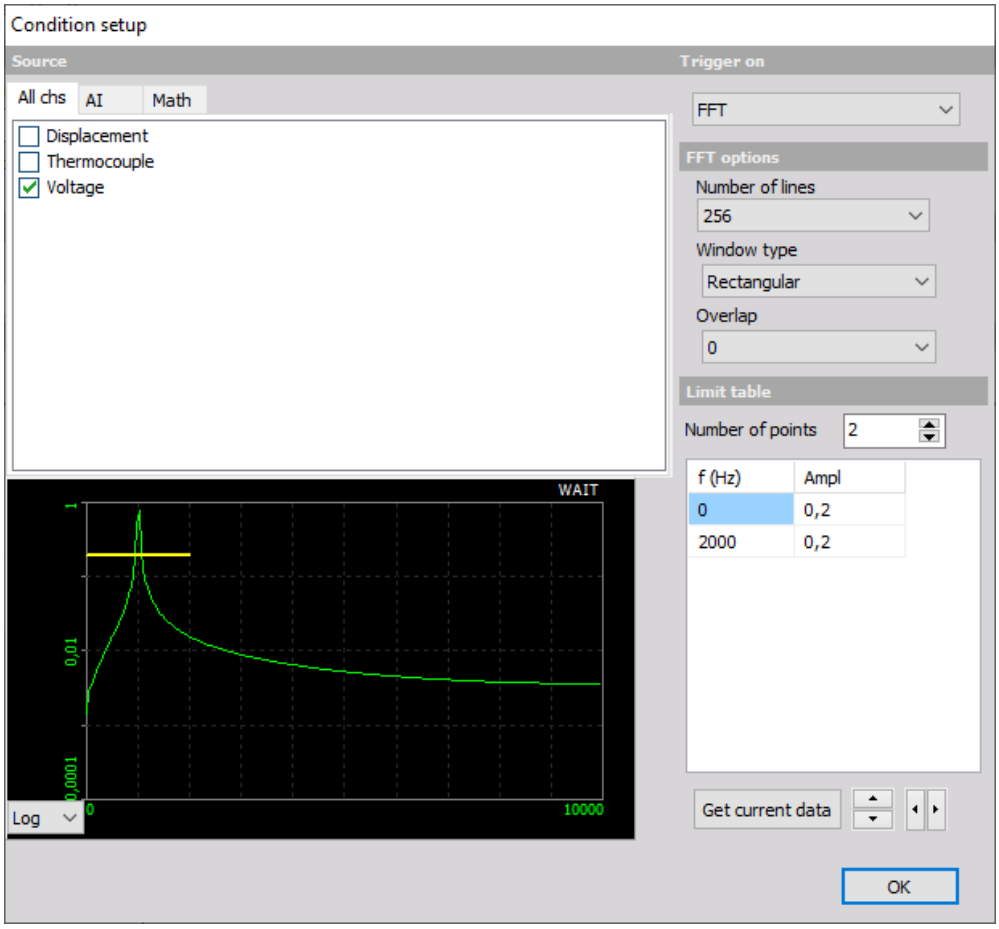


Image 33: Trigger setup on amplitude values of the frequency domain

FFT options

To trigger on frequency changes you have to define the FFT options to get a useable result to trigger on:
- Number of lines (256 to 64k),
- Window type (Rectangular, Hanning, Hamming, Flat Top, Triangle, Blackman and Exponent down) and
- Overlap (0, 25, 50, 66 and 75%)

Preview at the left bottom area shows the change effects on the FFT immediately. On this display can be select beside Logarithm (see the display below) also Linear display.

Image 34: Changing between Logarithm or Linear display

Limit table

After you have done your FFT option settings you have to define:
- Number of points (limits on Limits table)
- the limits - Ampl. levels for f [Hz] on Limits table.

Default (standard) Number of points are 2. The standard Ampl. level is 1 for 0 and max. frequency. You can click on this field and change this value.

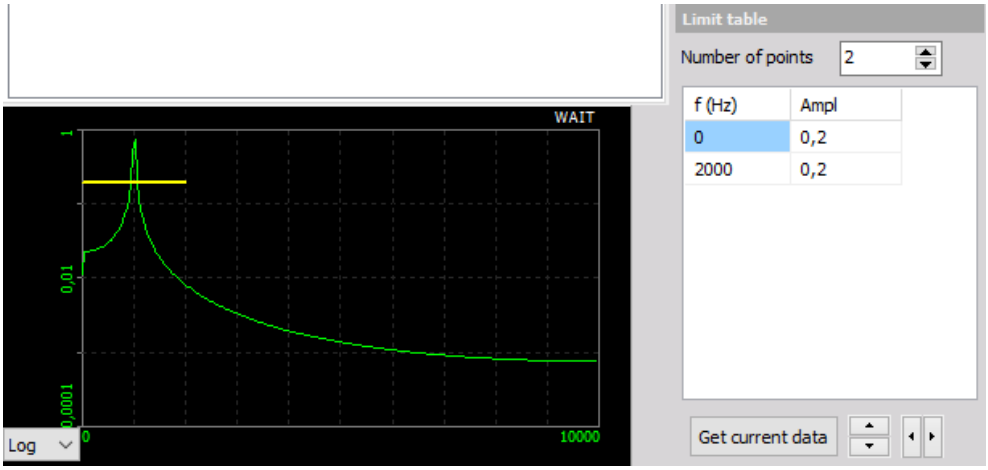


Image 35: Limit table

You can increase the Number of points to expand the table (e.g. 6 in the example below).

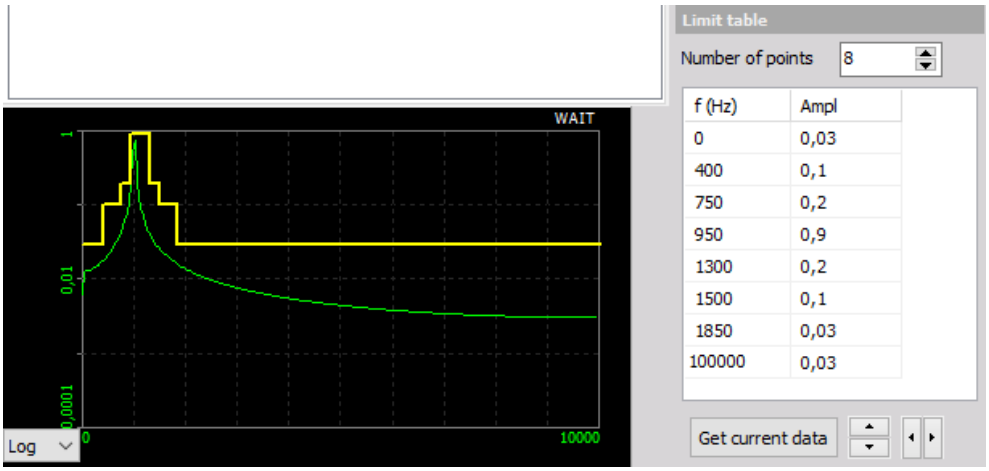


Image 36: Expanded table to an arbitrarily curve

You can now define the limits in two ways:

1. Enter the values manually
When you enter the values manually into the table, you normally take just a viewpoints to define the frequency mask.

2. Take current measurement from the system
The second way is to take a frequency mask out of the currently displayed signal. To do that simply presses the Get current data button.
The currently calculated FFT will be stored as a mask and displayed both on the preview display and in the table at the left bottom.

Now you can manipulate the mask by editing the table or - much faster - pressing the

button to move the limit up / down and the

button to add/remove limit in the frequency domain.

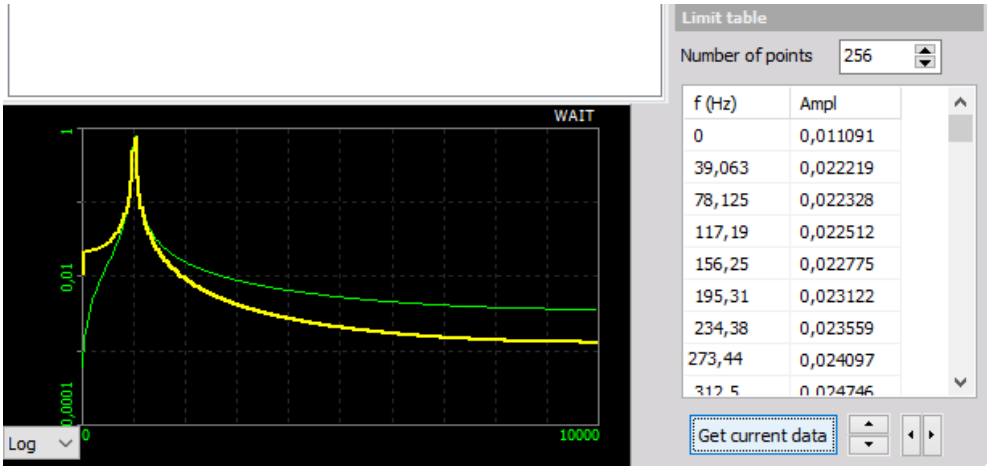


Image 37: Get current data from the measured frequency values

Examples:

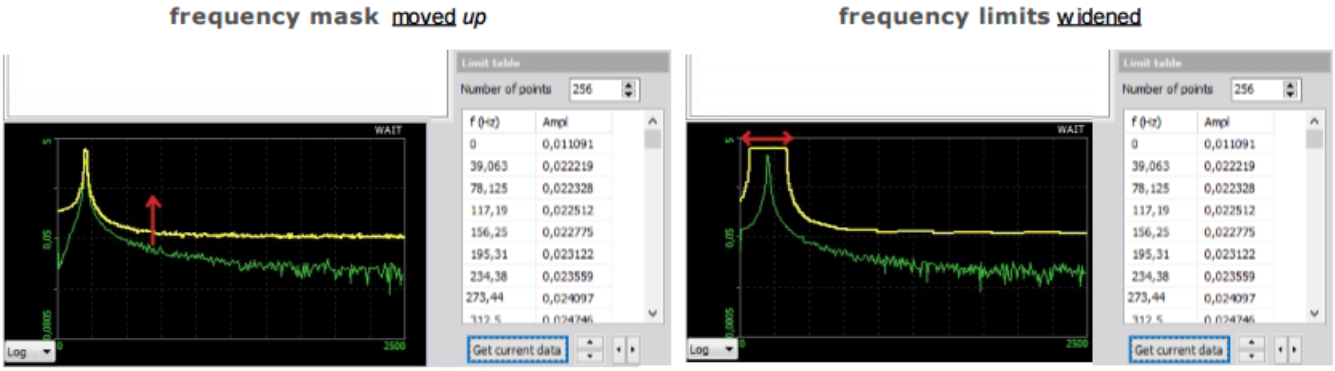


Image 38: Modified amplitude-frequency values.

Data header information

Data header allows us to define input fields in which operators can enter additional not measured parameters at start or end of the measurement.

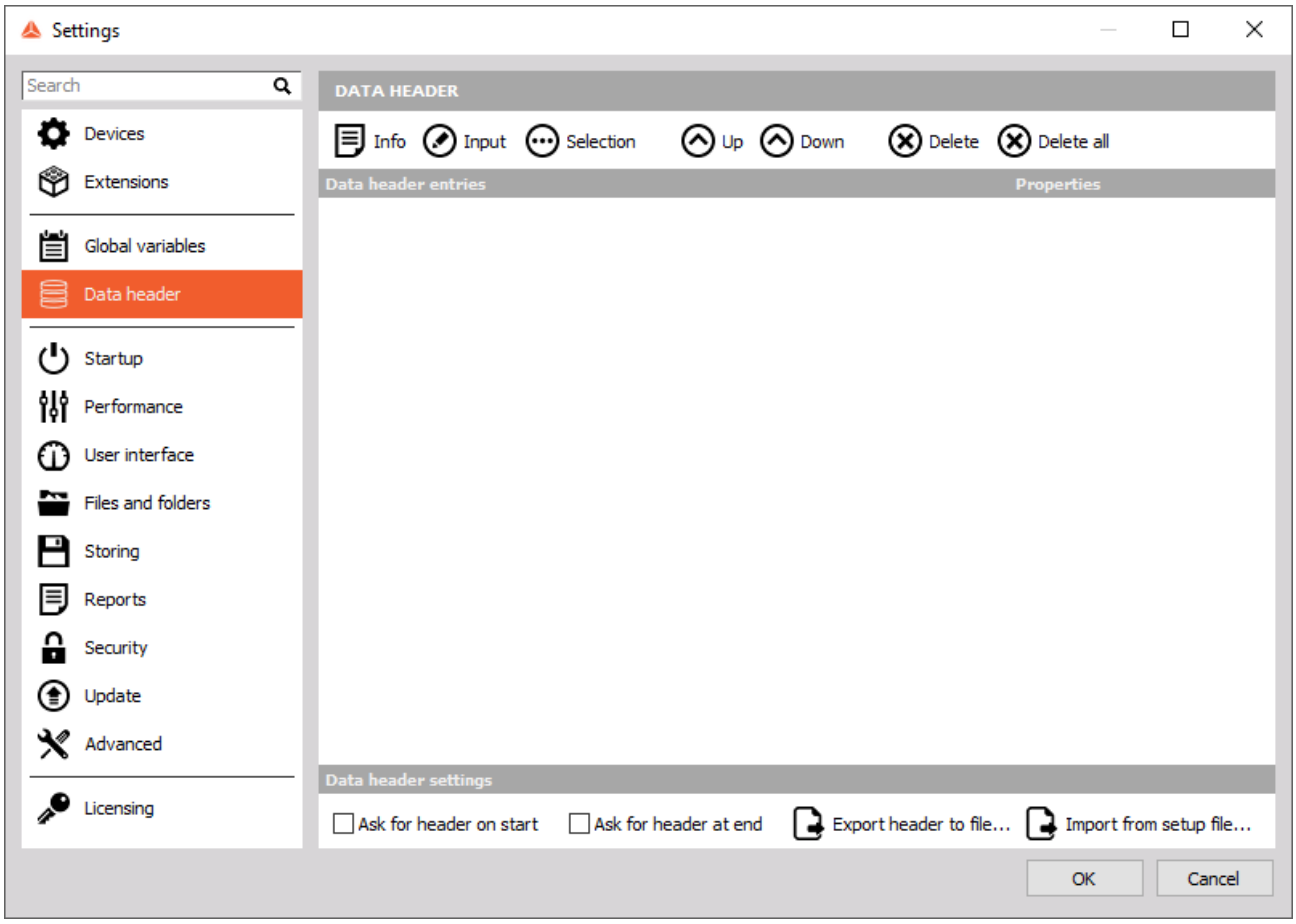


Image 39: Data header settings

Icon bar

Image 40: Icon bar

The icon bar at the top of the window allows you to change the right section of the window. We will now check icon by icon the functions. They can be used to create, delete, or move fields. The currently selected field will have an orange box around.

Info field

The **Info** button adds a new line in the right section of the window.

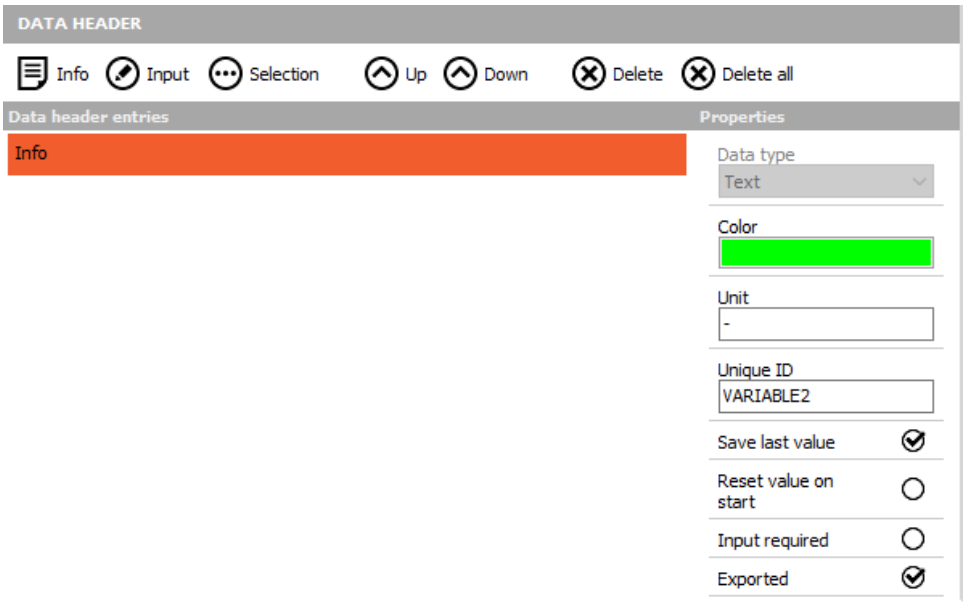


Image 41: Adding info entry

Just click in the new line and enter the desired text, for example, 'File header information'.

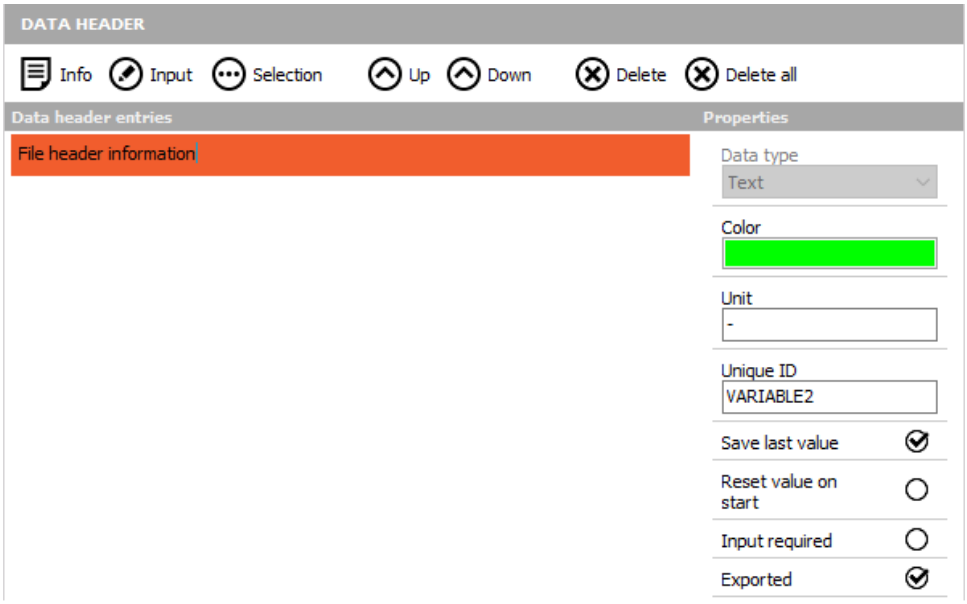


Image 42: You can rename the Info description

Input field

The **Input** field can be used for any single line values or comments (you can use it for example for location information...).

Let us create a new field with press the Input icon:

Image 43: Input field

and rename it (for example to 'Location'). To rename the field, just click on the name and overwrite it:

Image 44: Rename the input field

Selection field

The **Selection** field can be used for creating the list of 'value' and is very useful when you have to use the same 'value' very often. This can be for example a list of user names or also a list of departments within your company.

Let us create a new list with press the Selection icon:

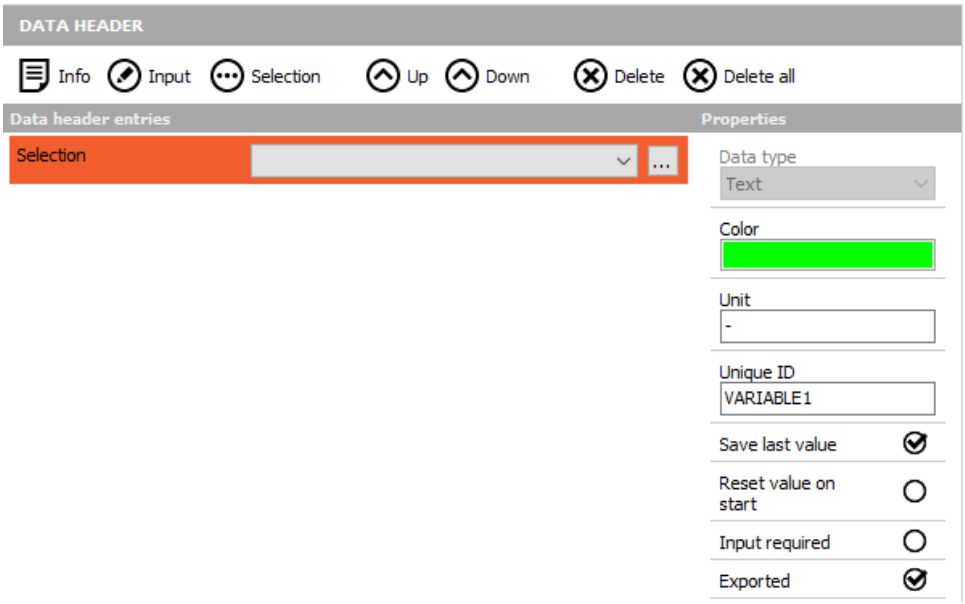


Image 45: Adding the selection field

and label it (for example 'User' - click on 'Selection' and overwrite it):

Image 46: You can rename the selection field

Now you have to define the content of your list. To do that, press the ... button on the right side and Create Selection List window appear.

Enter the desired names in the New Item field and press the **Add item** button:

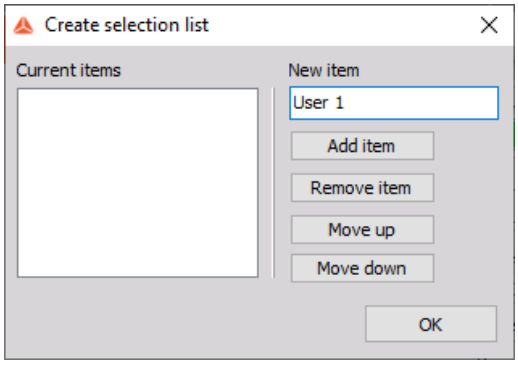


Image 47: Creating the selection list

The name will appear in the list on the left side, in our example labeled User 1:

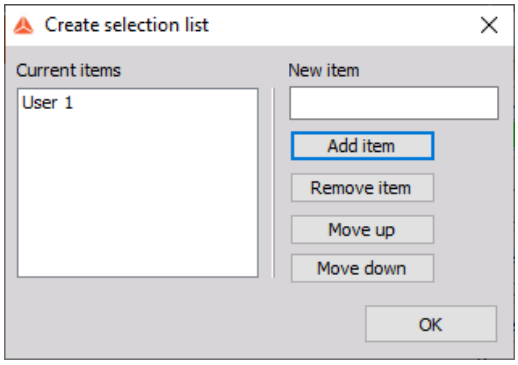


Image 48: Adding the items to the selection list

Enter as many names as required. You can also edit values directly in the list by selecting an item.

To remove an item, just select it from the list on the left side and press the Remove Item button. When all names are entered, press the OK button or press Cancel to reject all entries. The result of upper entries is the following drop-down list in the global header window :

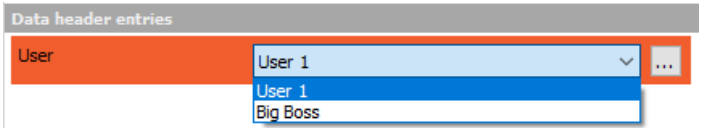


Image 49: Selection dropdown menu

Position up/down

With both buttons up and down, you can now change the position of the:

- File name field
- Comments field
- Input field
- Selection field
- Info field (like created above)

You can change the position of fields at any time. Just select it (the red box will appear) and move it up or down using appropriate button.

For example, we want to move above created info field to the top of the window, press the **Move up button** twice:

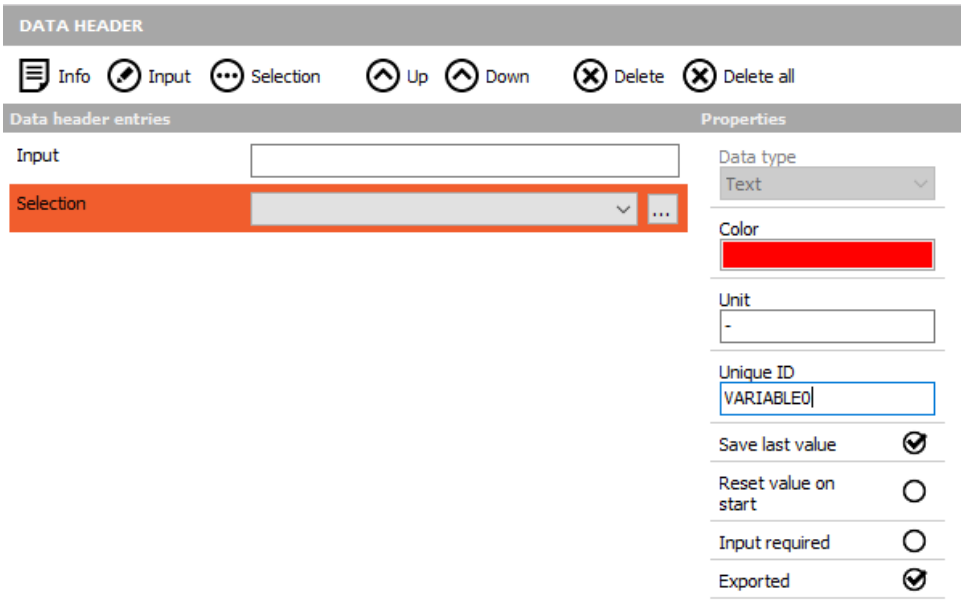


Image 50: Data header entries

Delete field

To remove unused or non-required fields, select the field and press the **Delete** icon. The only field you can't delete is the File name entry field.

Ask for the header on the start option will pop up a window with all entries before the start of storing. Ask for the header on the end will open the same window when the measurement is stopped.

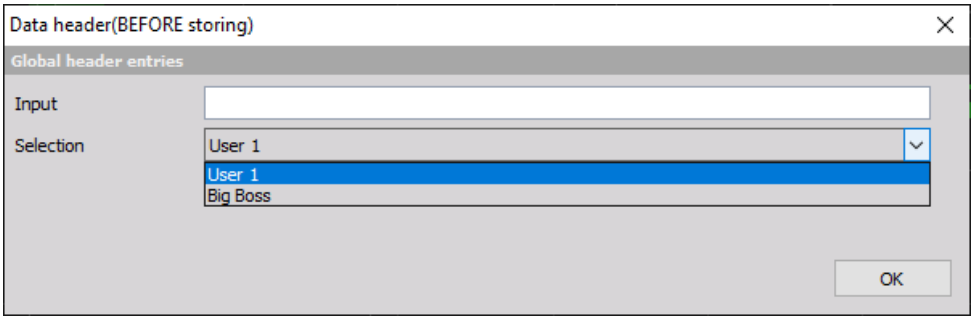


Image 51: Pop up window before storing to entering the values

Data manager

The data manager is a new plugin for copying acquired data to FTP server or to Local folder.

This is Data manager's main functions:

- Copy files to network drives
- Copy files to FTP server
- Stop measurement / Shut down the PC
- Remove old files

You can download Data manager from Download section on our web page.

When we download it, we need to go to Dewesoft X.

First let's go to settings in the right upper corner of the screen and enter Settings.

This is the screen that opens. We need to go to Extensions marker and select New extension on a + button.

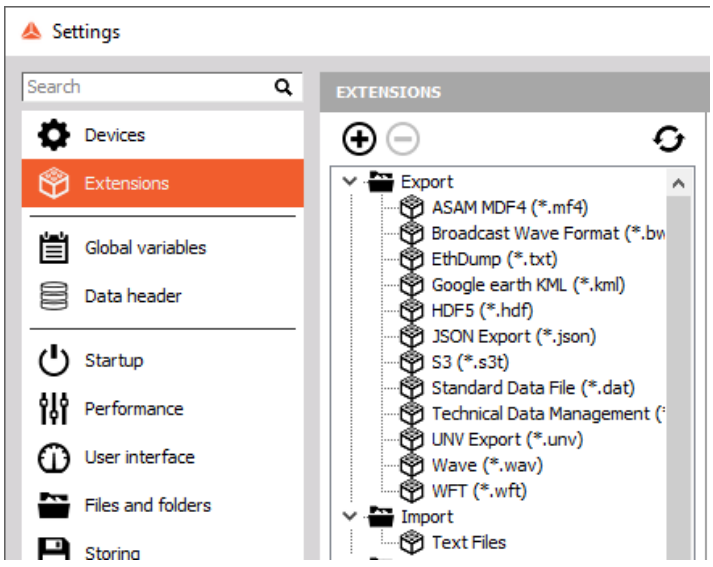


Image 52: How to add an extension

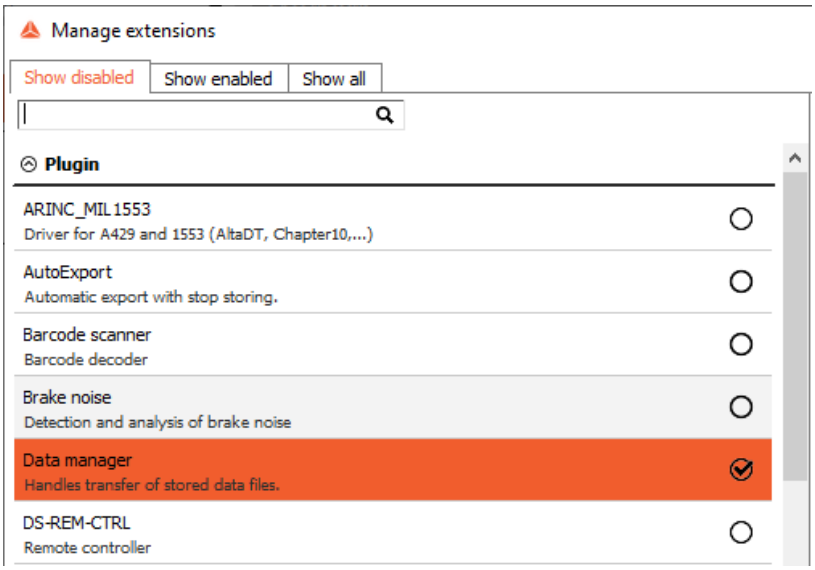


Image 53: Adding the Data manager plugin

After we press OK, we can see, that Data manager was added to our Extensions list.

Our next step is go to Channel setup and enter the DataManager2 marker.

When we press the button, this is the screen that appears:

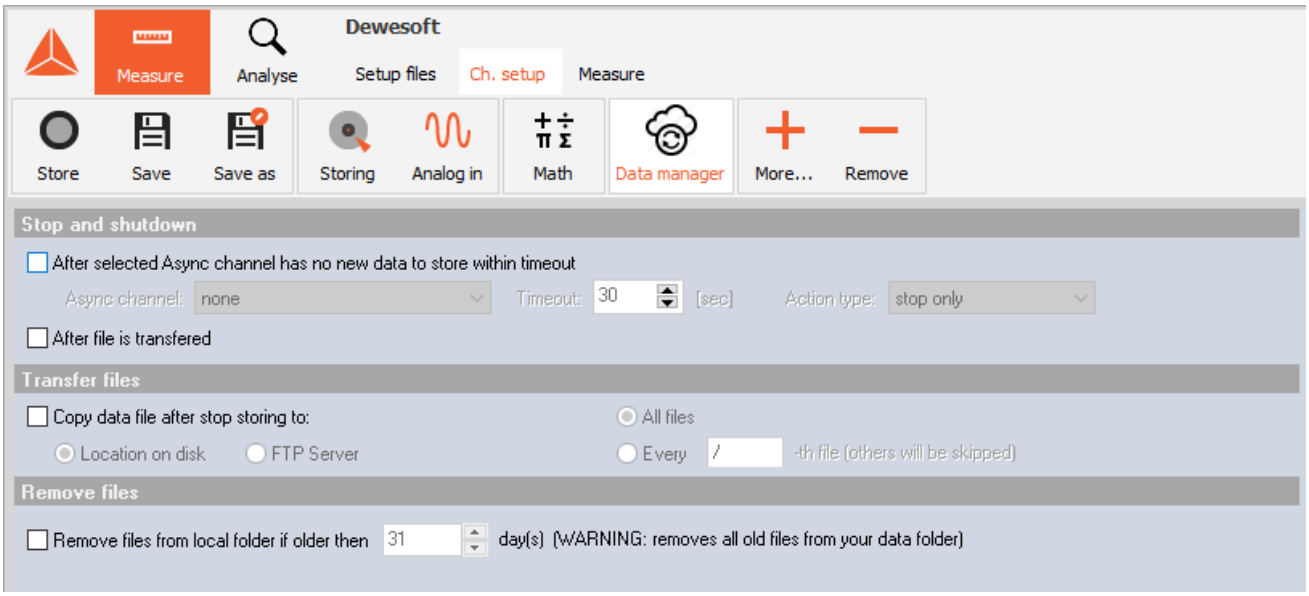


Image 54: Data manager plugin

Our screen is divided into three sections: Stop and Shutdown, Transfer files and remove files.

1. Stop and shut down

We can choose when we would like to stop storing or shut down the computer. We can do it after selected Async channel has no new data to store within specified timeout or after the file is transferred.

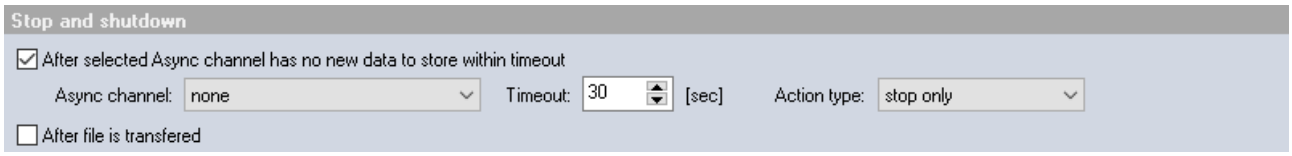


Image 55: Stop and shutdown section in the Data manager

If we choose the first option, then we need to select the Async channel option, timeout and action type.

2. Transfer files

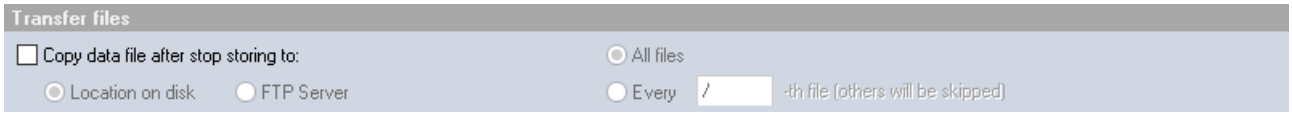


Image 56: Transfer files section in the Data manager

We can transfer files to a specific location on a disk or to FTP server. We can decide either we would like to copy all files or every x-the file.

If we transfer files to a Disc location, we simply select the Directory where data will be copied. We can also see all the existing files.

If we decide to transfer data on an FTP server, we need to type in the specific information, like Host, Port, local folder, etc.

There are also some additional options. We can choose to rename the existing file, overwrite it, skip it or resume it. we can also decide to delete the files after transferring them and copy files which transfer wasn't successful. Some FTP servers demand passive connection, so It is always good to test the connection to make sure that it works properly.

3. Remove files

Our last field allows us to remove specific files.

We can select the number of days that need to pass before the files are removed from the local folder. Please don't skip the WARNING note. This option will remove all old files from the data folder.

Image 57: Remove files in the Data manager

Local time and UTC time

The time at which Dewesoft X stores the files by default is always Coordinated universal time (UTC), but it can display stored data in local time, UTC time, and telemetry time.

The problem that can follow is that for example if the files were recorded in Russia at 10pm, it was stored in UK at 7pm (local time) which is exactly what is shown when you look at the file time in UK.

When your work with customers doing long-range rockets, it becomes even more complicated as the time zone changes during recording every x minutes. That's why in Dewesoft X you have the option to show the file time format in local time, UTC, and telemetry UTC (day of the year).

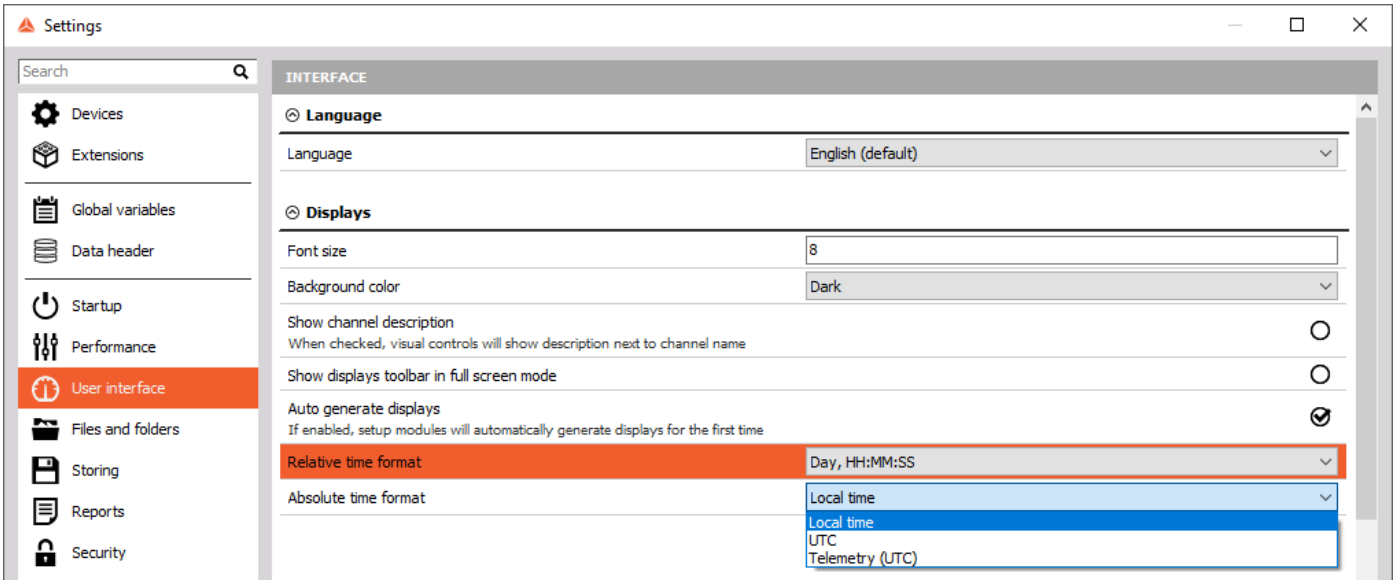


Image 58: Local time and UTC time settings