

Sefram

Data Acquisition Solution

DAS 220 - 240

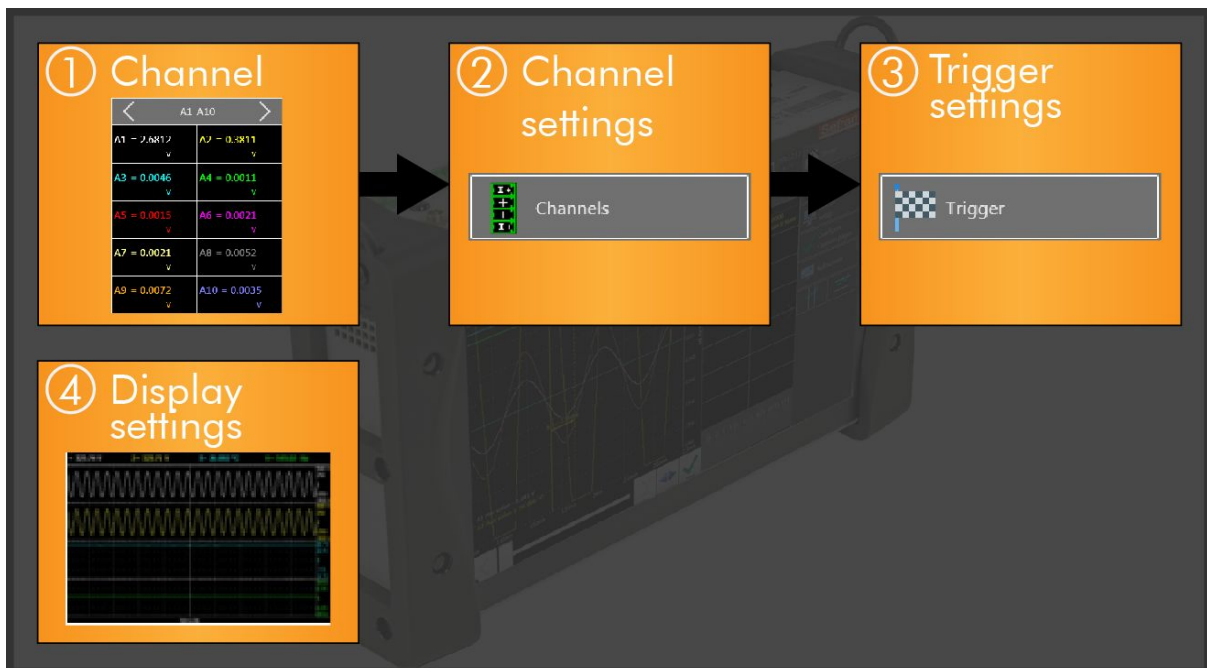
Quickstart guide

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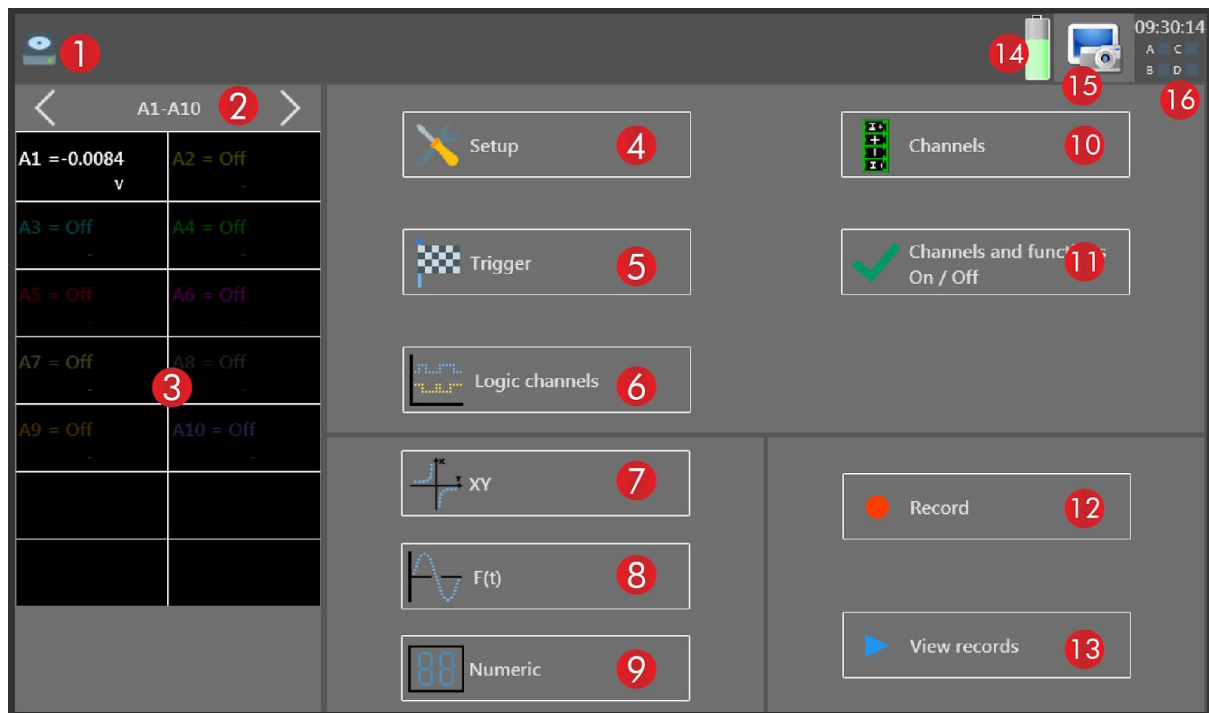
► [Instrument functions](#)

The Sefram's Data Acquisition Solution make the display and the recording of signals possible. Below is a synoptic which summarize the step to follow in order to make a good recording. Those steps are described along the guide.



► Main menu

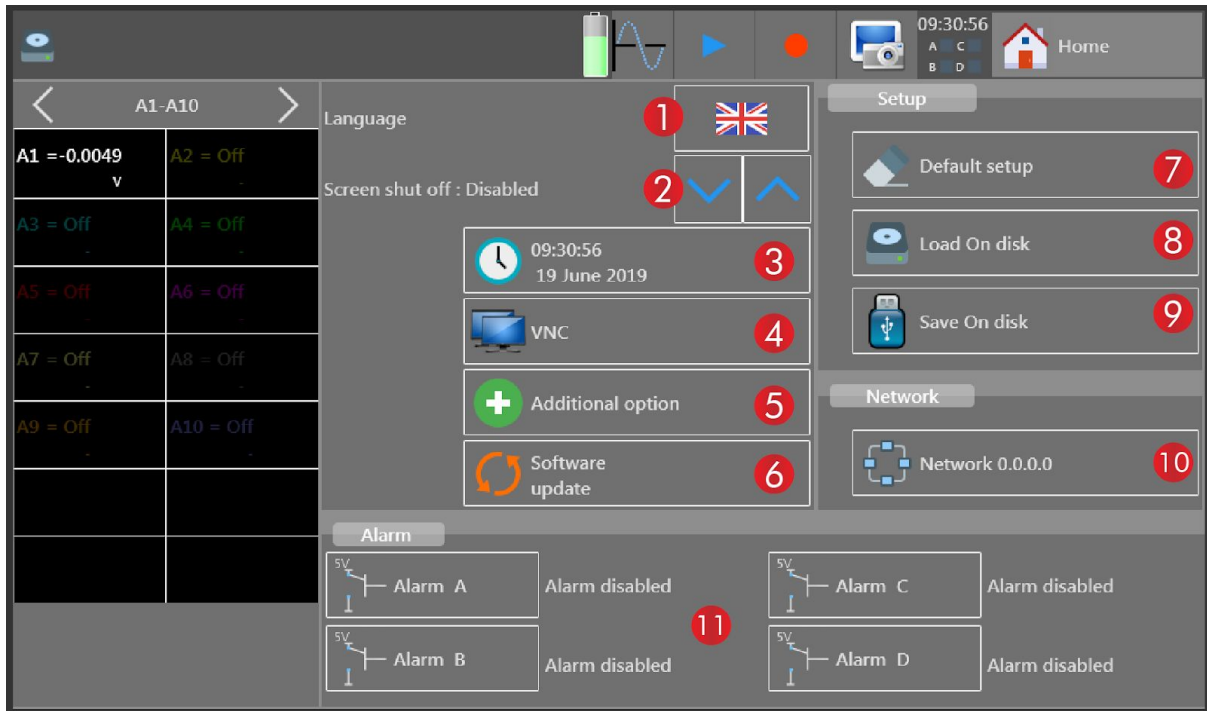
During the first start of your DAS 220 or 240, the main menu is displayed. From here it's possible to access to the different instrument functions as well as their parameters.



- ① Display of the actual recording mode
- ② Channel display, they can be activated via the checkboxes
- ③ Display of bits values from the logic channel
- ④ Device setup menu
- ⑤ Trigger settings menu
- ⑥ Display of the logic channels values
- ⑦ XY display
- ⑧ F(t) display
- ⑨ Digital display
- ⑩ Channel settings
- ⑪ Channel and function activation
- ⑫ Immediately launch a recording
- ⑬ Read a record stored in the memory
- ⑭ Battery level
- ⑮ Take a screenshot
- ⑯ Time and alarms states

► Setup menu

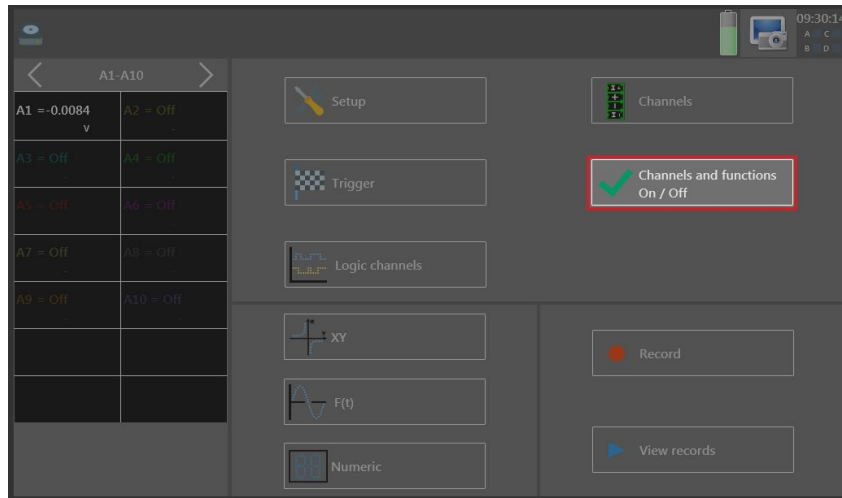
Before the first use, please set the standard settings such as time and date. This menu contains in addition, the basic settings, the managing of setup, alarms and network.



- ❶ Language selection
- ❷ Delay until the screen shut off
- ❸ Time and date setting
- ❹ Bargraph maximum position setting
- ❺ Additional options, (luminosity, calibration, ...)
- ❻ Software update with USB key
- ❼ Default setup
- ❽ Load a setup saved on the internal storage or on an USB key
- ❾ Save the actual setup on the internal storage or on an USB key
- ❿ Network setting
- ⓫ Alarm setting, see the manual for more details

► Channel settings

Firstly, the activation or deactivation of the channels is carried out by the button "Channels and functions On/Off" of the main menu, which also allows to activate the functions (see complete manual).

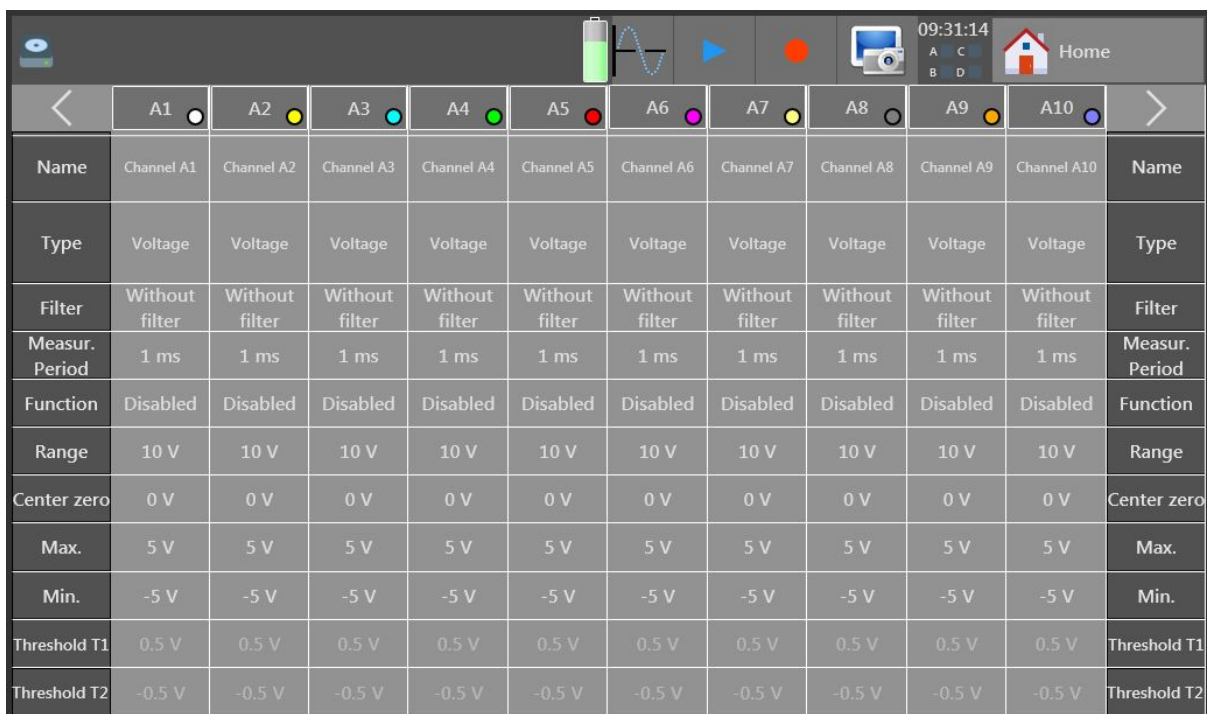


Then, access to the setting of a channel is done either by directly touching the channel (1), or by going through the menu "Channels" then pressing the channel concerned (2).



- ① Current name of the channel
- ② Rename the channel
- ③ Setting the color of the curve corresponding to the channel
- ④ Setting of the thickness of the curve
- ⑤ Measured value type
- ⑥ In the case of using an external sensor, setting its type
- ⑦ Track's range setting
- ⑧ Track's center zero adjustment
- ⑨ Position of the thresholds of the channel, for instance with a range of 25 BAR and a position set to "center", the acquisition is made from 12,5 BAR to -12,5 BAR
- ⑩ Summary of settings and ranges
- ⑪ Setting of the input low-pass filter, if necessary
- ⑫ Setting of plot threshold T1
- ⑬ Setting of plot threshold T2
- ⑭ Changing the unit of measurement to match the measured value
- ⑮ Changing the unit of measurement to match the measured value or select a mathematical function
- ⑯ Copy the current channel settings to another channel

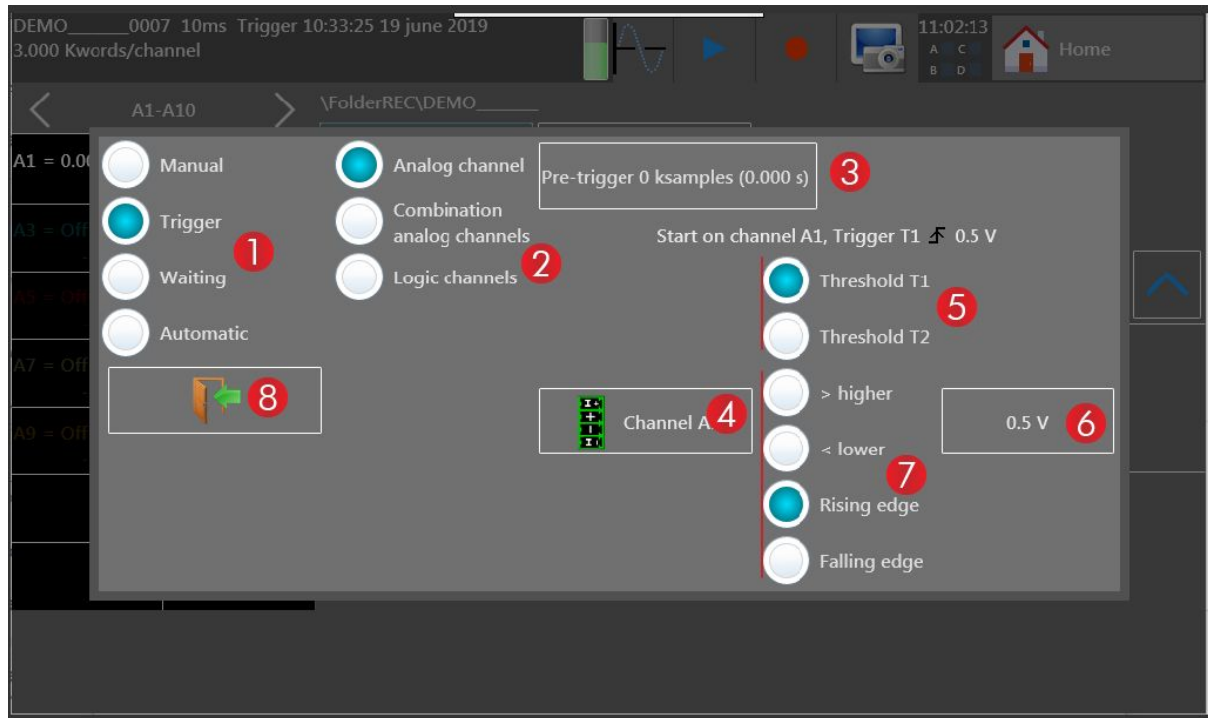
Note that the settings for all channels can be viewed simultaneously in the "Channels" tab.



	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	
Name	Channel A1	Channel A2	Channel A3	Channel A4	Channel A5	Channel A6	Channel A7	Channel A8	Channel A9	Channel A10	Name
Type	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	Voltage	Type
Filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	Filter
Measur. Period	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms	Measur. Period
Function	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Function
Range	10 V	10 V	10 V	10 V	10 V	10 V	10 V	10 V	10 V	10 V	Range
Center zero	0 V	0 V	0 V	0 V	0 V	0 V	0 V	0 V	0 V	0 V	Center zero
Max.	5 V	5 V	5 V	5 V	5 V	5 V	5 V	5 V	5 V	5 V	Max.
Min.	-5 V	-5 V	-5 V	-5 V	-5 V	-5 V	-5 V	-5 V	-5 V	-5 V	Min.
Threshold T1	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	0.5 V	Threshold T1
Threshold T2	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5 V	Threshold T2

► Triggers settings

Once the channels are correctly configured, triggers must be set. Regardless of the recording mode except network analysis, this setting is the same. First of all, it is necessary to choose the type of trigger and the channel on which the measurement is made for triggering :



① Choice of trigger type :

- Manual : only the user can trigger the recording using the buttons presented at the bottom of this page
- Trigger : triggering from a certain configurable threshold
- Waiting : triggering from a delay or date
- Automatic : immediate triggering until the memory block is saturated, causing the recording to stop automatically

② Choice of the type of channel on which the measurement is made for triggering

③ Set a pre-trigger, see manual for further explanations

In "Trigger" and "Analog channel" mode :

④ Choosing the channel to record

⑤ Choice of the threshold on which to trigger, two thresholds are configurables, which makes it possible to have one for the trigger and the other for the stop

⑥ Setting the trigger threshold value

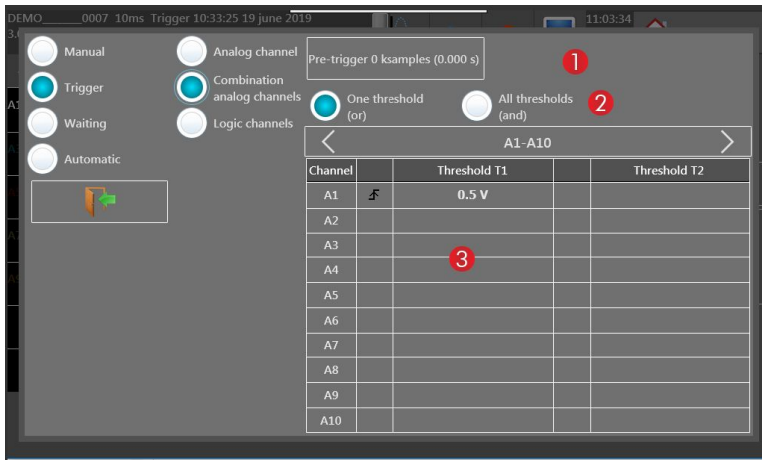
⑦ Choice of threshold type

⑧ Leave this setup menu

It is possible, at any time, to force the beginning of the acquisition with the button (2) and to visualize the old recordings using the button (1) of the upper tab.



"Trigger" and "Analog channel combination" modes :



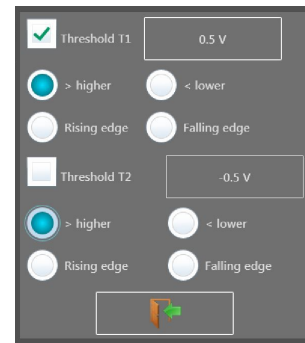
This mode allows, unlike the "Analog Channel" mode, to take into account several analog channels simultaneously.

① Pre-trigger settings

② Choice of trigger conditions :

- "One of the thresholds" : triggers if one of the thresholds is validated
- "All thresholds" : triggers if all thresholds are validated

③ Each channel can be set independently by pressing its corresponding line, the following menu appears and allows the setting of the thresholds, in the same way as in "Analog Channel" mode.



"Trigger" and "Logic channels" mode :

This mode is used to triggers according to the values of the logical channels.



① Visualization of the template word to trigger

② Choice of the bit to set

③ Assigning a value to the selected bit, X means that the value should not be taken into account

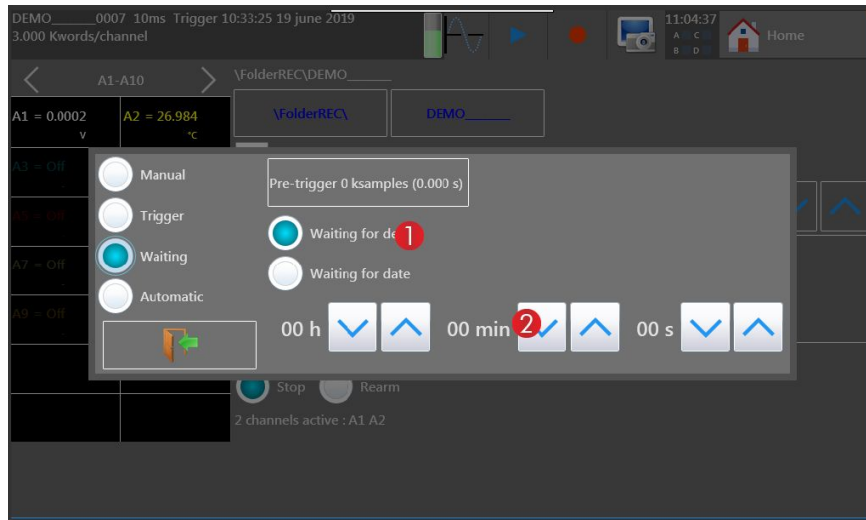
④ Choice of the logical operation to be performed between the template word and the measured

one to start the trigger

⑤ Choice of when the comparison should be made

"Waiting" mode :

This mode allows triggering after a certain delay or date.

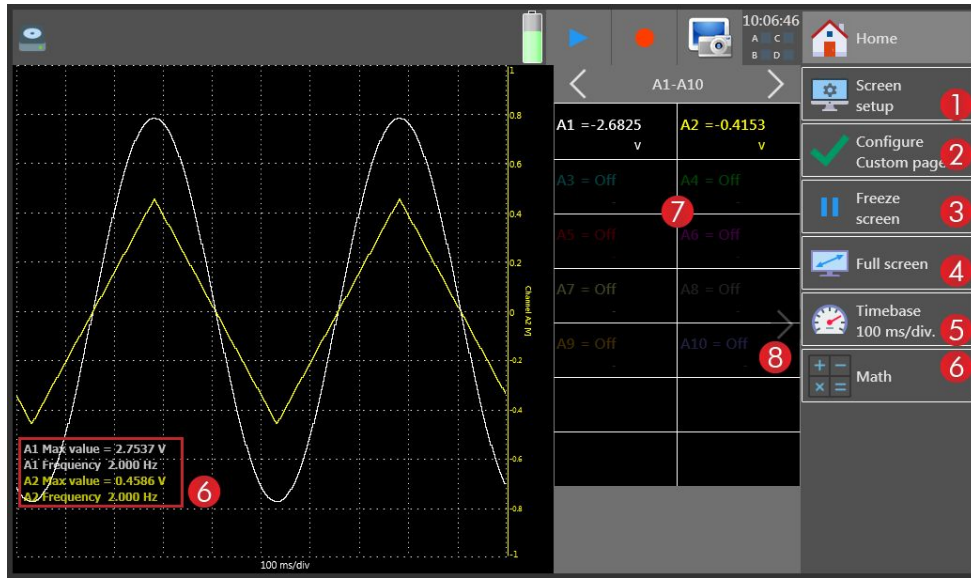


① Choice of the type of waiting

② Related settings

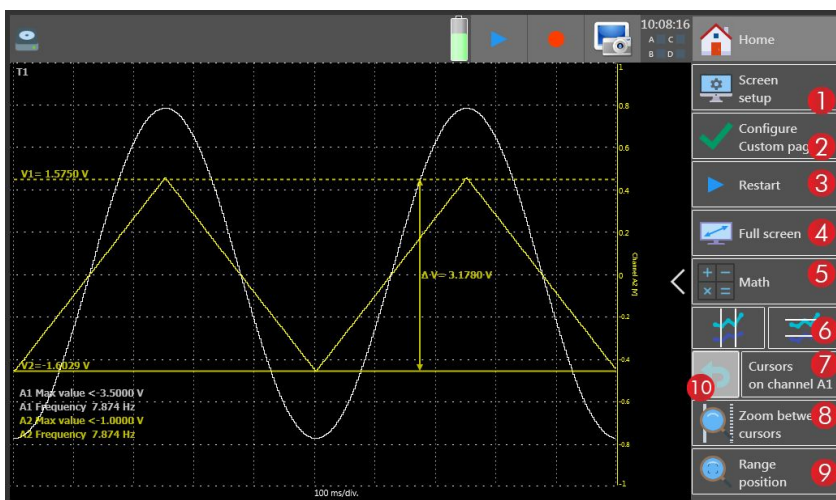
► F(t) display

This mode is used to observe any signals as a conventional oscilloscope.



- ① Setting of the display, colors, full screen, toggle between F(t) and XY mode
- ② Setting of the active channels
- ③ Pause the viewing, make pauses lets you use cursors
- ④ Automatic adjustment (autoset)
- ⑤ Setting of the time base
- ⑥ Setting of the measurements displayed on the bottom left
- ⑦ Digital display of signals values
- ⑧ Close the digital display window, which leaves more space for the oscillogram window

When the visualization is paused (button (3)), the interface is updated:



- ①②④ unchanged
- ③ Relaunch the acquisition
- ⑤ Enable time cursors
- ⑥ Enable horizontal and vertical cursors

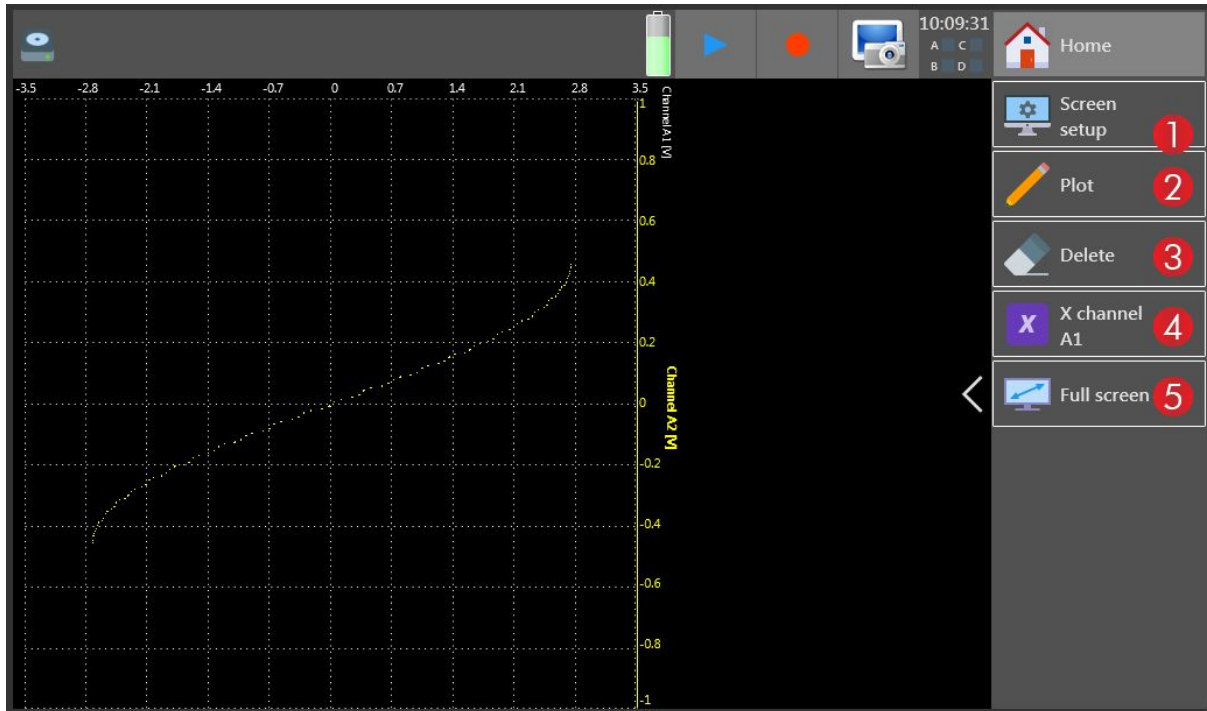
The vertical and horizontal cursors can't be activated simultaneously.

Only for horizontal cursors :

- ⑦ Choice of the channel measured by the sliders
- ⑧ Zoom in between the two cursors
- ⑨ Set the channel parameters
- ⑩ Return to the original view

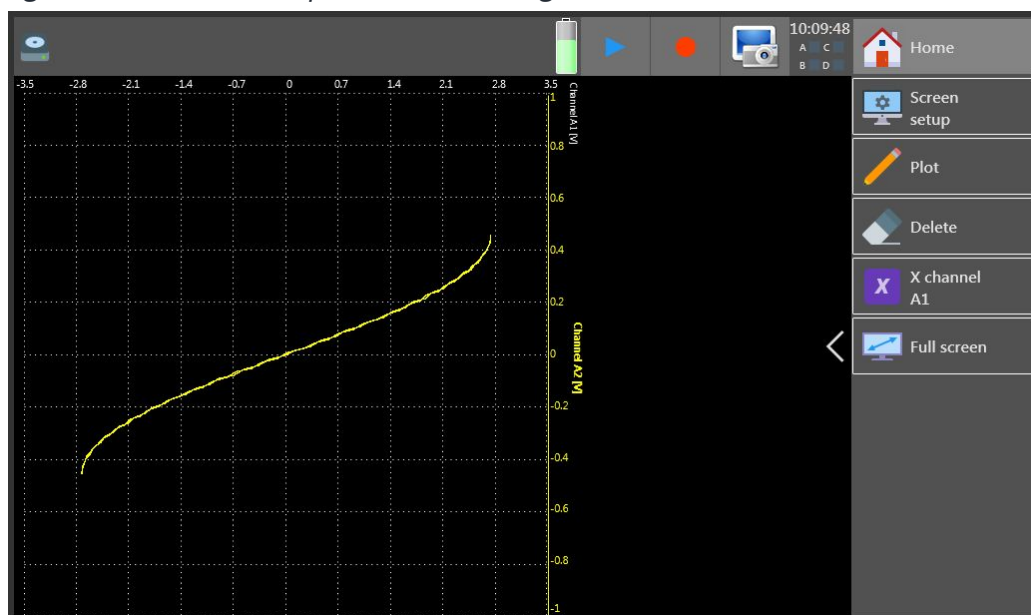
► XY display

XY mode draws a signal relative to another.



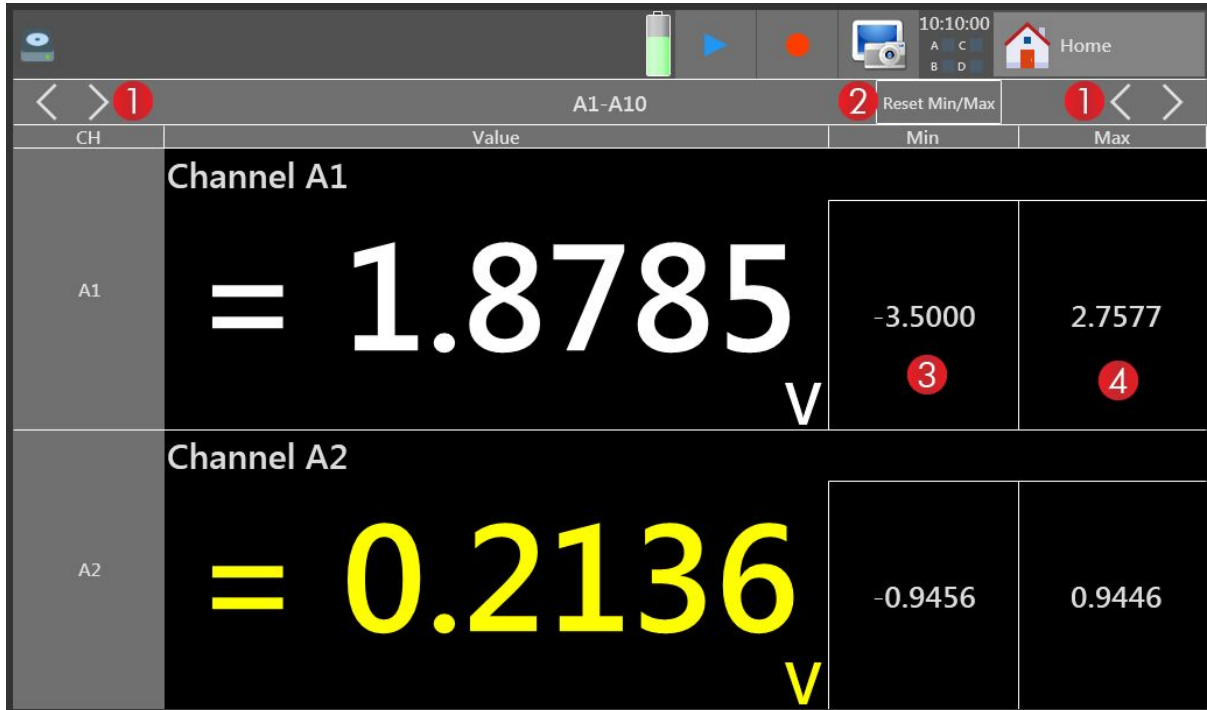
- 1 Setting of the display, colors, dot or vector display and toggle between F(t) and XY mode
- 2 Enabling points/vectors tracing
- 3 Clear points/vectors drawn
- 4 Selection of the track placed on the x-axis
- 5 Full screen mode

The image above shows a dot plot while the image below shows it in vectors.



► Digital display

This mode displays the measured values of the measured signals like a multimeter. The setting of each channels can be accessed by simply pressing the value corresponding to the channel.



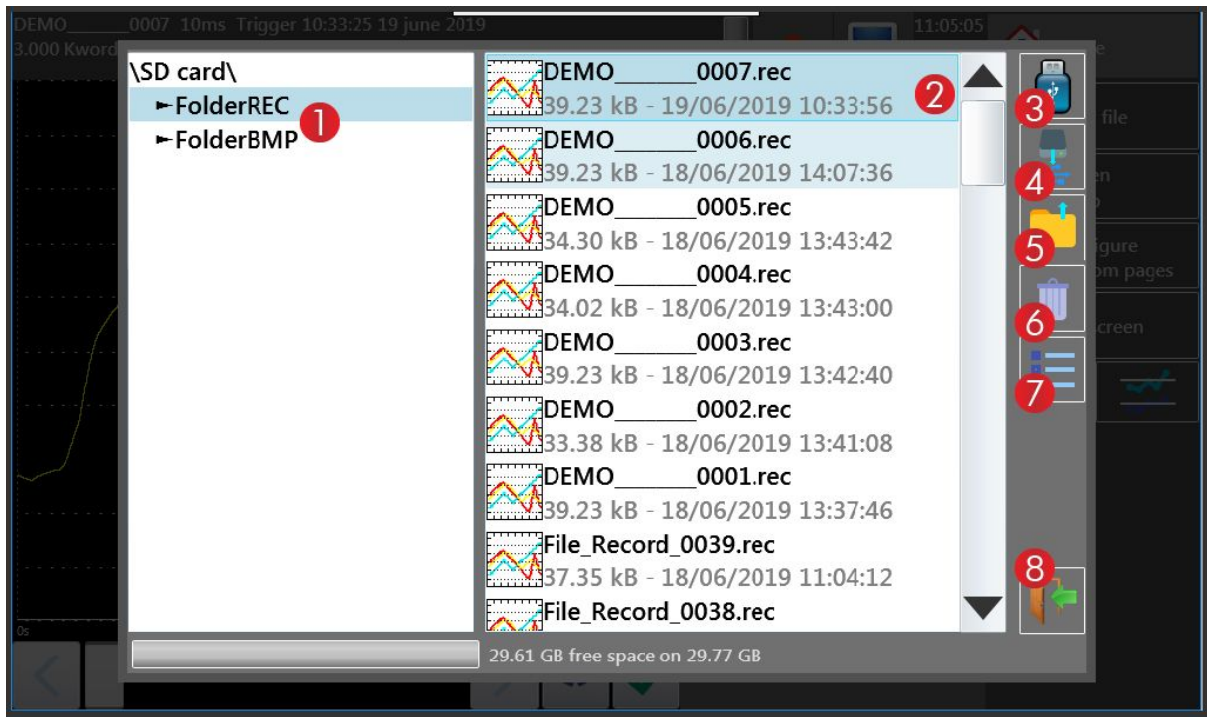
- ① Selecting groups of channels to display or logical functions
- ② Reset minimum and maximum values
- ③ Minimum value reached on this path
- ④ Maximum value reached on this path

▶ Recording reads and exports

Once the recordings are made, it is possible to directly read them on the Data Acquisition System. The handling is the same for any mode of operation. To do this, go to the main menu, click on "Replay memory" and then "Read file".

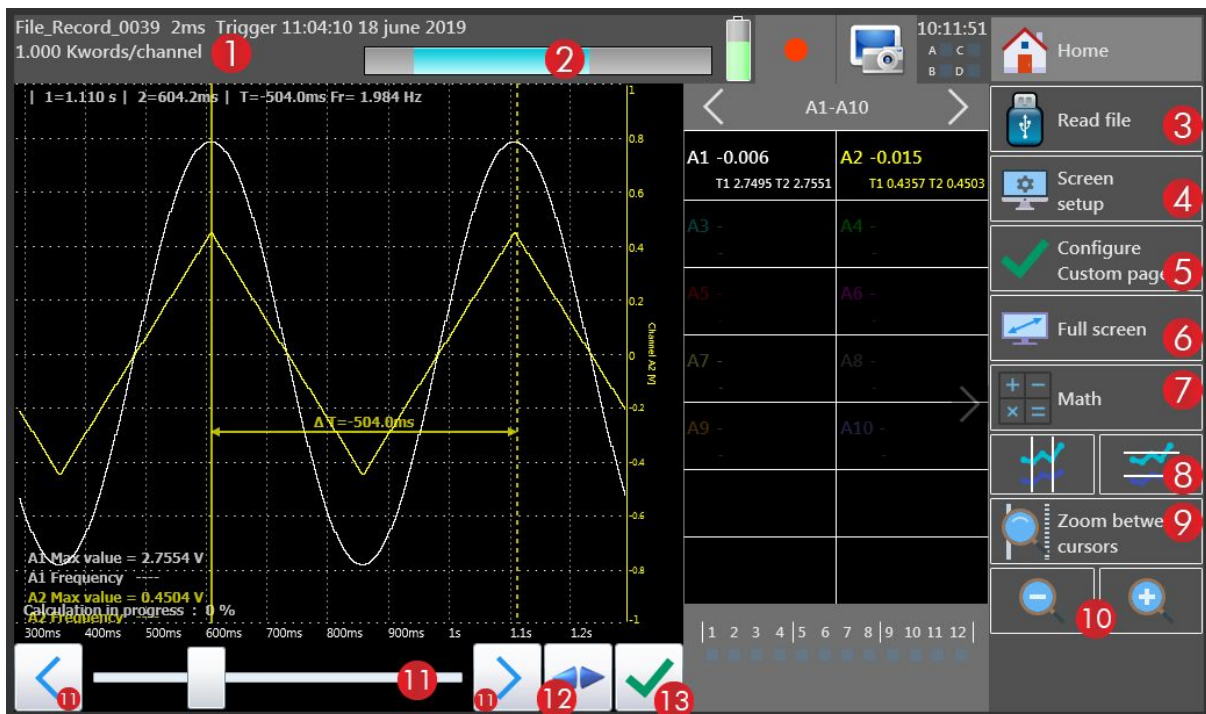


A list of recordings stored on the instrument is shown. The recordings are in .rec format, simply press the desired one to select it.



- ① Folder selection
- ② List of files in the selected folder
- ③ View the contents of the USB key, if connected to the device
- ④ Transfer the selected file to the USB key
- ⑤ Read the selected file
- ⑥ Delete the selected file
- ⑦ Switch between single or multiple selection mode
- ⑧ Exit

The interface for reading a file is as follows:



- 1 Informations about the recording
 - 2 Visible area (blue) relative to the total acquisition (gray area)
 - 3 Open the files list
 - 4 Configure the screen, colours, clock type, toggle between F (t) and XY mode, ...
 - 5 Enable or disable custom channels
 - 6 Full screen mode
 - 7 Adjustment of the measurements made and displayed at the bottom left of the waveform
 - 8 Show horizontal or vertical cursors
- Only for vertical sliders, zoom and zoom functions are only available when these sliders are displayed:
- 9 Zoom between sliders
 - 10 Zoom in and out
 - 11 Navigate in the recording
 - 12 Display the entire acquisition (automatically zoom out if necessary)
 - 13 Select the channels and the functions to display, in case of the recording includes several channels simultaneously

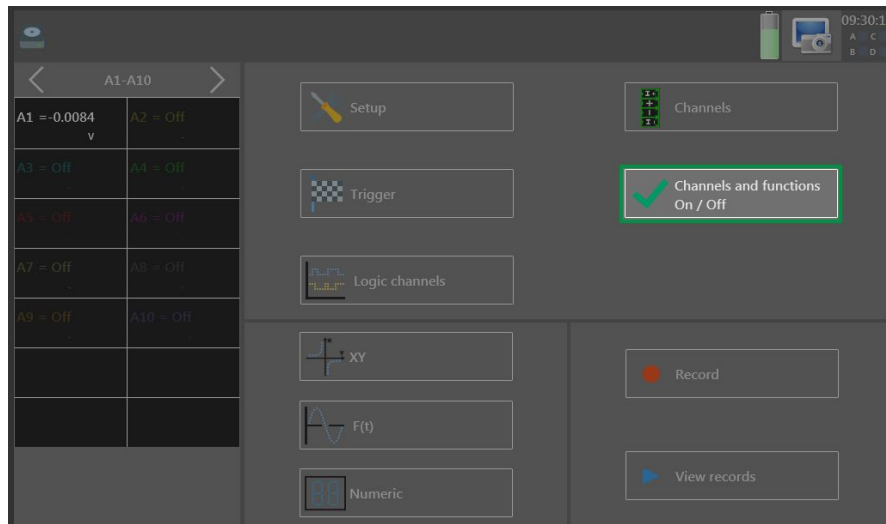
► Workshop

The device is in factory configuration, the goal is to measure and record a K type thermocouple.

To do this, you must follow the steps described at the beginning of the guide.

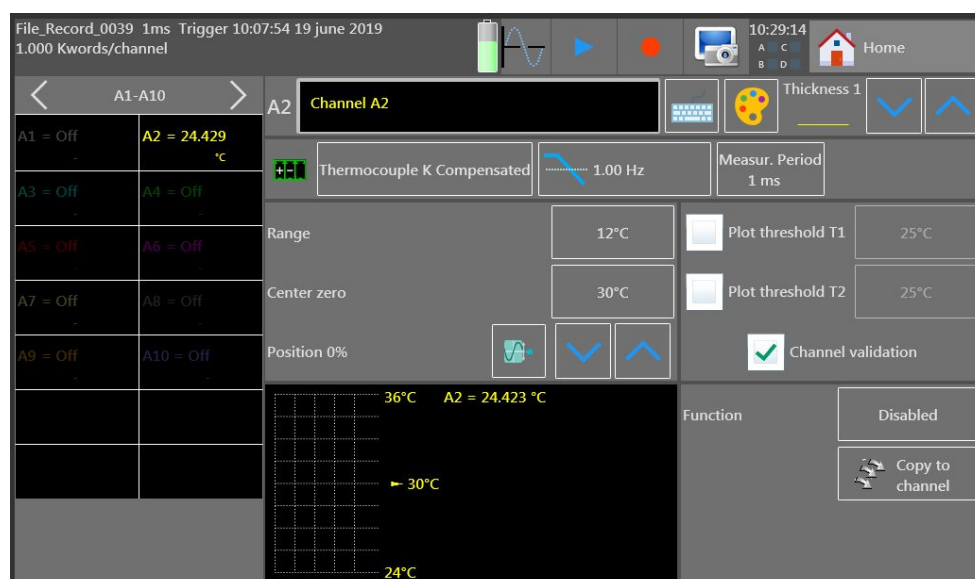
1/ Choice of channels

The signal is connected to the second channel of the Data Acquisition System, channel A1 is thus deactivated and channel A2 is activated.



2/ Channel configuration

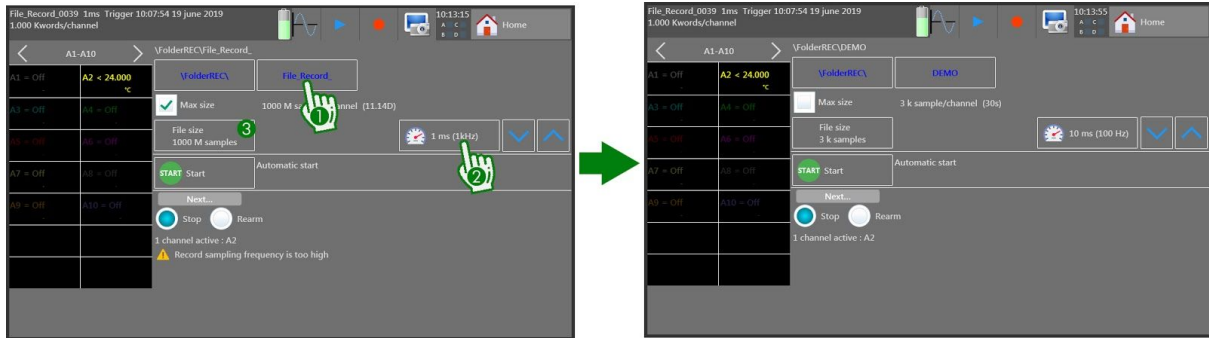
We want to measure a thermocouple, the A2 channel is adjusted accordingly. The gauge is set at 12°C and the zero at 30°C because the temperature fluctuates slightly around 30°C. In addition, it is recommended to apply a 1 Hz filter to eliminate the electromagnetic disturbances picked up by the thermocouple.



3/ Trigger configuration

First, we rename our file that will be generated after the recording. To do this click on "File_record_" (1), then on the keyboard icon and rename the file, in our case, "DEMO". The save location is not changed.

The sampling rate (2) is set to 100 Hz. It is desired to measure the thermocouple for 30 seconds. The maximum size (3) is therefore set to 3k samples because the acquisition realizes 100 samples per second ($100 \times 30 = 3000$).



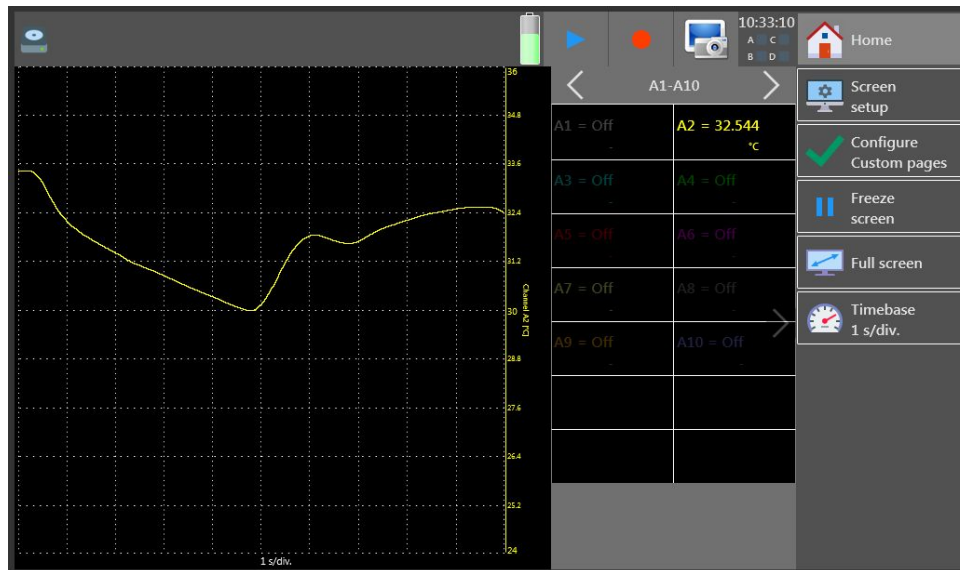
"Next..." is left on "stop" because no further recording will be done after our one.

Finally the trigger is set to "Start on channels" and set to start the acquisition when the temperature is above 25°C. The stop is left on automatic, the acquisition will stop after the 30 seconds configured on the previous page.



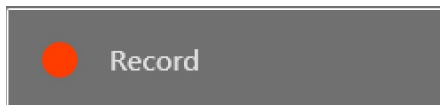
5/ Display configuration

This part consists of making the adjustments of the signal display screen. In the case of a thermocouple not varying the time size is not important, it is set to 1s/div.

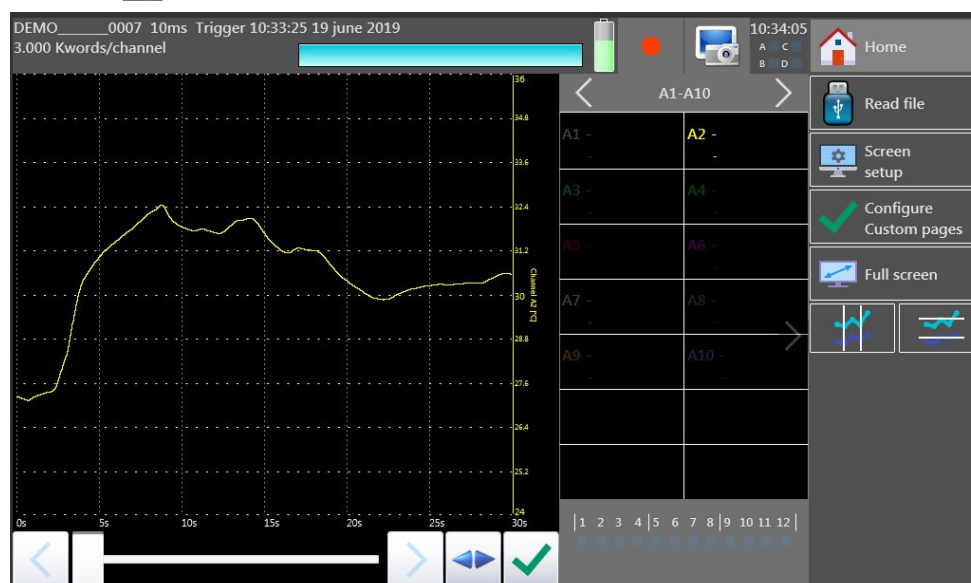


6/ Signal recording

To start the recording, press the "Record" button in the main menu.



The recording starts and stops automatically after 30 seconds. The result is immediately displayed. The acquisition is automatically saved to the location previously specified and named "DEMO" followed by a number that is incremented after each new record. In our case, it is "DEMO__0006.rec". This list is accessible via the "Read file" button.



Then the newly created file can be sent to a USB key (1) or opened on the data acquisition system (2) for viewing.

