



USER MANUAL

DATA ACQUISITION SYSTEM

AKIVISION-A CFR / AKIVISION-E CFR

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1.1 **Presentation of Akivision CFR**

The Akivision data acquisition system has been developed by Kimo and is dedicated to monitoring the proper functioning of air conditioning systems. It is suitable for every kind of process monitoring, including data recording, reading, and analysis. This CFR version has been designed to be compliant with 21 CFR part 11 of FDA regulations concerning electronics recording, combined with Kimo measurement devices.

Akivision CFR software relies on security functions of Windows® operating systems.

Akivision CFR software must be installed and configured by a system administrator having proper rights with the help of Windows® security parameters.

The original configuration of security parameters of the Akivision CFR software meets the requirements of 21 CFR part 11 regulations.

It is the responsibility of the company that has acquired the Akivision CFR software to give permission to the users corresponding to their software usage policies. In the case of violation of Kimo or 21 CFR Part 11 recommendations regarding access permissions on Akivision CFR software, Kimo can not be held liable for any consequences that will result.

21 CFR Part 11 regulations also require the planning of operational procedures including the coupling of two items, composed by the Akivision CFR software for the technical part and operational procedures for the procedural part.

Thus, companies that acquire Akivision CFR software should ensure their employee who develop, maintain and use electronic records and the electronic signature system have the suitable education levels, training and experience to perform their defined tasks.

Companies that acquire Akivision CFR software also need to keep measurement data according to the required timelines mandated in their jurisdiction.

As a consequence, the system must be taken into account as a whole in order to meet 21 CFR Part 11 requirements. Akivision CFR software is only a part of this system.

1.2 **Explanation about 21 CFR part 11 regulation**

What is the 21 CFR part 11 regulation?

Enacted by the FDA (Food & Drug Administration) in 1997, the 21 CFR Part 11 regulation allows the use of electronic technology. It is divided into two main sections:

- Electronic recordings
- Electronic signatures

The 21 CFR Part 11 regulation defines requirements of electronic folders and electronic signatures equivalent to paper folders and handwritten signatures. The regulation is applied to electronic folders which will be created, analysed, maintained, archived, retrieved, or transmitted in the field of the requirements linked to every folder described in the FDA regulation.

Who has to comply?

Companies that sell or want to launch one or several products within pharmaceutical sector in the USA must comply with this regulation.

What is required to comply?

Complying with 21 CFR Part 11 regulation requires procedural and technical conformities.

- Procedural conformities: these are the policies and Standard Operating Procedures (SOP) created by pharmaceutical companies that define how the conformity will be realized.
- Technical conformity: the technical conformity is obtained by using products delivered by the supplier.

1.3 Vocabulary

- **Electronic recordings:** combination of text, graphs, data, sounds, pictures or other information interpreted as a digital way which is created, analysed, managed, archived, stored or spread by a computer system.
- **Electronic signature:** compilation of digital data of every symbol or series of symbols executed, approved or authorized by a person as his legal equivalent of his handwritten signature.

2 USE OF DATA

Kimo can not be held responsible for the use of data recorded with Akivision CFR software.

Kimo can not be held responsible either in case of computer equipment malfunction (computer or server) in which Akivision CFR software is installed if the installation is made in an environment not supported by the Akivision CFR software. For example:

- in case of a system update
- in case of a modification of the operating system

If the software is used in other conditions than the ones described in the user manual, Kimo cannot be held responsible for the consequences. For example:

- minimum configuration needs to be respected
- software must be installed by a system administrator

The company that acquires Akivision CFR software should agree to provide Kimo with access and use to Akivision CFR software if they need additional services, support or installation assistance. This commitment involves the provision of logins and passwords that would be required to allow this on-site or remote assistance.

3 AKIVISION APPLICATION INSTALLATION

For the installation and minimum requirements, please see the prerequisite document "**LR/03/BE**".

At the end of the installation, a user account is created. User name and password are:

- user name: admin
- password: admin

See page 13 for the user management.

3.1 *Software launching*

To launch the application, it is necessary to connect the security key on the computer's USB connection.



Security key or dongle



- **Connect the security key only after the software installation.**
- **During the usage, the computer researches if the key is present every 5 minutes. If the key is not detected, it is no longer possible to make actions on the application.**

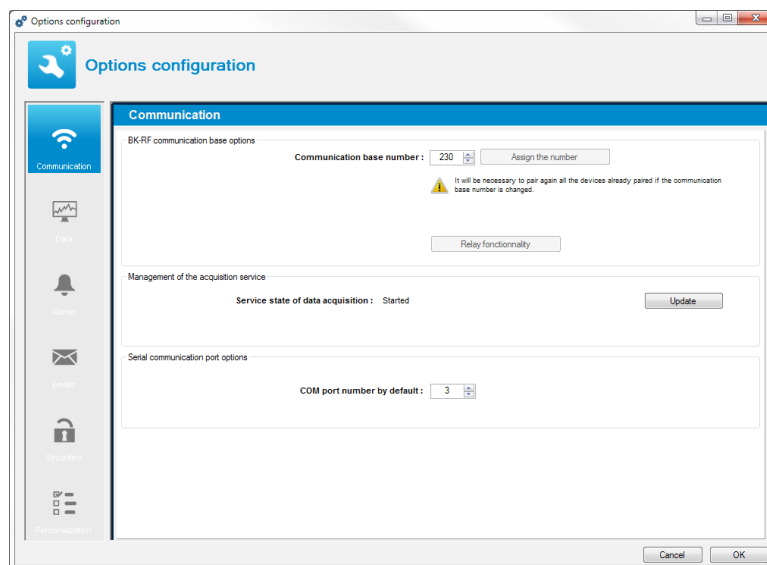
4 SETUP THE APPLICATION

It is possible to adjust several general parameters of the application. It is recommended to adjust them before the first usage. These adjustments concern:

- The communication of a BK-RF base
- The data export
- The emails
- The users management
- Customizing of the application

To access to these adjustments:

- Click **"Options"** on the application main screen.
The application requests the user to log in.
- Enter the following login: **"admin"** then the following password: **"admin"**. See chapter 4.5 for the creation and management of users logins and passwords.
The following window opens.



4.1 Manage the wireless communication (BK-RF base)

This part allows to attribute a number to the communication base and to start or stop the data acquisition service.

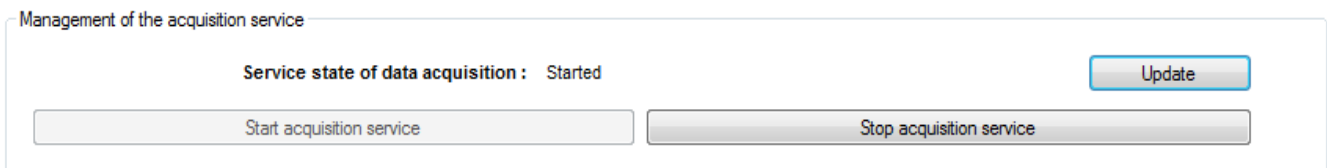
4.1.1 Attribute a number

- Select a number between 230 and 239 then press **"Attribute the number"**.



If the communication base number is modified, it will be necessary to pair again all the devices already paired.

4.1.2 Manage the data acquisition service of the wireless datalogger



This part concern the program which allows to recover the datalogger data and is useful only in case of software dysfunction.

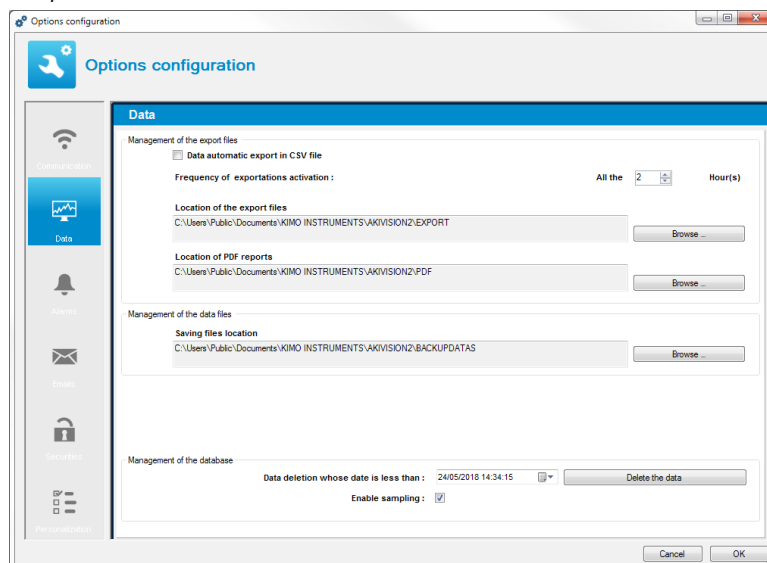
The state of data acquisition service must always be in mode **"Started"**.

- Click **OK** at the bottom of the options window to validate the modifications.

4.2 Manage the data

This part allows to adjust the export parameters of the data files and delete the saved data.

- Click **"Data"** at the left of the options window.
The following window opens.



4.2.1 Adjust the export parameters of the data files

In **"Management of the export files"**:

- Tick the box **"Automatic export of data in CSV files"** to automatically export the data in CSV format, readable by spreadsheet software such as Excel.
- Select the triggering frequency of exports between 2 hours and 24 hours.
- Select the file in which the export files will be saved: click **"Browse"**, then select the desired file.
- Select the file in which the PDF reports will be saved: click **"Browse"**, then select the desired file.

4.2.2 Delete the saved data

In **"Data base management"** part:

- Define the date and hour from which the data will be deleted.

It is also possible to delete the data by clicking on **"Delete the data"**.



The data will be definitively deleted.

- Click **OK** at the bottom of the options window to validate the modification.

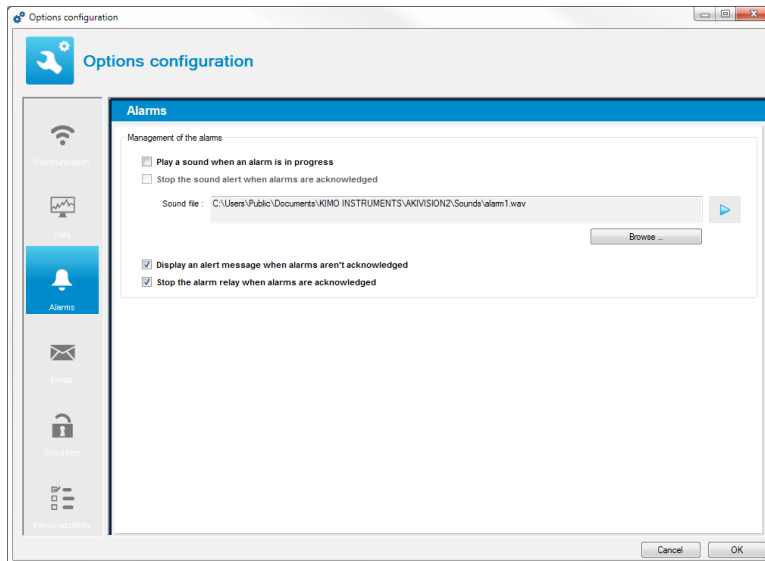
4.2.3 Activate the data sampling

This function allows to optimise the software performances if the data number or the acquisition frequency is very important. Therefore, the sampling allows to keep a defined number of values.

- To activate this function, tick the **"Activate sampling"** box.

4.3 Manage the alarms

- Click **"Alarms"** at the left of the options window.
The following window opens.



- Tick the box **"Play a sound when alarm is in progress"** to be prevented when an alarm is triggered.
If this last box is ticked:
- Tick the box **"Stop the sound alarm when the alarms are acknowledged"** to stop the alarm when the user triggers the alarm.

It is possible to select the sound that will be played when an alarm is in progress:

- Click **"Browse"** then select the desired sound. This sound file must be in .wav format.

It is also possible to display a message in case of unacknowledged alarm:

- Tick the box **"Display a message when alarms are not acknowledged"**.
- Click **OK** at the bottom of the options window to validate the modifications.

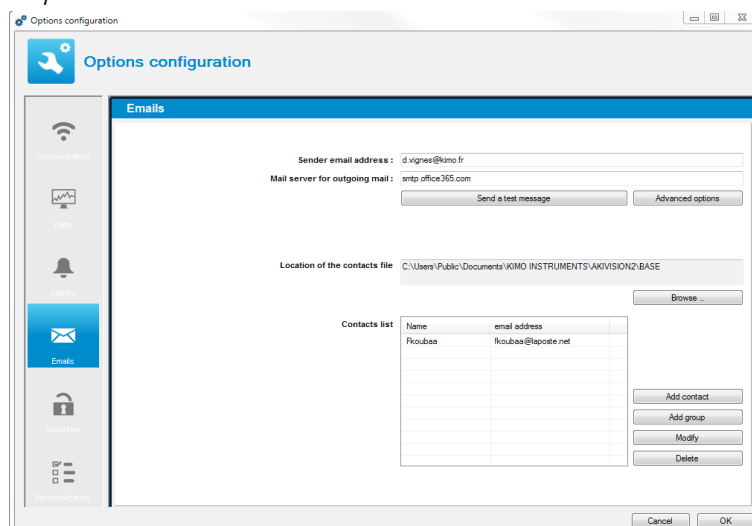
4.4 Manage the emails

4.4.1 Configure the emails

This part allows to configure the emails sending parameters at the contacts saved in the application.

The emails concern the follow-up of an acquisition, it is thus possible to automatically send email when the acquisition starts and stops and to send an email at regular interval during an acquisition.

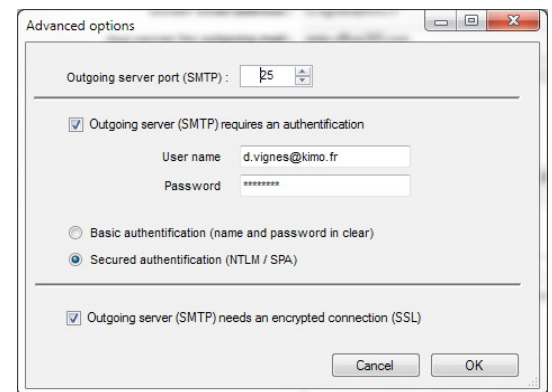
- Click **"Emails"** at the left of the options window.
The following window opens.



- In the field **"Sender email address"**, enter the email address used to send messages.
- In the field **"Email server for outgoing mail"**, enter the name of the SMTP server used to send messages.
- Click **"Send a test message"** to test the email configuration by sending an email entered in the displayed dialog box.

Configure the options of the SMTP outgoing server:

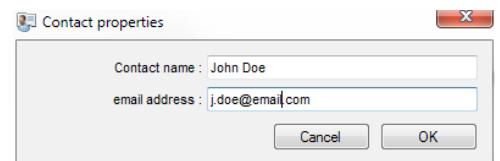
- Click **"Advanced options"**.
The window opposite opens.
- Carry out the necessary adjustments according to the characteristics of the SMTP server.
- Click **OK** to validate.



4.4.2 Manage the contacts

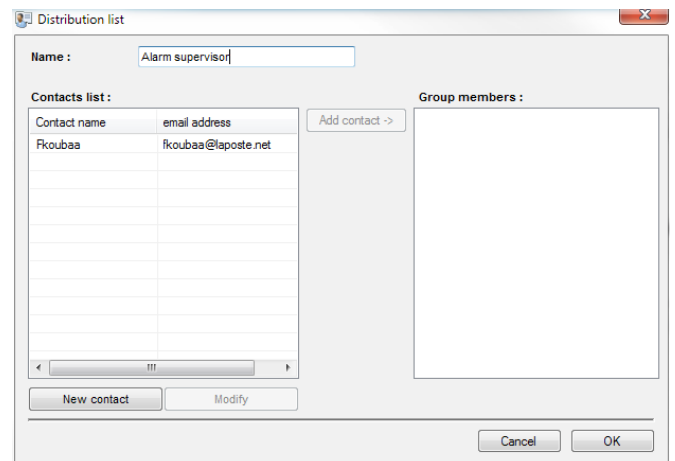
Add a contact:

- Click **"Add a contact"**.
- Enter the contact name and his email address.
- Click **OK** to validate.



Create a contact group:

- Click **"Add group"**.
- Enter a name for the contact group.
- Click a name in the contact list then **"Add contact"**.
or
- Edit a new contact by clicking **"New contact"**.



It is also possible to import an already existing contact list:

- Click **"Browse"** to select the file in which is located the contact file.

Modify a contact:

- Select a contact in the contact list.
- Click **"Modify"**.
- Carry out the modifications.

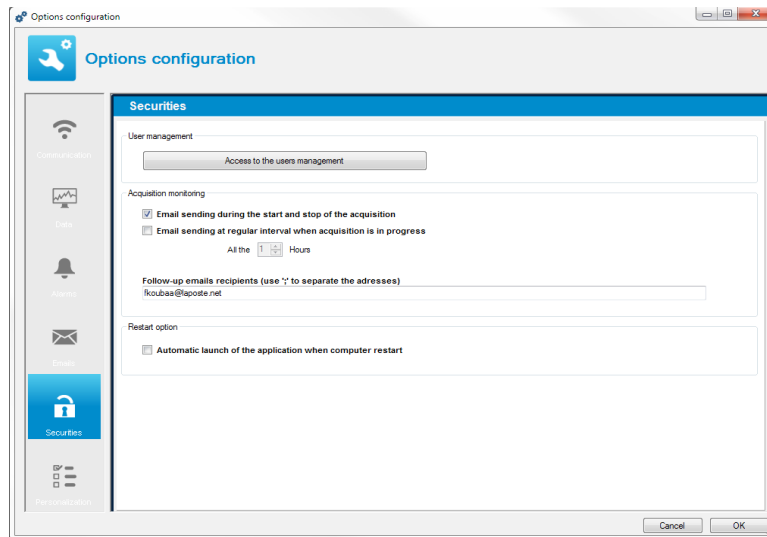
Delete a contact:

- Select a contact in the contact list.
- Click **"Delete"**.
- Click **Yes** to confirm the deletion.

4.5 Manage the security application

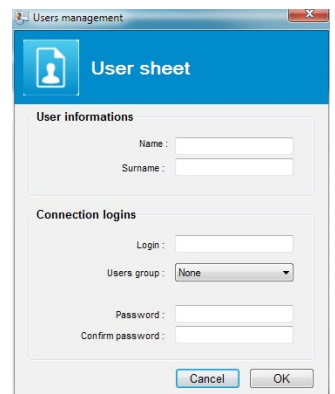
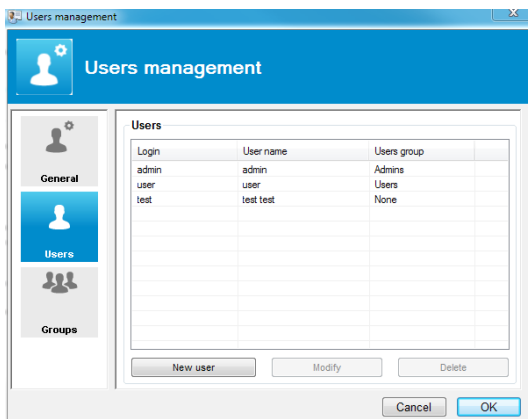
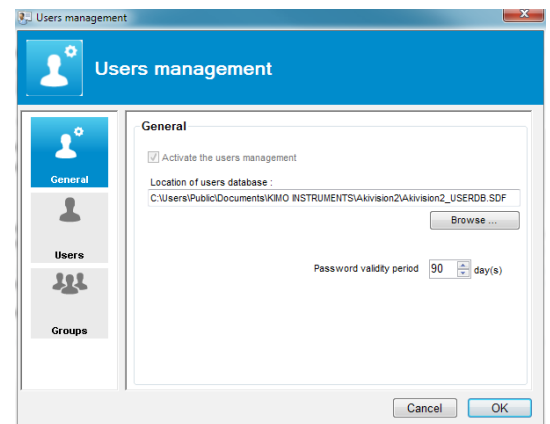
This part allows to manage the users and the follow-up of the acquisitions. It also allows to activate or not the restart of the application during a computer restart.

- Click **"Security"** at the left of the options window.
The following window opens.



4.5.1 Manage the users

- Click **"Access to the users management"**.
The window opposite opens.
- Tick the box **"Activate the users management"**.
- Click **"Browse"** to modify if necessary the location of the users database.
- Then click **"Users"** at the left of the window.
The following window opens.



- Click **"New user"**.
The window opposite opens.
- Enter the user name and first name in **"User information"**.
- Attribute a group to the user (see chapter 4.5.2 for groups creation).
- Create the user connection logins: enter a login in the field **"Login"** and a password in the field **"Password"** then confirm the password in the field **"Confirm the password"**.

 The password must be at least 6 characters long.

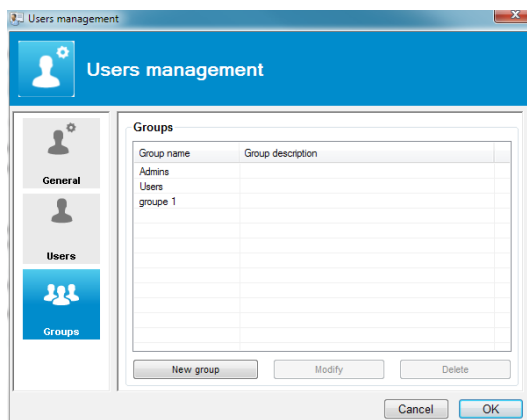
- Click **OK** to validate the user creation.

 **At the first connection, the user should change his password. The new password must be different from the old one.**

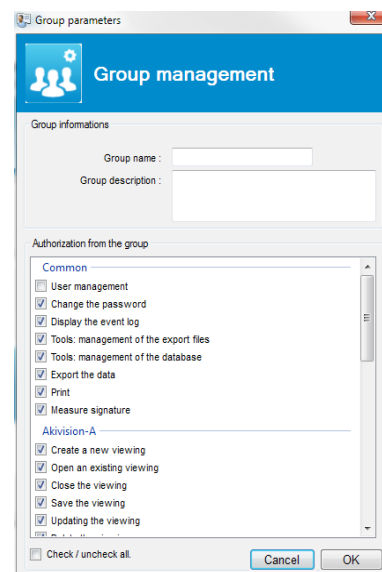
 **The session will expire if it is not used for 10 minutes.**

4.5.2 Manage the users groups

- Click **"Group"** on the window **"Users management"**.
The following window opens.



- Click **"New group"**.
The opposite window opens.
- Attribute a name to the group in the field **"Group name"**, then a description of the group in the field **"Group description"**.
- Attribute the different authorisations that the group will have by ticking the desired boxes.
- Click **OK** to validate the users group creation.



There are three types of authorisations:

- **"Common"**: concerns the usage of the Akivision-A and Akivision-E software.
- **"Akvision-A"**: only concerns the Akivision-A software.
- **"Akvision-E"**: only concerns the Akivision-E software.

Authorisations list:

Common	Akvision-A CFR	
Users management	Create a new viewing	Force wireless data logger unload
Change password	Open an existing viewing	Calculated channels management
Display the events report	Close a viewing	Alarms management
Tools: Export files management	Save the viewing	Alarm(s) report
Tools: Data base management	Updating viewing	Display/mask the alarms messages
Export the data	Delete viewing	Alarms acknowledgement
Print	Device addition	Tools: Stop/Start service
Measure signature	Device deletion	Tools: Graphic properties
Akivison-E CFR	Devices configuration	Addition of comments notes
Create a new viewing	Change the communication parameters	Modify the graphic parameters
Open an existing viewing	Change base number of wireless datalogger	Modify the synoptic in creation mode
Close the viewing	Place wireless datalogger	
Delete viewing	Stop the acquisition service	
Addition of comments	Interrupt the acquisition service	

4.5.3 Modification and deletion of users and users group

To modify a users group:

- Select the group to modify by clicking on it.
- Click **"Modify"**.
- Carry out the modifications by ticking or unticking the desired authorisations.
- Click **OK** to validate the modifications.

To modify a user:

- Select the user to modify by clicking on it.
- Click **"Modify"**.
- Carry out the desired modifications.
- Click **OK** to validate the modifications.

To delete a users group:

- Select the group to modify by clicking on it.
- Click **"Delete"**.
- Click **OK** to validate the deletion.

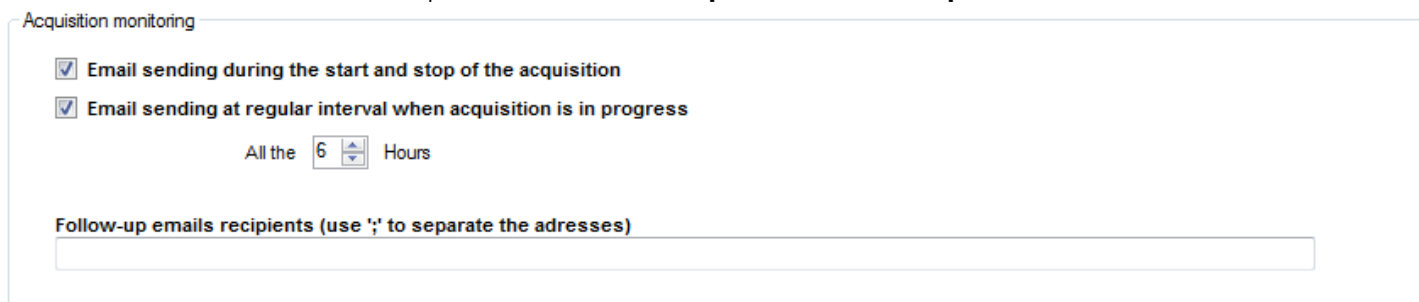
To delete a user:

- Select the user to delete by clicking on it.
- Click **"Delete"**.
- Click **OK** to validate the deletion.

4.5.4 Follow the acquisition

It is possible to follow the acquisition in progress thanks to the sending of follow-up emails.

- Tick the box **"Sending an email during the start and the stop of the acquisition"**.
When this case is ticked, it is then possible to send an email at regular interval during the acquisition.
- Tick the box **"Sending an email at regular interval when acquisition is in progress"**.
- Define the interval in hours.
- Then indicate the emails recipients in the field **"Recipients of follow-up emails"**.



Acquisition monitoring

☒ Email sending during the start and stop of the acquisition

☒ Email sending at regular interval when acquisition is in progress

All the Hours

Follow-up emails recipients (use ';' to separate the addresses)

4.5.5 Restart the application

It is possible to restart automatically the application after a reboot:

- Tick the box **"Automatic launch of the application during a computer restart"**.



Restart option

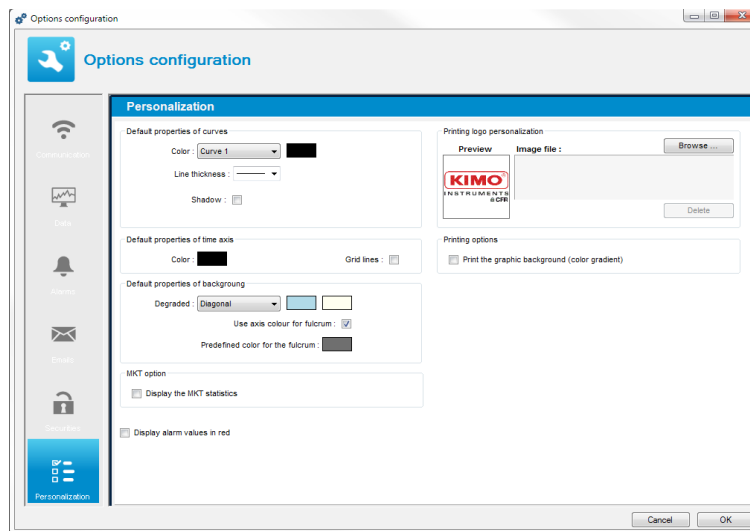
☒ Automatic launch of the application when computer restart

- Click **OK** at the bottom of the options window to validate the modifications.

4.6 Personalize the application

This part allows to personalize the curves, the axis time, the background, the logo appearing on the printings and to display or not the MKT statistics.

- Click **"Personalization"** at the left of the options window.
The following window opens.



In **"Default properties of curves"** part:

- Click colour square then select the desired colour.
Validate with **OK**.
- Select the lines thickness.
- Tick the bow **"Shadow"** to make appear the curves shadow.



In **"Default properties of the time axis"** part:

- Click the colour square then select the desired colour.
Validate with **OK**.
- Tick the box **"Grid lines"** to make appear the grid lines.



In **"Default properties of the background"** part:

- Select the type of colour graduation: diagonal, horizontal or vertical.
- Click the two squares colour then select the desired colours. Validate with **OK**.
- Tick the box **"Use the axis colour for the grid lines"** if necessary.
- Click the colour square to define a grid lines colour.

In **"MKT"** part:

- Tick the box **"Display the MKT statistics"** to display the MKT temperature. This temperature allows to express in a simplified way the global effect of the temperature variations during the storage or the transport of the perishable goods.

In **"Personalization of printings logo"** part:

- Click **"Browse"** and select the logo which will appear on the printings.
- Click the image file then **"Delete"** to delete it.

In **"Printing options"** part:

- Tick the box to print the graphic background.

AKIVISION CFR meets the requirements of CFR21 standard. This standard is for users who want to control and secure their data acquisition system, its main functions being attributed by rights from groups management.

5.1 Activate the signatures

To activate the signature management:

- Go to the user group management (see page 14 to create groups).
- Tick the box **"Measure signature"** in **"Common"** part of the authorization of the group.
- Close all the windows of the groups management.

5.2 Sign measurements

- Click **"Tools"** in the menu bar then **"Sign measure"**.

The following window opens:

- Enter the date of the beginning and the date of the end of the required period concerned by the signatures.
- Click **"Validate"** button.
The list of the possible period displays.
- Click the period(s) to sign.
- Click **"Sign"** button.
A message opens asking to confirm the action.
- Click **OK**.
- Enter a user name and the corresponding password then click **OK**.
The following window opens.

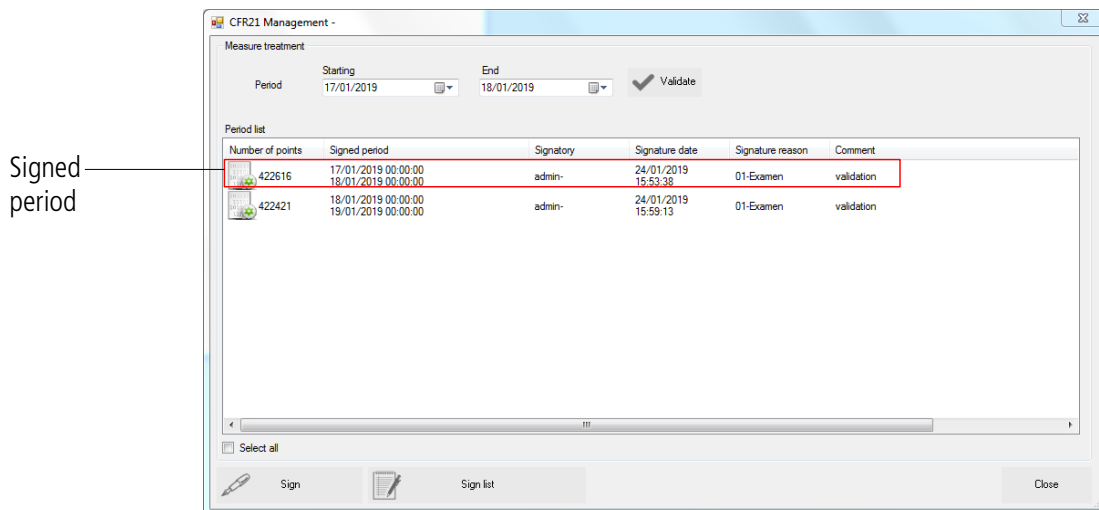
- Select a reason then enter a comment.



The comment is compulsory.

- Click **OK**.

The list of period is displayed with the signed period.



5.3 Get to signed measurements

To get to signed measurements:

From the **"List of period"** window:

- Click the button **"List of signatures"**.



The list of signed measurements is about the period previously defined at the moment of the measurements signature step.

6 ADJUST THE DEVICE COMMUNICATION PARAMETERS



For the adjustment of the communication parameters, none of acquisition must be in progress.

This part allows to adjust the communication parameters of his own devices to add in a network (for example in an already existing network).

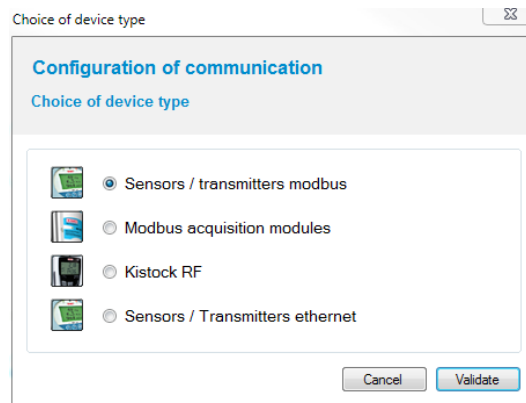
6.1 Adjust the communication parameters in modbus

This part allows to setup the sensors/transmitters communication in modbus.

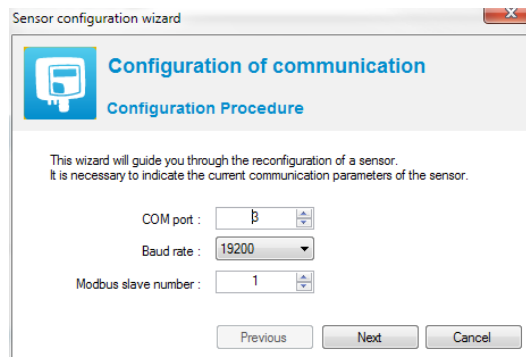


The user must be connected and have the necessary rights to modify these parameters.

- Click **"Tools"** then **"Communication parameters"**.
The following window opens.

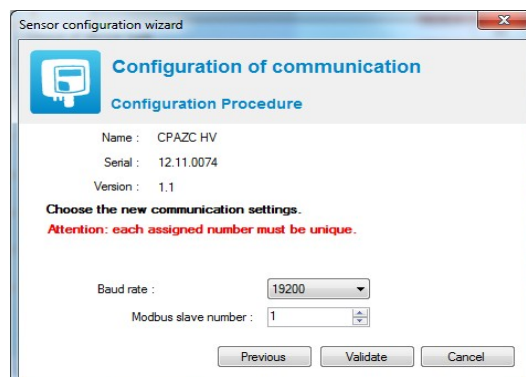


- Click the **"Sensors / Modbus transmitters"** chip then click **OK**.
The following window opens.



- Select the actual COM port on which the sensor/transmitter is connected.
- Adjust the actual communication velocity: 2400, 4800, 9600, 19 200, 38 400 or 115200 bits per second.
- Enter the actual modbus slave number.
- Click **"Next"**.

The following window opens.



- Carry out the desired modifications on the communication velocity and the modbus slave number.
- Click **"Validate"**.
A message displays indicating that the configuration has been successfully carried out.

6.2 Adjust the communication parameters of a wireless datalogger

The configuration window of the communication parameters is open.

- Click the chip **"Kistock RF"** then click **OK**.
The setup wizard window of a wireless data logger opens.
- Click **"Next"**.
A window opens indicating the data logger name, its serial number, its firmware versions and its wireless.
- Select a wireless new number for the data logger.
- Click **"Validate"**.
A message displays indicating that the configuration has been successfully carried out.

6.3 Adjust the Ethernet communication parameters

The configuration window of the communication parameters is open.

- Click the **"Ethernet sensors/transmitters"** chip then click **OK**.
The following window opens.



- Enter the sensor/transmitters IP address on which you want to connect.
- Click **"Next"**.
- Carry out the desired modifications:
 - Modbus slave n°
 - IP address
 - Subnet mask
 - Gateway
- Click **"Validate"**.
A message displays indicating that the configuration has been successfully carried out.

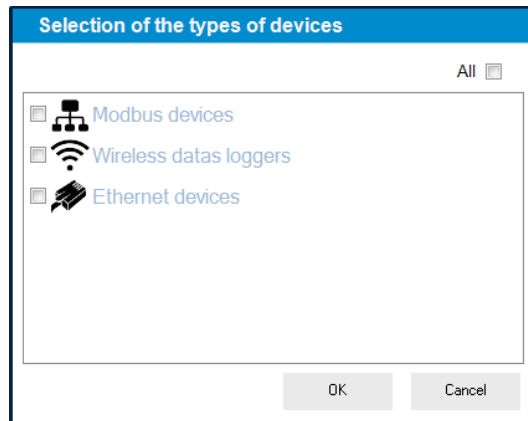
7 CREATE A NEW VIEWING



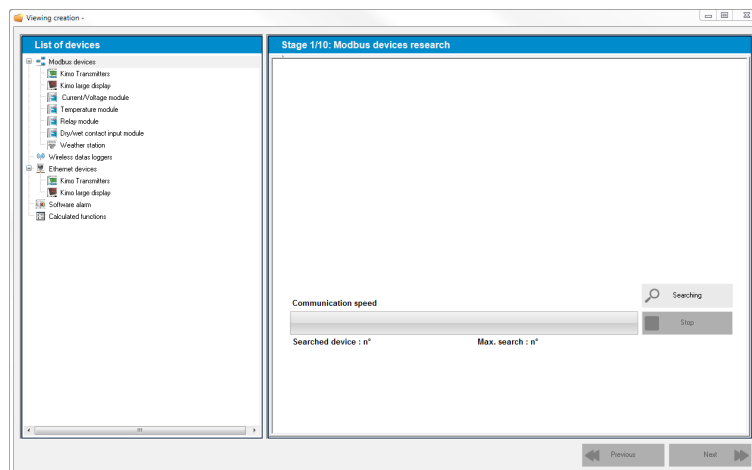
The user must be connected and have the necessary rights to modify the parameters.

The application is open and none of acquisition is in progress.

- Click **"Create"** or go in the menu **"File"** then click **"Create a new viewing"**.
The following window opens.



- Tick the devices which must be considered for the acquisition then click **OK**.
The following window opens.

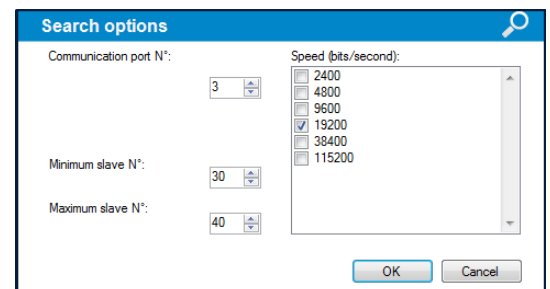


If all the boxes have been ticked, the first step consists in researching the modbus devices connected to the computer, then the wireless data logger and finally the Ethernet devices. If, for example, any device is connected in modbus, the application directly passes to the wireless data logger research.

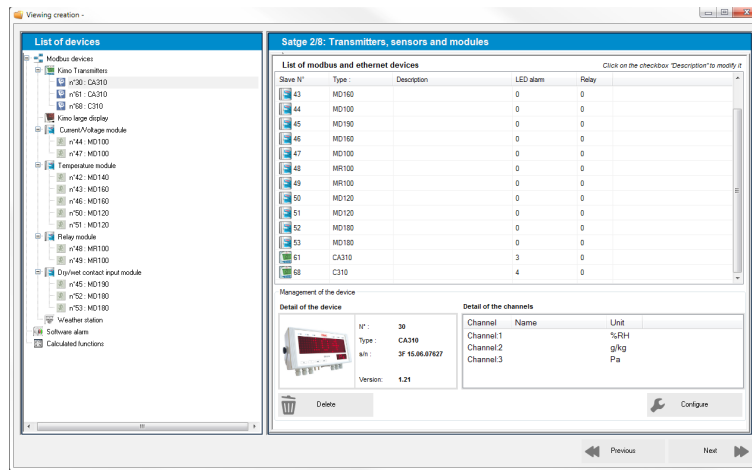
7.1 Integrate the sensors/transmitters and modules connected in modbus

The modbus devices have been properly ticked.

- Click **"Searching"**.
The window of search options opens (see opposite).
- Select the communication number port, the minimum and maximum slaves numbers.
- Select the communication velocity in bits per second.
- Click **OK** to validate.



When the research is ended, the list of found devices displays:



It is possible to give a name to a device:

- Click **"Designation"** line.
- Enter a name then press **Enter**.

Then, it is possible to configure the sensor/transmitter and a module.

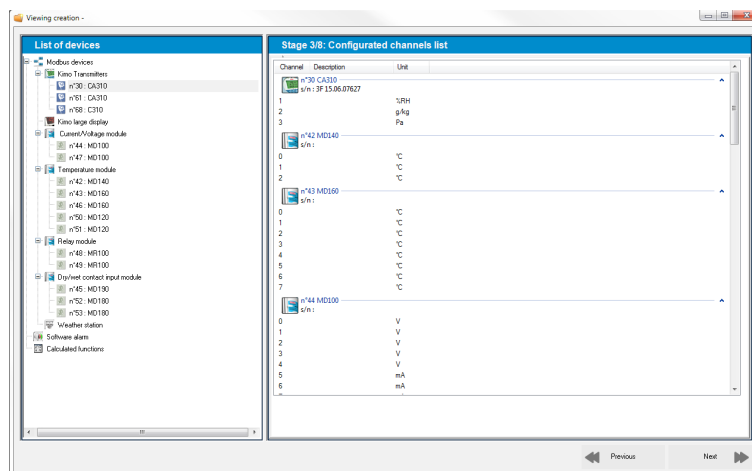
- Click **"Configure"**.

See page 38 for the sensors/transmitters configuration.

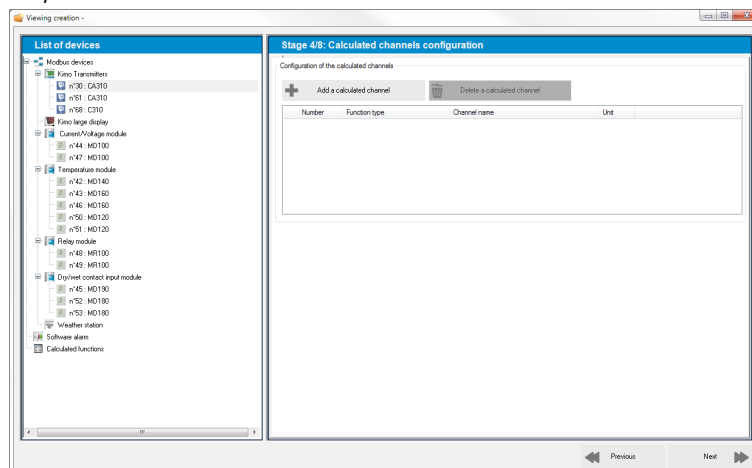
See page 48 for the modules configuration.

7.1.1 Configured channel list

- When the devices have been configured, click **"Next"**.
The following window opens. This window lists the configured channels:



- Click **"Next"**.
The following window opens.



This window allows to configure the calculated channels.

- Click **"Add a calculated channel"**.
 - Select the concerned device by the calculated channels then click **OK**.
- The following window opens.

It is possible to create two types of calculation functions:

- Personalized function.
- Predefined calculation function (absolute humidity, dew point, wet temperature, enthalpy and analogue conversion).

Some predefined functions can be blocked if the required channels for their calculations are not available.

The calculated channels can not be used in the calculation of others channels.

 The calculation functions of the calculated and saved channels with AKIVISION-A can not be modified in AKIVISION-E.

The values of calculated channels can not be sent on the ATT-ATE displays in digital mode.

Only the channels of the displays ATT-ATE in analogue mode will be used in the channel calculation.

A – The operations

Procedure:

- Create the formula. Double click the concerned channel(s) and double click the operator (see below the operators table).
Ex : #001 - #008.
- Verify the syntax. If the syntax is correct go on to the next step; if not, correct the formula.
- Determine the channel properties (name, unit, decimals).
- Click **OK** to validate.

Operators table:

+ , - , * , /	Addition, subtraction, multiplication and division.
%	Modulo (rest of whole division). Example: 13 % 3 = 1

B – The mathematics functions

Procedure:

- Create the formula. Double click the mathematics function (see below the mathematics functions table) then double click the concerned channel(s) or insert the appropriate number.
- Verify the syntax. If the syntax is correct go on to the next step; if not, correct the formula.
- Determine the channels properties (Name, unit, decimals).
- Click **OK** to validate.

abs (<expr>)	Gives the absolute value of the expression. ABSV(<i>NameChannel1</i>) gives the channel value <i>NameChannel1</i> if it is positive, if not the opposite of its value. ABS(V(<i>NameChannel1</i>)*10.3+V(<i>NameChannel2</i>)) evaluates the expression V(<i>NameChannel1</i>)*10.3+V(<i>NameChannel2</i>) and gives the absolute value.
acos (<expr>)	Cosine arc of expression in radians acos (0) gives 1.5708 acos (-1) gives 3.1416
Asin (<expr>)	Sine arc of expression in radians asin (1) gives 1.5708 asin (0) gives 3.1416
Atan (<expr>)	Tangent arc of expression in radians atan (1) gives 0.7854 atan (0) gives 0
Ceiling (<expr>)	Integer higher or equal to the expression CEIL (2.9) gives 3 CEIL (-2.9) gives -2
Cosinus (<expr>)	Cosine of the expression in radians cos (1.5708) gives 0 cos (3.1416) gives -1
Exp (<expr>)	Exponential of the expression
Floor (<expr>)	Integer lower or equal to the expression Floor (2.9) gives 2 Floor (-2.9) gives -3
Ln (<expr>)	Napierian logarithm of the expression (The expression must be positive)
Log10 (<expr>)	Common logarithm of the expression Log 100 gives 2. Log(V(<i>NameChannel1</i>)*10.3+V(<i>NameChannel2</i>)) evaluates the expression V(<i>NameChannel1</i>)*10.3+V(<i>NameChannel2</i>) and gives the common logarithm. The expression must be positive.
Pow (<expr> ; <pw>)	Elevation to a power: <expr> elevated to a power <pw>. Ex: pow (5;3) = 125
Round (<expr>)	Rounded the operator value to a nearest integer. Round (2.4) gives 2 Round (2.6) gives 3
Sin (<expr>)	Sine of the expression en radians Sin (1.5708) gives 1 Sin (3.1416) gives 0
Sqrt (<expr>)	Square root of the expression
Tangent (<expr>)	Tangent of the expression in radians Tan (0.7854) gives 1 Tan (3.1416) gives 0

C – The predefined functions

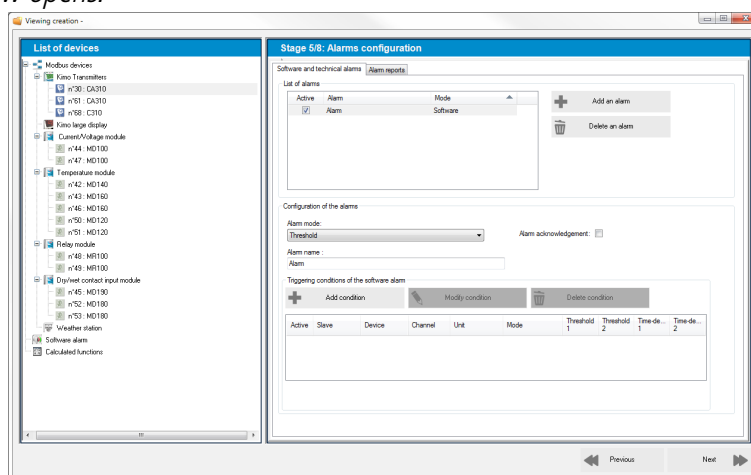
Procedure:

- Tick the **"Use a predefined calculation function"** box.
- Select the function (see table below for details).
- Select the channels corresponding to the parameters implicated in calculation.
- Determine the channel properties (name and decimals, units are automatically selected).
- Click **OK** to validate.

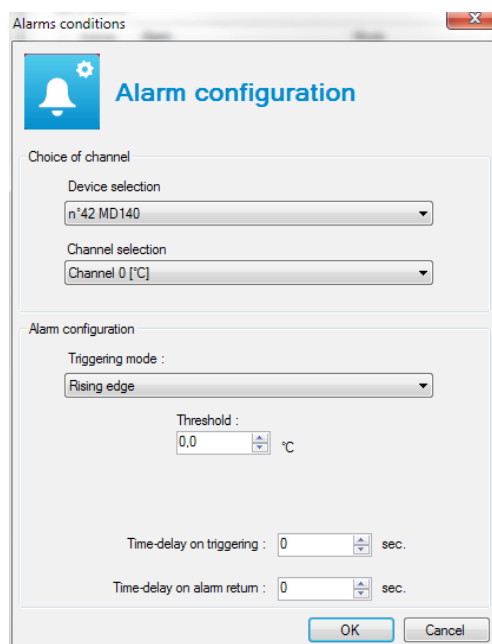
Absolute humidity	The amount of water vapor present in a unit volume of air, usually expressed in kilograms per cubic meter. g/Kg.
Dew point	The temperature to which a given air parcel must be cooled at constant pressure and constant water vapor content in order for saturation to occur. °C td.
Wet temperature	Temperature calculated with dry temperature and relative humidity in the air. °C tw.
Enthalpy	This is the heat change which occurs when 1 mol of a substance reacts completely with oxygen to form products at 298 K and 1 atm. Kj/Kg.

7.1.2 Configure the alarms

- Click **"Next"** on the **"Calculated channels configuration"** window.
The "Alarms configuration" window opens.
- Click **"Add an alarm"**.
The following window opens.



- Click **"Add a condition"** to configure the alarm.
The following window opens.



In **"Channel choice"** part:

- Select the device concerned by the alarm in the list.
- Select the channel.

In **"Alarm configuration"** part:

- Select the triggering mode of the alarm between:
 - Rising edge
 - Falling edge
 - Hysteresis rising edge
 - Hysteresis falling edge
 - Threshold
- Enter an alarm threshold for the **"Rising edge"** or **"Falling edge"** modes.
- Enter in addition a hysteresis for the **"Hysteresis rising edge"** or **"Hysteresis falling edge"** modes.
- Enter a threshold 1 and a threshold 2 for the **"Monitoring"** mode.
- Then enter the delay-time on triggering and the delay-time on alarm return between 0 and 100 seconds.



For the "Monitoring" mode, the threshold 1 must be higher than threshold 2.

- Click **OK** to validate the alarm condition.

To modify an alarm condition:

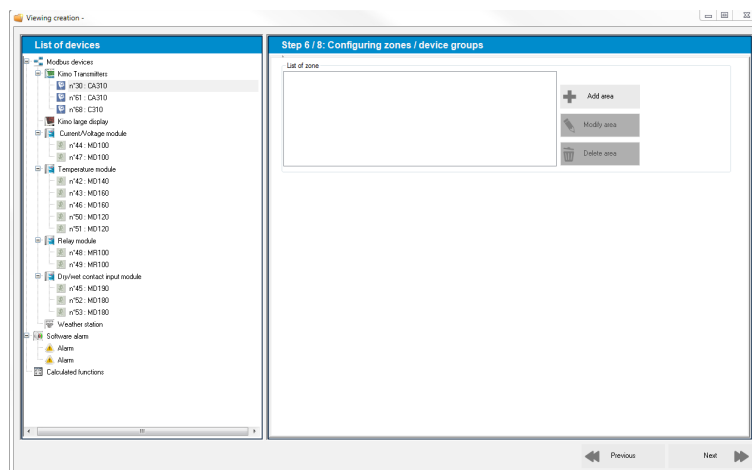
- Click the line of the alarm condition to modify in **"Triggering conditions of the software alarm"** part.
- Click **"Modify condition"**.

To delete an alarm condition:

- Click the line of the alarm condition to modify in **"Triggering conditions of the software alarm"** part.
- Click **"Delete condition"**.

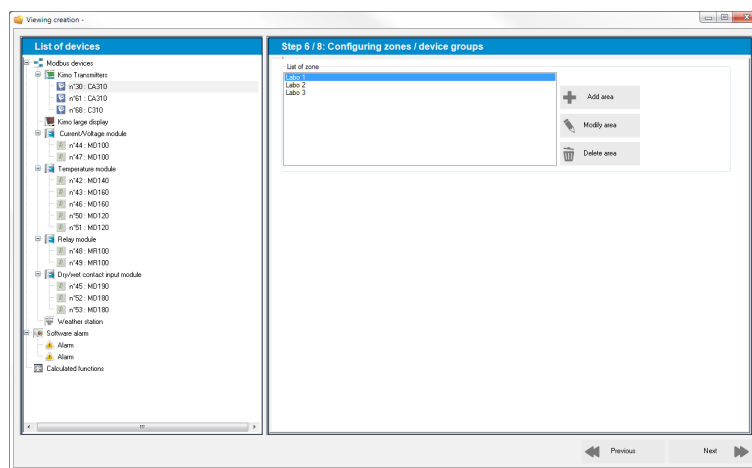
7.1.3 Define some areas

- Click **"Next"** on the **"Alarms configuration"** window.
The "Configuring zones / device groups" window opens.



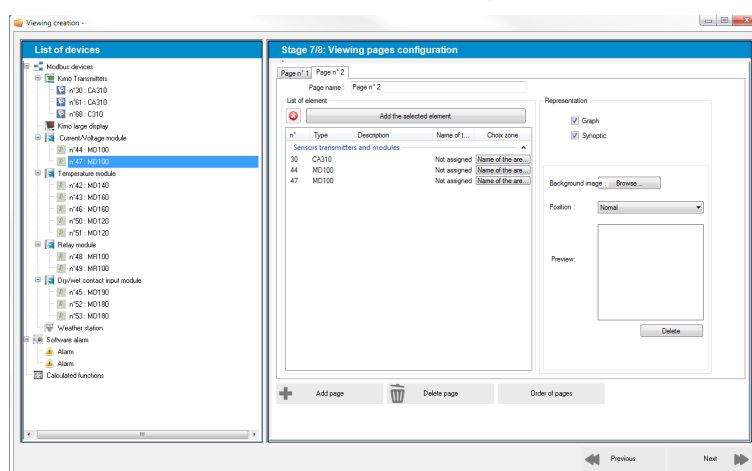
- Click **"Add area"**.
- Name it and click **OK**.
- Add other areas.

The following window is displayed with the list of areas:



7.1.4 Configure the viewing pages

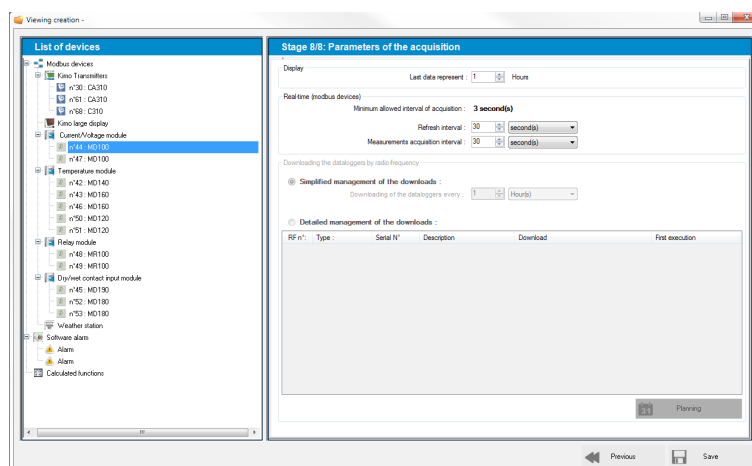
- Click **"Next"** on the **"Alarms configuration"** window.
The **"Viewing pages configuration"** window opens.
This window allows to select the elements which will be displayed on screen.



- Double click an element in the devices list at the left of the window: a sensor, a module, a calculated function, a software alarm, ...
These elements appear in the elements list and are classified by type.
- In **"Selection area"** column, you can assign a device to an area previously created.
- Tick **"Graphic"**, **"Synoptic"** or both according to the desired representation.
- Click **"Browse"** to select a background image then select its position on the page.
- If required, click **"Add a page"** to add a page.

7.1.5 Setup the acquisition

- Click **"Next"** on the **"Viewing pages configuration"** window.
The window **"Parameters of the acquisition"** opens.



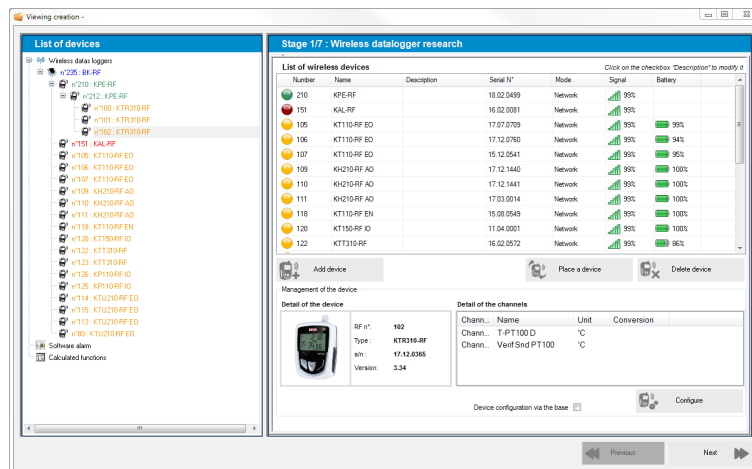
- Adjust the refresh interval of display in second or in minute.
- Adjust the acquisition interval of measures in second or in minute.
- Adjust the duration display in hour: for example, if **"3 hours"** is selected, the application will be display the last three acquisition hours.

7.2 Save the viewing

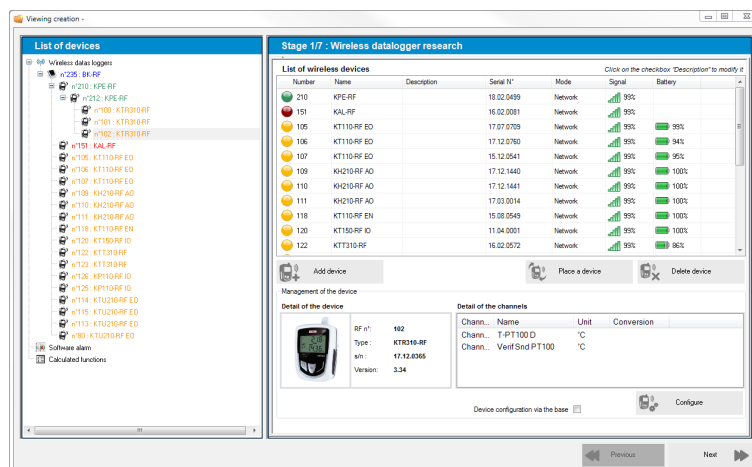
- Click **"Save"** on the **"Parameters of the acquisition"** window.
- Enter a name for the viewing then click **OK**.
The software then asks to open the viewing.
- Click **YES**.
The viewing is open.

7.3 Integrate the wireless data logger

*The wireless data loggers have been properly ticked.
The window below opens.*



- Click **"Add a device"**.
A message opens indicating that a wireless data logger must be placed on the BK-RF communication base.
- Place a wireless data logger on the BK-RF communication base.
- Click **OK**.
The software researches the device then places it in the wireless data loggers list when it has properly detected it.
- Carry out the same operation if several wireless data loggers must be taken into account.
At the end of this operation, the following window is displayed:



7.3.1 Configure a wireless data logger

- Click **"Configure"** on the bottom right.
The following window opens.

Instrument

Type : KTR310 RF
Serial : 17.12.0365
Version : 3.34

Device state

Mode : Network
Display : ON
LED On : ON
LED Alarm : ON

Battery
71.2
Signal
99 %

Campaign

Name : C KTR310 RF
Comment :
State : In progress
Start date : 25/06/2018 09:45:05
Stop date : --
Recording mode : Instant
Recording interval : 00:00:30
Type of start : By PC
Display interval : 00:00:02
Stop condition : Loop
Recording count : 5749
Stop by button : OFF

Channels

Cha...	Name	Probes	Unit	Conver...	Range	Low thresh...	High thresh...
1	T-PT100 D	Remote PT100 Temperature	°C		-100/400	20	26
3	Verif Snd PT100	Remote PT100 Temperature	°C		-100/400	19	30

Configure Cancel

- Click **"Configure"** at the bottom left of the window.
The following window opens.

Instrument

KTR310 RF
Software version : 3.34
Serial : 17.12.0365

General

LEDs
☒ LED On
☒ LED Alarm

Display
☒ ON
☐ OFF
☐ Protected

Load configuration Exit Summary

On the **"Generality"** tab:

- Tick the **"LED ON"** box, it will blink every 15 seconds during the entire duration of the recording.
- Tick the **"LED Alarm"** box, it will have 3 states:
 - **Always OFF:** no threshold has been exceeded.
 - **Fast blinking (5 seconds):** a threshold is currently exceeded on at least one channel.
 - **Slow blinking (15 seconds):** at least one alarm threshold has been exceeded during the campaign.

On the **"Channels"** tab:

- Tick the **"Save channel"** box to save the channel.
- Select the measuring probe and its unit.
- Activate the alarm thresholds by ticking the box then indicate the desired high and low thresholds.

On the **"Save"** tab:

- Indicate a dataset name and eventual comments.
- Select the type of departure between:
 - **"Date"**: indicate a date from which the recording will be begin.
 - **"Button"**: press **OK** on the device at the moment of the desired departure of the recording.
 - **"PC"**: start the recording via a computer.
- Select the interval time between 2 recordings in minute, second or hour.

The **"Recap"** tab displays the selected recording parameters. This tab also allows to record the configuration.

To open a configuration, click **"Load configuration"** then select the desired configuration to send at the wireless data logger.

- Click **"Validate"** to send the modifications to the wireless data logger.

7.3.2 Perform a multiple configuration

For data loggers in Network Data logger Mode only, it is possible to send the configuration to other identical data loggers.

Multiple configuration via the base:

- Put a data logger on the base.
- Set the data logger as explained on chapter 7.3.1.
At the end of the configuration window (after clicking **"Validate"** to send the configuration to the data logger), a message asks to configure other identical data loggers.
- Click **Yes**.
- Put a data logger of the same type (for example, if the 1st data logger configured is a KT 110 EO, put an other KT 110 EO on the base then click **OK**).
The configuration is sent.

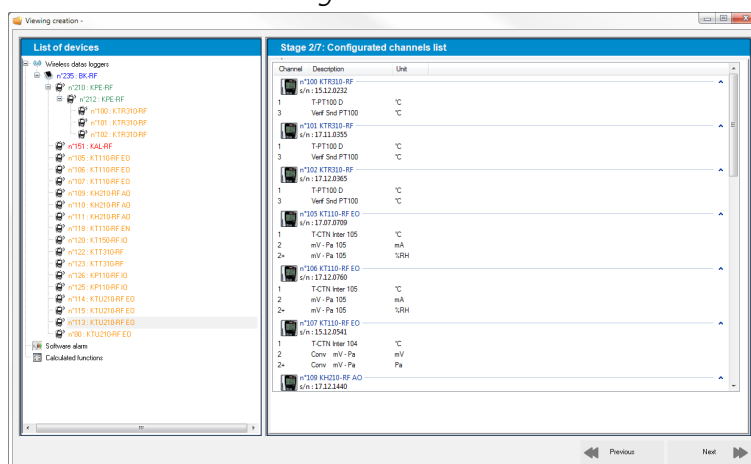
Multiple configuration via wireless network:

- Set the data logger as explained on chapter 7.3.1
At the end of the configuration window (after clicking **"Validate"** button to send the configuration to the data logger), a message asks to configure other identical data loggers.
- Click **Yes**.
A window opens allowing to select the data loggers to set.
- Tick the data loggers to set.
- Click **"Continue"**.
The configuration is sent to the selected data loggers.

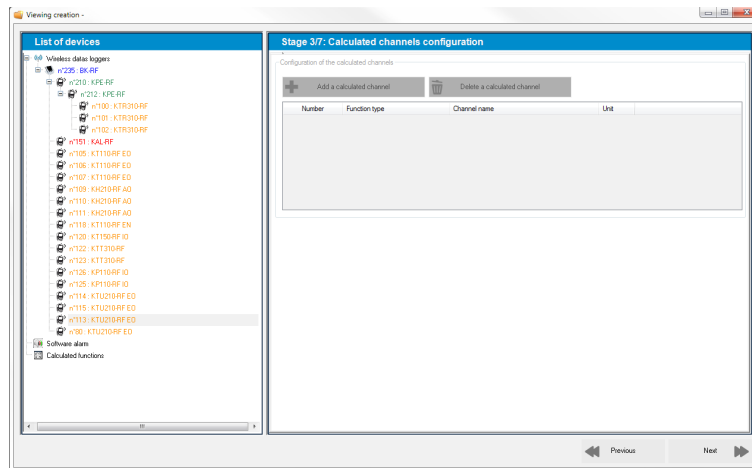
7.3.3 Configured channel list

When the devices have been properly configured, click **"Next"**.

The following window opens. This window lists the configured channels:

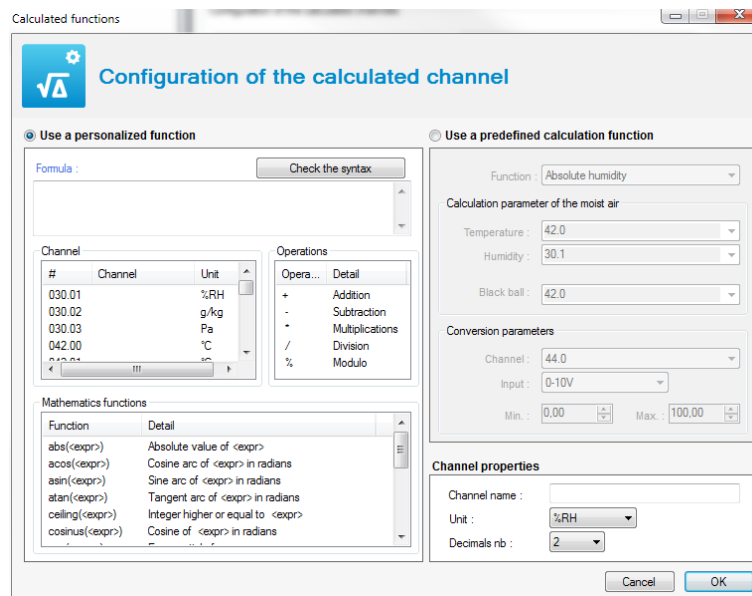


- Click **"Next"**.
The following window opens.



This window allows to configure the calculated channels.

- Click **"Add a calculated channel"**.
- Select the device concerned by the calculated channels then click **OK**.
The following window opens.



It is possible to create 2 types of calculation functions:

- Personalized function
- Function of predefined calculation (absolute humidity, dew point, wet temperature, enthalpy and analogue conversion)

Some predefined functions can be blocked if the required channels for their calculation are not available.

 The calculated channels can not be reused in the calculation of others calculated channels.
The calculation functions of calculated and saves channels with AKIVISION-A can not be modified in AKIVISION-E.
The values of calculated channels can be sent on the ATT300, ATE300, CA310 and CPE310S in digital mode.
Only the channels ATT300, ATE300 and CA310 in analogue mode can be used in the channel calculation.

A – The operations

Procedure:

- Create the formula. Double click the concerned channel(s) and double click the operator (see below the operators table).
Ex: #001 - #008.
- Verify the syntax. If the syntax is correct go to the next step, if not correct the formula.
- Determine the channel properties (Name, unit, decimals).
- Click **OK** to validate.

Operators table:

+, -, *, /	Addition, subtraction, multiplication and division.
%	Modulo (rest of the whole division). Example: 13 % 3 = 1

B – The mathematics functions

Procedure:

- Create the formula. Double click the mathematics function (see below the table of mathematics functions) then double click the concerned channels(s) or insert the appropriate number.
- Verify the syntax. If the syntax is correct go the next step; if not, correct the formula.
- Determine the channel properties (name, unit, decimals).
- Click **OK** to validate.

abs (<expr>)	Gives the absolute value of the expression. <i>ABSV(NameChannel1)</i> gives the channel value NameChannel1 if it is positive, otherwise the opposite of its value. <i>ABS(V(NameChannel1)*10.3+V(NameChannel2))</i> evaluates the expression <i>V(NameChannel1)*10.3+V(NameChannel2)</i> and gives the absolute value.
acos (<expr>)	Cosine arc of the expression in radians <i>acos (0)</i> gives 1.5708 <i>acos (-1)</i> gives 3.1416
Asin (<expr>)	Sine arc of the expression in radians <i>asin (1)</i> gives 1.5708 <i>asin (0)</i> gives 3.1416
Atan (<expr>)	Tangent arc of the expression in radians <i>atan (1)</i> gives 0.7854 <i>atan (0)</i> gives 0
Ceiling (<expr>)	Integer higher or equal to the expression. <i>CEIL (2.9)</i> gives 3 <i>CEIL (-2.9)</i> gives -2
Cosinus (<expr>)	Cosine of the expression in radians. <i>cos (1.5708)</i> gives 0 <i>cos (3.1416)</i> gives -1
Exp (<expr>)	Exponential of the expression.
Floor (<expr>)	Integer lower or equal to the expression. <i>Floor (2.9)</i> gives 2 <i>Floor (-2.9)</i> gives -3
Ln (<expr>)	Napierian logarithm of the expression. (Expression must be positive)

Log10 (<expr>)	Common logarithm of the expression. Log 100 gives 2. Log(V(NameChannel1)*10.3+V(NameChannel2)) evaluates the expression V(NameChannel1)*10.3+V(NameChannel2) and gives the common logarithm. The expression must be positive.
Pow (<expr> ; <pw>)	Elevation to a power: <expr> elevated to a power <pw>. Ex: pow (5;3) = 125
Round (<expr>)	Rounded the operator value to a nearest integer. Round (2.4) gives 2 Round (2.6) gives 3
Sin (<expr>)	Sine of the expression in radians. Sin (1.5708) gives 1 Sin (3.1416) gives 0
Sqrt (<expr>)	Square root of the expression.
Tangent (<expr>)	Tangent of the expression in radians. Tan (0.7854) gives 1 Tan (3.1416) gives 0

C – The predefined functions

Procedure:

- Tick the box **“Use a predefined calculation function”**.
- Select the function (See table below for details).
- Select the channels corresponding to the parameters implicated in the calculation.
- Determine the channel properties. Name and decimals, the units are automatically selected.
- Click **OK** to validate.

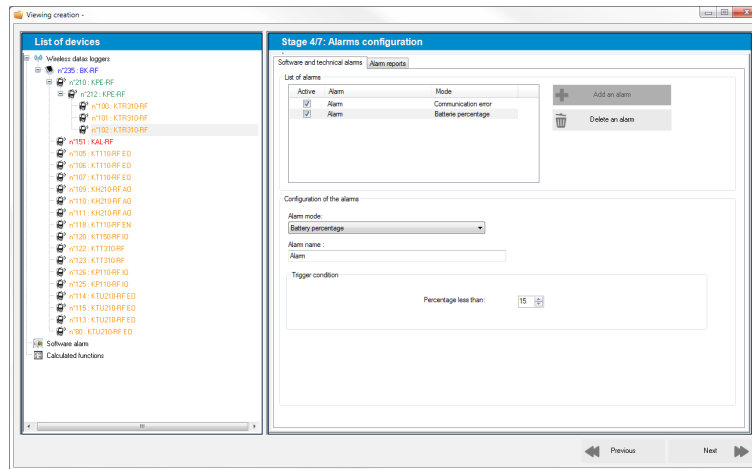
Absolute humidity	The amount of water vapor present in a unit volume of air, usually expressed in kilograms per cubic meter. g/Kg.
Dew point	The temperature to which a given air parcel must be cooled at constant pressure and constant water vapor content in order for saturation to occur. °C td.
Wet temperature	Temperature calculated with dry temperature and relative humidity in the air. °C tw.
Enthalpy	This is the heat change which occurs when 1 mol of a substance reacts completely with oxygen to form products at 298 K and 1 atm. Kj/Kg.

7.3.4 Configure the alarms

- Click **"Next"** on the **"Configuration of calculated channels"** window.

The **"Alarms configuration"** window opens.

This window allows to add technical and software alarms (for example when there is a communication error between a wireless data logger and the BK-RF base communication) or a battery percentage alarm.



- Click **"Add an alarm"** in **"Alarms list"** part.
- Select the type of alarm.
- Enter a name for the alarm.
- Select the communication fail number of the communication base with a device before alarm triggering.
- Select the downloading error number of a wireless data logger before alarm triggering.

In case of battery alarm:

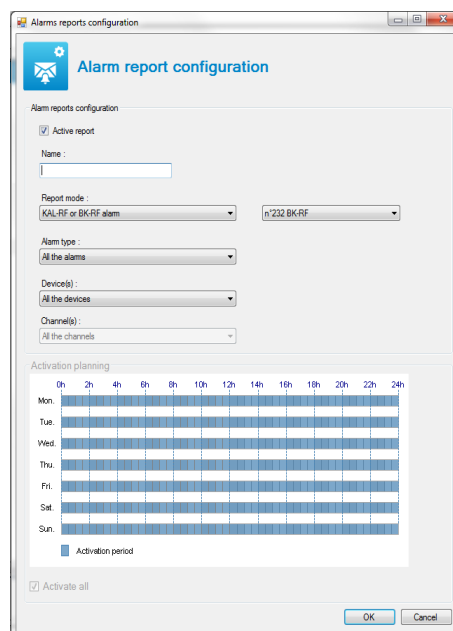
- Select the percentage of battery from which an alarm will be triggered.

This window also allows to configure the deported alarms either to the alarms devices of KAL-RF or BK-RF type or by email. For this second option, it is necessary to inform the messaging parameters.

It is possible to select an alarm named **"technical"**, which will prevent when the data logger has a communication failure, an alarm named **"of threshold"**, which will prevent when one threshold or both will be exceeded (threshold previously defined during the data logger configuration).

- Click **"Alarms report"** tab.
- Click **"Add report"**.

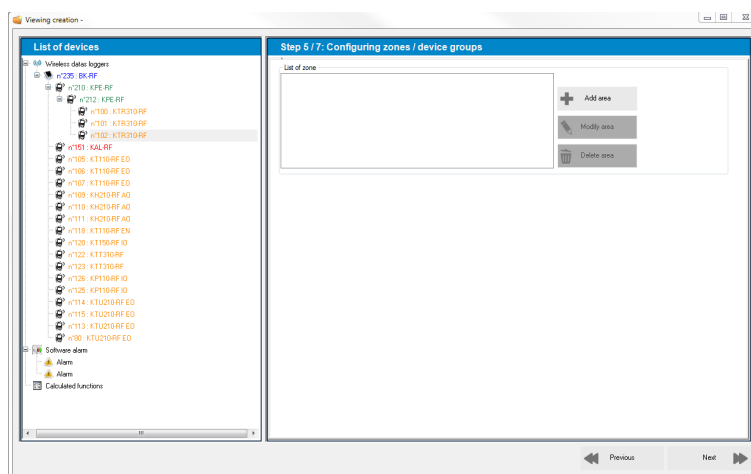
The following window opens.



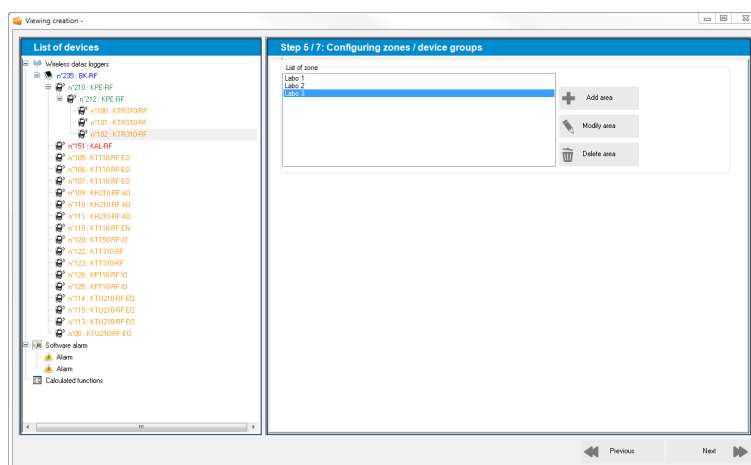
- Tick the **"Active report"** box to activate the alarm report.
- Name the report.
- Select the report mode: KAL-RF or BK-RF alarm or by email.
 - If KAL-RF or BK-RF is selected: then select the device.
 - If email is selected: click **"Email configuration"** then fill out the different fields.
- Select the alarms type:
 - All the alarms
 - Alarms of threshold
 - Technical alarms
- Select the concerned device(s) by the alarm reports.
- Select the activation periods.
- Click **OK** to validate.

7.3.5 Define some areas

- Click **"Next"** on the **"Alarms configuration"** window.
*The **"Configuring zones / device groups"** window opens.*

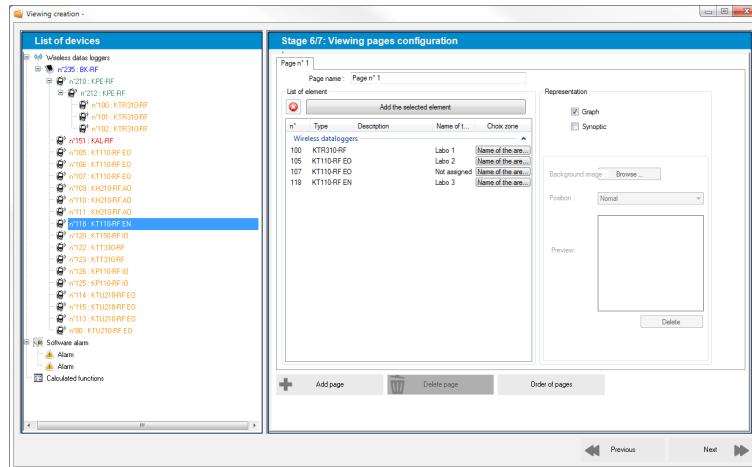


- Click **"Add area"**.
- Name it and click **OK**.
- Add other areas.
The following window is displayed with the list of areas:



7.3.6 Configure the viewing pages

- Click **"Next"** on the **"Alarms configuration"** window.
The **"Viewing pages configuration"** window opens.

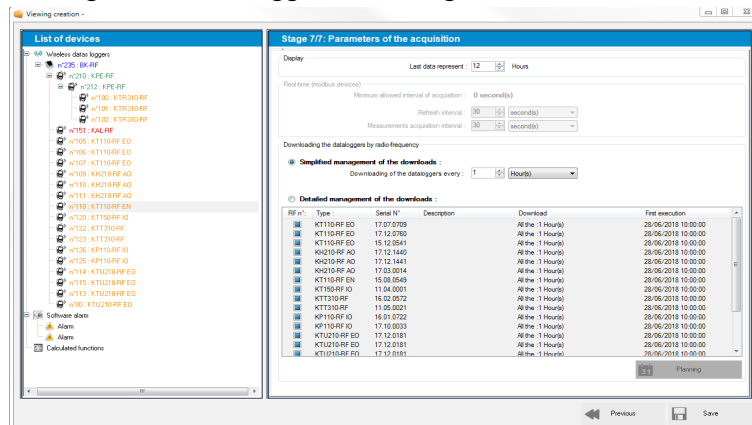


This window allows to select the elements will be displayed on screen.

- Double click an element in the devices list at the left of the window: a wireless data logger, an alarm or a calculated function.
These elements appear in the events list and are classified by type.
- In **"Selection area"** column, you can assign a device to an area previously created.
- Tick **"Graphic"**, **"Synoptic"** or both according to the desired representation.
- Click **"Browse"** to select a background image then select its position on the page.
- If necessary, click **"Add a page"** to add a page.

7.3.7 Setup the acquisition

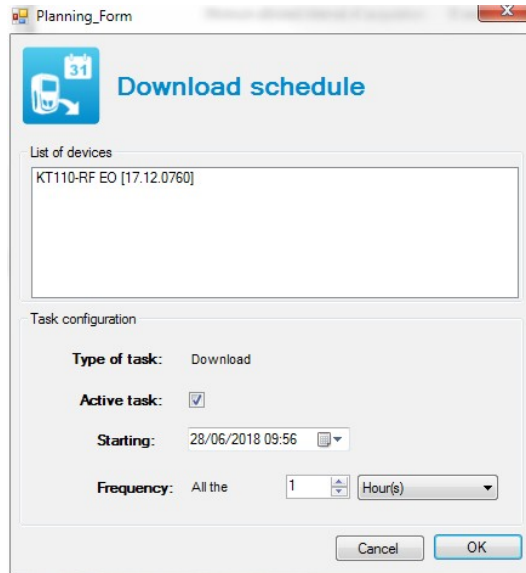
- Click **"Next"** on the window **"Viewing pages configuration"**.
The window **"Acquisition parameters"** opens.
This window allows to configure the data loggers unloading.



There are two ways to unload it:

- First way:
 - Tick the chip **"Simplified management of unloading"**.
 - Select the interval between two unloading in hour.
- Second way:
 - Tick the chip **"Detailed management of unloading"**.
 - Click once on the line of the desired data logger then click **"Planning"** or double-click the required data logger.

The following window opens.



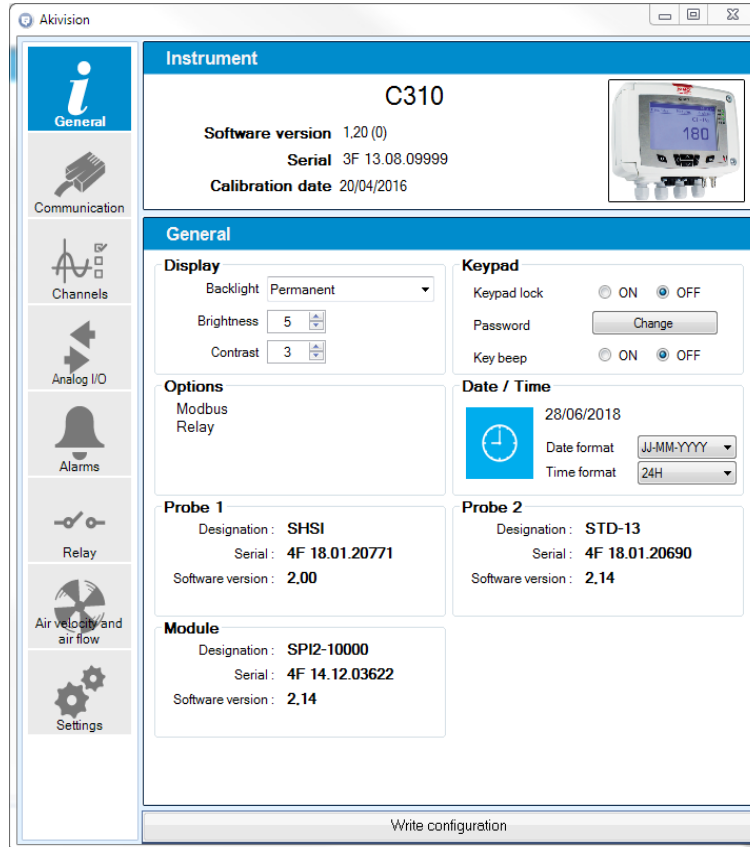
- Tick the **"Active task"** box.
- Select the start date of the download.
- Select the periodicity in hour.
- Click **OK** to validate.

7.4 Save the viewing

- Click **"Save"** on the **"Acquisition parameters"** window.
- Enter a name for the viewing then click **OK**.
The software then requests to open the viewing.
- Click **YES**.
The viewing is open.

8 CONFIGURE A SENSOR

- Click the line of the device to configure in the window **"Transmitters, sensors and modules"**.
The main characteristics of the device displays in "Device management" part.
- Click **"Configure"**.
The window below opens.
This window presents the type of connected device, the device version, its eventual options, its display if it has one, the keypad adjustments, date and hour.



8.1 Configure the display

On the **"Generalities"** panel, for the sensors 310 with display, it is possible to adjust the backlight time, the brightness and the screen contrast.

- Adjust the backlight: select the desired duration between Off, 10 seconds, 30 seconds, 60 seconds, and Permanent.
- Adjust the brightness between 0 and 10.
- Adjust the contrast between 0 and 3.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



8.2 Configure the keypad

8.2.1 Activate or deactivate the keypad

- For more safety and to avoid any manipulation errors, it is possible to block the sensor keys.
- Select **"ON"** to block the keys activation or **"OFF"** to allow the keys activation on the sensor.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



When the keypad is activated, it is then possible to change the transmitter configuration. If some modifications are done with the keypad, Akivision software will not take into account the transmitter modifications.

8.2.2 Modify the password

- For more safety, the keypad of the sensors class 310 is protected by a password.
- Click **"Modify"**.
- Enter a new password then click **"Validate"**.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.

8.2.3 Activate or deactivate the key beep

- Tick **"ON"**: the key beep is activated.
 - Tick **"OFF"**: the key beep is deactivated.
 - Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.
- Note: the key beep is unavailable on the CPE310-S sensors.

8.3 Modify the date and hour format

- Select the date and hour format.
- Click **"Write configuration"** at the bottom of the window.

 The date and hour automatically synchronizes with the computer.

Date / Time

 16/06/2014

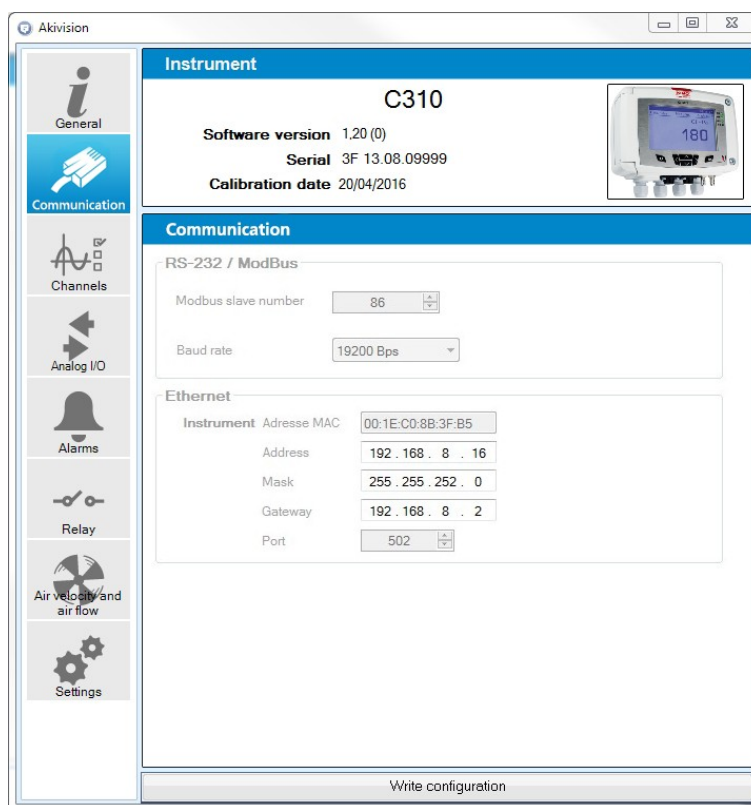
Date format JJ-MM-YYYY

Time format 24H

8.4 Configure the modbus communication

Modbus is a RTU digital protocol with a communication speed configurable from 2400 to 115200 Bauds.

- Click **"Communication"**.
- The following window opens.*



The screenshot shows the 'Akvision' software window with the 'Communication' tab selected. The 'Instrument' section displays 'C310' with software version 1.20 (0), serial 3F 13.08.09999, and calibration date 20/04/2016. The 'Communication' section is divided into 'RS-232 / ModBus' and 'Ethernet'. Under 'RS-232 / ModBus', the 'Modbus slave number' is set to 86 and the 'Baud rate' is set to 19200 Bps. Under 'Ethernet', the 'Instrument' MAC address is 00:1E:C0:8B:3F:B5, the 'Address' is 192.168.8.16, the 'Mask' is 255.255.252.0, the 'Gateway' is 192.168.8.2, and the 'Port' is 502. A 'Write configuration' button is located at the bottom of the window.

In **"RS485 / ModBus"** part:

- Select the modbus slave number.
- Adjust the communication speed from 19200 to 115200 bauds.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.

8.5 Configure the Ethernet communication

The Ethernet communication module allows the transmission, the supervision and the sensors maintenance through an Ethernet network in 10 BASE-T and 100 BASE-TX LAN/WAN supporting the TCP/IP protocol.

In **"Ethernet"** part:

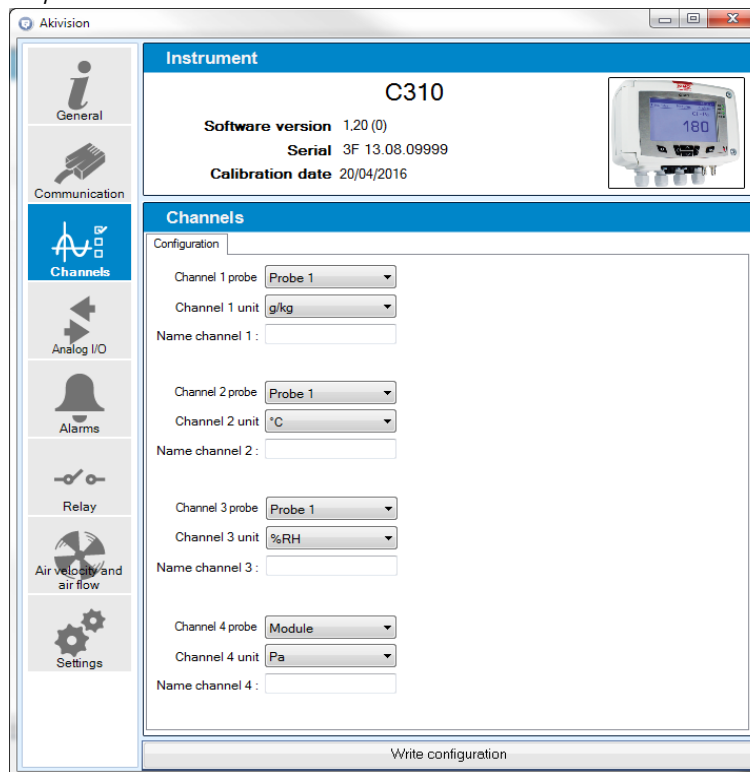
- Enter the address, the mask, the gateway and the port.
These informations are contained in the network characteristics to which the sensor will be connected.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



The Ethernet communication is available on the CPE310-S.

8.6 Configure the channels and the measuring units

- Click **"Channels"**.
The following window opens.

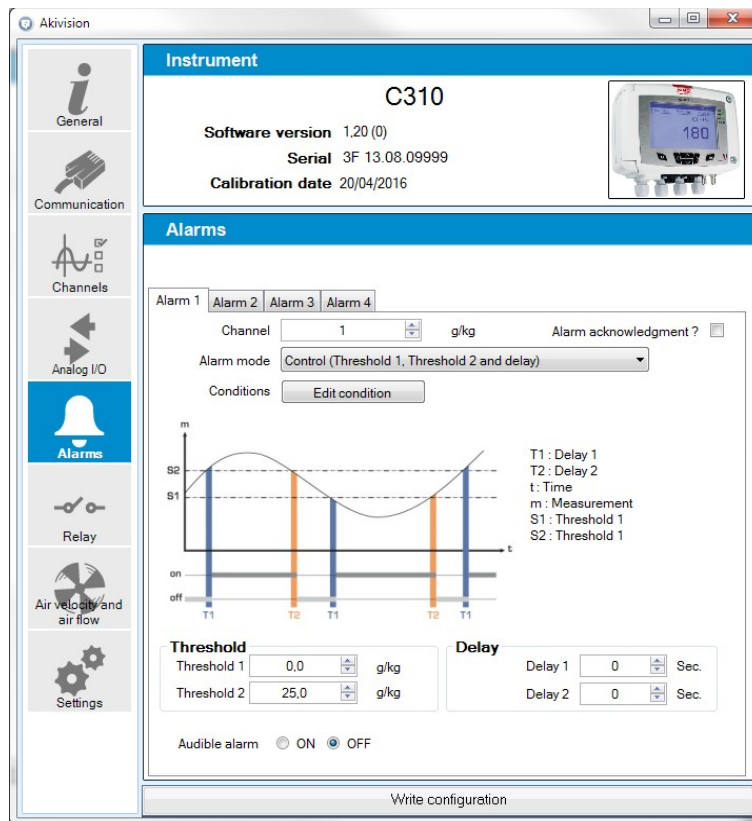


This part includes two tabs:

- The tab **"Configuration"**.
- The tab **"Measure"**.
- Click tab **"Configuration"**.
- Attribute **"Module"**, **"Probe 1"** or **"Probe 2"** for each available channel.
 - Select **"None"**, to attribute nothing to the channel.
- Click **"Write configuration"** at the bottom of the window to sent the sensor modifications.

8.7 Configure the alarms

- Click **"Alarms"**.
The following window opens.



- Click the tab of the desired alarm.
- Select in the drop-down list the alarm mode between:
 - **No alarm**
 - **Rising edge triggering and temporisation**
 - **Falling edge triggering and temporisation**
 - **Monitoring (Threshold 1, Threshold 2 and temporisation)**
 - **Sensor state**

If the mode **"Rising edge triggering and temporisation"**, **"Falling edge triggering and temporisation"** or **"Monitoring (Threshold 1, Threshold 2 and temporisation)"** is selected:

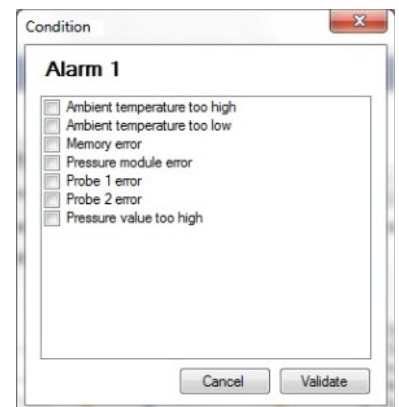
- Select the channel on which the alarm will be active.
- Adjust the values of the threshold 1, of the hysteresis and temporisations 1 and 2 for the **"Rising edge triggering and temporisation"** and **"Falling edge triggering and temporisation"** modes.
OR
- Adjust the threshold 1 and 2 and the temporisations 1 and 2 for the **"Regulation (Threshold 1, Threshold 2 and temporisation)"** mode.
- Select **"ON"** to activate the sound alarm or **"OFF"** to deactivate it.
- Click **"Write configuration"** to send the modifications to the sensor.

If **"Sensor state"** mode is selected:

- Select the alarm on which the alarm will be active.
- Click **"Modify conditions"**.
The window of alarm conditions opens.
- Tick the desired conditions then click **"Validate"**.

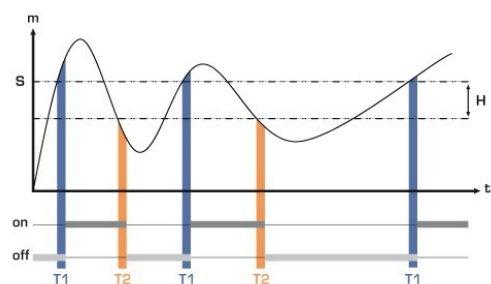


It is possible to tick several alarm conditions.



- Click **"Write configuration"** to send the modifications to the sensor.

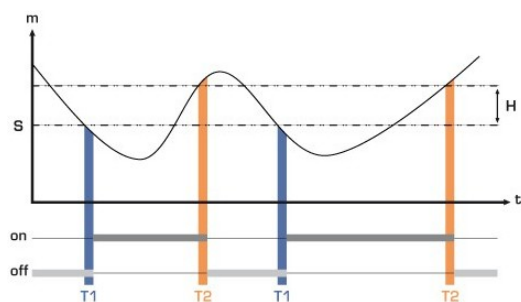
8.8 Details of alarm modes



Rising edge

Measure (m) < Threshold (S) during the temporisation $T1 \rightarrow$ Alarm activation.

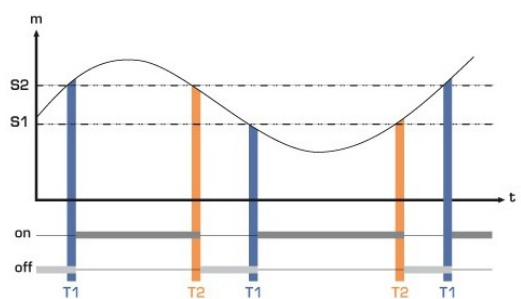
Measure (m) > Threshold (S) + Hysteresis (H) during the temporisation $T2 \rightarrow$ Alarm deactivation.



Falling edge

Measure (m) > Threshold (S) during the temporisation $T1 \rightarrow$ Alarm activation.

Measure (m) < Threshold (S) - Hysteresis (H) during the temporisation $T2 \rightarrow$ Alarm deactivation.



Monitoring

The alarm triggers when the measure is out of the high threshold and low threshold.

8.9 Configure the input and output

With this function, you can modify the outputs ranges of your sensor. You enter the outputs scales on which you want the sensor transmits the measures.

- Click **"Analog I/O"**.

The following window opens.

The screenshot shows the 'Analog I/O' configuration window for the C310 instrument. The window has a sidebar with icons for General, Communication, Channels, Analog I/O (selected), Alarms, Relay, Air velocity and air flow, and Settings. The main area displays the instrument name 'C310', software version '1.20 (0)', serial number '3F 13.08.09999', and calibration date '20/04/2016'. Below this, the 'Analog I/O' section shows four channels. Each channel has a 'Type' dropdown set to '4 - 20 mA', a 'Test' button, and 'Minimum' and 'Maximum' value fields. Channel 1 has 'None' for both. Channels 2, 3, and 4 have '0,0' for both, with units 'm/s', 'm3/h', and '°C' respectively. A 'Write configuration' button is at the bottom.

- Select the output type: 4-20 mA, 0-20 mA, 0-10 V, 0-5 V.
- Adjust the minimum and the maximum for each analogue output.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



The inputs are only available on the CA310 with the MVA module.

8.10 Test the analogue outputs

Once the inputs and outputs configuration carried out, it is possible to test them with an external measurement device. This test allows to check on a multimeter, a regulator or an automaton, the proper functioning of the outputs. The sensor will generate a voltage (between 0 and 10 V) or a current (between 0 and 20 mA) depending on the switch adjustment of the sensor card.

- For an output signal in 0-10 V, the sensor will generate 0 – 5 or 10 V.
- For an output signal in 0-5 V, the sensor will generate 0 – 2.5 or 5 V.
- For an output signal in 4-20 mA, the sensor will generate 4 – 12 or 20 mA.
- For an output signal in 0-20 mA, The sensor will generate 0 – 10 or 20 mA.

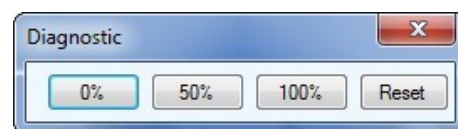


Before any diagnosis attempts of the outputs, check that the sensor connections and configurations are operational to avoid damaging the sensor and multimeter!

- Choose the channel for the outputs diagnosis.
- Connect a measuring device on the channel 1, channel 2, channel 3 or channel 4 (depending on sensor).

Once the connection of the measuring device to the sensor is carried out, you can diagnose the analogues outputs on several check points:

- Click **"Test"** of the analogue E/S window.
The following window opens.
- Click 0%, 50%, 100% or Reset.



Diagnosis button	Generation depending in output signal			
	0-10 V	0-5 V	0-20 mA	4-20 mA
Reset	Return to the measuring mode			
0%	0 V	0 V	0 mA	4 mA
50%	5 V	2.5 V	10 mA	12 mA
100%	10 V	5 V	20 mA	20 mA

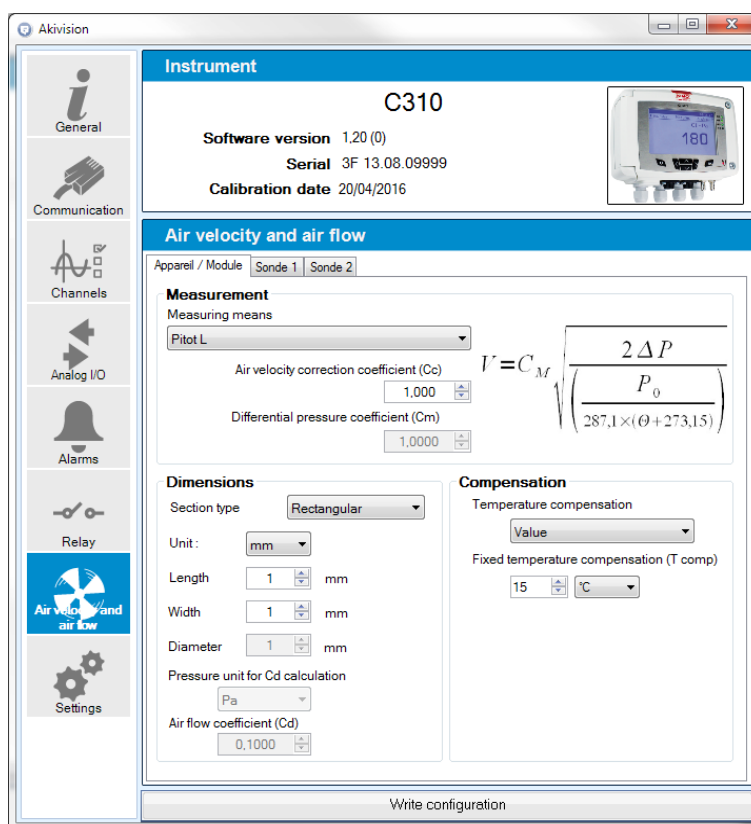
8.11 Configure the measure in velocity and airflow

This adjustment only concerns the CP210, CTV210 sensors and the sensors class 310 with a pressure module or a velocity probe available in option.

8.11.1 Select the measuring mean (C310/CA310 with pressure module and SQR3 option)

The velocity calculation is calculated from the pressure and the differential pressure element, therefore it is necessary to select the differential pressure element used to realize the measures. You must then adjust the differential pressure coefficient then the velocity correction factor.

- Press **"Velocity and airflow"**.
The following window opens.



In **"Measures"** part:

- Select the measure means between:
 - L Pitot tube
 - S Pitot tube
 - Debimo

- Differential pressure coefficient
- Enter the correction coefficient of the velocity measurement (C_c) if necessary.
This coefficient must be including between 0.0000 and 9.9999.
- If **"Differential pressure coefficient (Cm)"** is selected as measurement, enter its coefficient.

 According to the type of selected section, the formula for velocity calculation is indicated in the **"Measures"** part. Pass your mouse above to have more information on the formula.

8.11.2 Adjust the compensation in temperature (C310 and CA310)

It is possible to modify the compensation value in temperature. Indeed, the velocity and the airflow measured with a Pitot tube and or Debimo blades (or others differential pressure element) are function of the using temperature. It is necessary to enter the using temperature in order to obtain more coherent results.

In **"Compensation"** part:

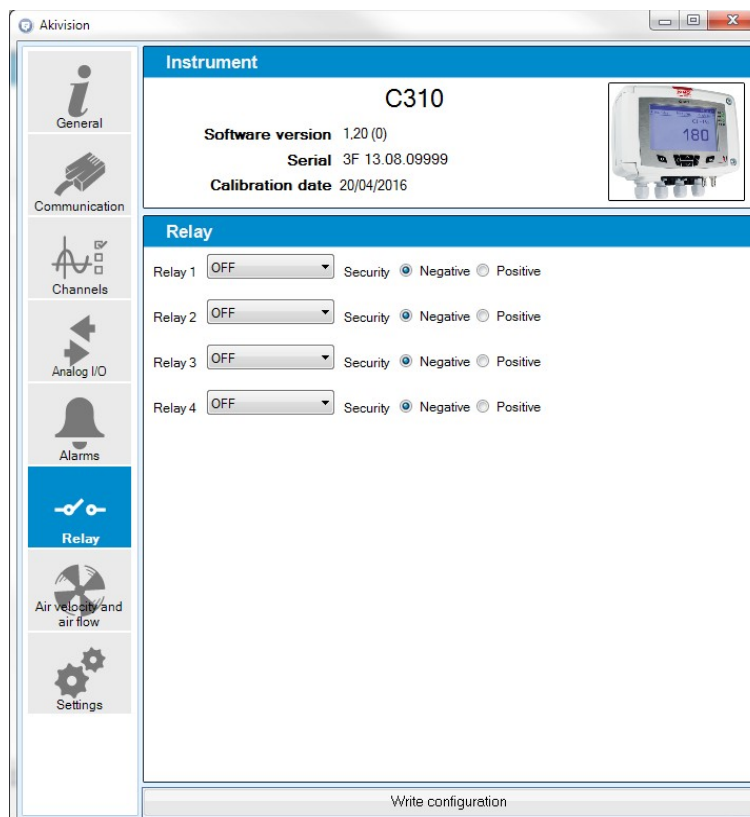
- Select the unit ($^{\circ}\text{C}$ or $^{\circ}\text{F}$)
- Enter the compensation value in temperature.

8.11.3 Configure the section type (C310 and CA310)

In **"Dimensions"** part of the **"Velocity and airflow"** panel:

- Select the section type: circular, rectangular or airflow coefficient.
- Select the unit for a rectangular or circular section: mm or inch
- Enter the dimensions:
 - Width and length for a rectangular section.
 - Diameter for a circular section.
- OR
- Enter the C_d value for an airflow coefficient.
- Click **"Write configuration"** at the bottom of the window to send the sensor modifications.

8.12 Configure the relays (C310 and CA310)



The screenshot shows the 'Relay' configuration window in the Aktivision software. The window has a sidebar on the left with icons for General, Communication, Channels, Analog I/O, Alarms, Relay (selected), Air velocity and air flow, and Settings. The main area is divided into two sections: 'Instrument' and 'Relay'.

Instrument section:

- Instrument: C310
- Software version: 1.20 (0)
- Serial: 3F 13.08.09999
- Calibration date: 20/04/2016

Relay section:

Relay	State	Security
Relay 1	OFF	Negative (selected)
Relay 2	OFF	Negative (selected)
Relay 3	OFF	Negative (selected)
Relay 4	OFF	Negative (selected)

At the bottom of the window, there is a button labeled 'Write configuration'.

The relays outputs are, by default, in negative security: The relay is energized during an alarm condition. Via the software, it is possible to configure the relays in positive security: the relay is de-energized during an alarm condition or a power cut.

- Select **"ON"**, **"OFF"** or **"Alarm 1, 2, 3 or 4"** in the list of the desired relay.
 - **"ON"** is selected: the relay is activated all the time.
 - **"OFF"** selected: the relay is deactivated.
 - **"Alarm 1, 2, 3 or 4"** select: the relay triggering is assigned to an alarm previously configured.
- Select **"Positive"** or **"Negative"**.



To activate the relays according to the alarms, these latter must be fully configured.

To make a relays test:

- Click **"Relay test 1, 2, 3 or 4"**: The relay switches, then returns to its normal state after 1 second.

8.13 Other adjustments

8.13.1 Adjust the purging time

The purging mode allows to freeze the measure in the display, block the analogues outputs and activate the relay 1 in order to command a collection system of an aeraulic network and activate the relay 2 in order to isolate the sensor.

- Click **"Adjustments"**.
The following window opens.

In **"Purge"** part:

- Select **"ON"** to activate the purging mode.
- Adjust the purging time between 0 and 100 seconds.
- Adjust the interval between 2 purges between 0 and 100 minutes.
- Adjust the delay between 0 and 100 seconds.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.

8.13.2 Select a normative value

It is possible to select a standard, which allows to bring the measuring values to the measuring values in normal environmental conditions.

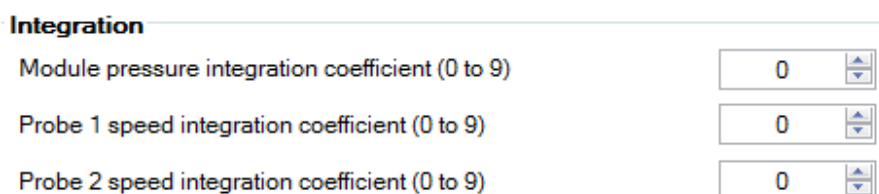
In **"Normative values"** part:

- Select in the drop-down list:
 - DIN13423
 - ISO2533
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



8.13.3 Enter an integration

It is possible to enter an integration coefficient allowing to smooth the measure and also to avoid the untimely variations. The concerned parameters are the pressure and velocity.



In **"Integration"** part:

- Select the integration coefficient in pressure between 0 and 9. A pressure module must be connected to the sensor.
- Select the integration coefficient in velocity between 0 and 9. A velocity probe must be connected at the sensor location 1 or 2.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



Coefficient 0: no integration.

Coefficient 9: maximals integration, reading more stable.

8.13.4 Adjust the temporisation between two autozeros

- Enter a value between 0 and 60 minutes on the line **"Temporisation between 2 autozeros in minute(s) from 0 to 60 min)"**.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.



Temporisation 0: no auto-calibration.

Temporisation 60: maximum gap between 2 auto-calibrations (60 minutes).

8.13.5 Enter a compensation

It is possible to enter a compensation in altitude or in atmospheric pressure on the device and the connected probes.

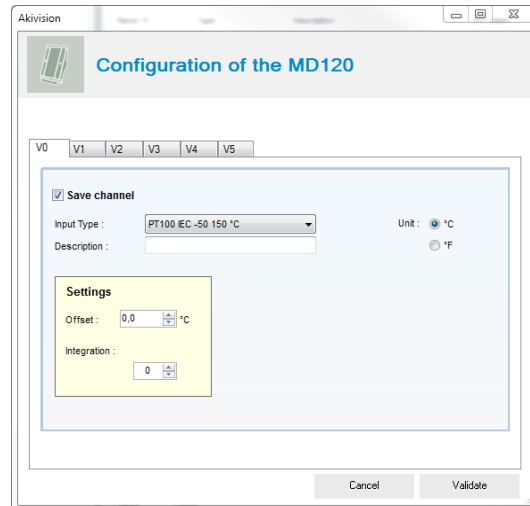
In **"Device compensation"** and/or **"Probe 1 compensation"** and/or **"Probe 2 compensation"** part:

- Select the pressure unit (hPa, mbar or mmHg) or in altitude (m).
- Enter an atmospheric pressure or altitude value.
- Click **"Write configuration"** at the bottom of the window to send the modifications to the sensor.

9.1 Configure a temperature module

For the temperature modules, all the channels are configurable.

- Click the module line to configure in the window **"Transmitters, sensors and modules"**.
 - Click **"Configure"**.
- The window below opens.*

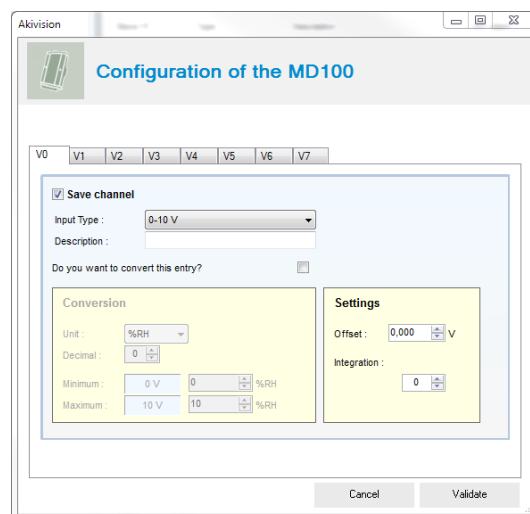


- Click the tab of the channel to configure.
- Tick the box **"Save this channel"** to save data.
- Select the input type in the list and its unit.
- Apply an offset (in order to compensate an eventual drift of the sensor, it is possible to insert an offset which can be a maximum of ± 10).
- Adjust the integration of the measure (the integration coefficient allows to smooth the measure, to avoid the untimely variations. New displayed value = $(((10 - \text{Coef.}) \times \text{New Value}) + (\text{Coef.} \times \text{Hold value})) / 10$).
- Click **"Validate"** to save the modifications.

9.2 Configure a module of current/voltage

For the current/voltage modules, all the channels are configurable.

- Click the module line to configure in the window **"Transmitters, sensors and modules"**.
 - Click **"Configure"**.
- The window below opens.*



- Click the tab of the channel to configure.
- Tick the box **"Save this channel"** to save data.
- Select the input type in the list.

- Enter a description.
- Tick the box **"Do you want to convert this input"** to convert the input.
*The **"Conversion"** part becomes accessible.*
- Select the conversion unit in the list.
- Select the number of decimal.
- Select the minimum and the maximum of the scale.
- Apply an offset (In order to compensate an eventual drift of the sensor, it is possible to insert an offset which can be a maximum of ± 10).
- Adjust the measure integration (the integration coefficient allows to smooth the measure, to avoid the untimely variations. New displayed value = $(((10 - \text{Coef.}) \times \text{New Value}) + (\text{Coef.} \times \text{Hold value})) / 10$).
- Click **"Validate"** to save the modifications.

9.3 **Configure a relay module**

The relays outputs are, by default, in **negative security**: the relay is energized during an alarm condition. Via the software, it is possible to configure the relays in **positive security**: the relay is de-energized during an alarm condition or a power cut.

- To be in negative alarm condition, click the box **"Negative"** of the sidebar **"Security of relay alarms"**.
- To be in positive alarm condition, click the box **"Positive"**.
- Click **"Validate"** to save the modifications.

Each of the 8 relays is configurable and each relay can have several added alarm conditions. In order to create an alarm condition, click **"Add a condition"**.

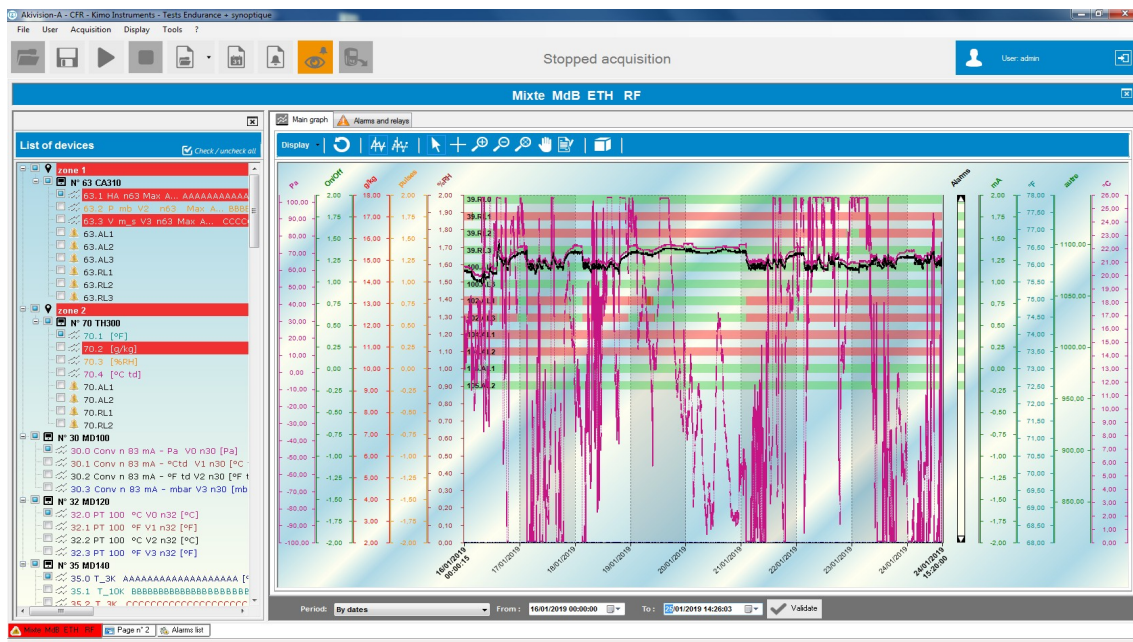
It is possible to choose the alarm emails sending for each relay.

9.4 **Configure a dry/wet contact module**

All the channels are configurable. It is possible to:

- Choose to save channel.
- Name the channel by filling the field **"Description"**.
- Define the functioning mode **"Normal"** or **"Inverted"**.
- Click **"Validate"** to save the modifications.

10.1 Graphic panel



10.1.1 Devices list

All the viewing devices are listed in this panel. The boxes to tick allow to choose the channels to display on the graphic and in the table.

10.1.2 Value display: graphic, table and statistic

It is possible to have different values displays.

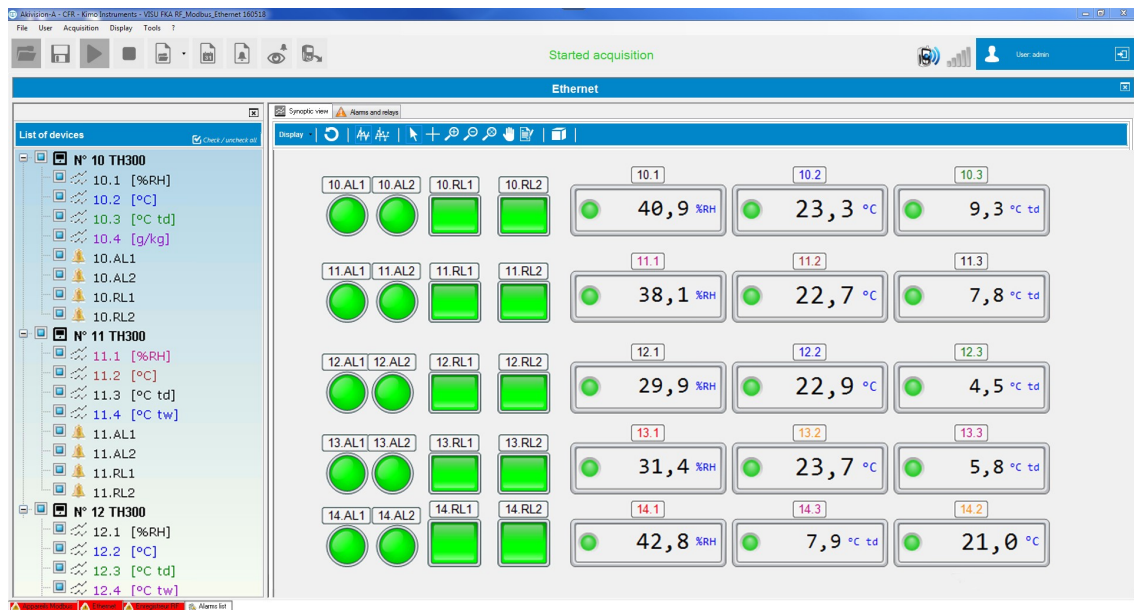
- Click **"Display"** then select the desired display type among:
 - Graphic and table
 - Graphic and statistics
 - Graphic
 - Synoptic
 - Statistics
 - Table

For the **"Graphic and table"**, **"Graphic and statistics"** and **"Graphic"** displays, a toolbar with different buttons listed below allows to:

	Update or reset the zooms		Zoom in
	Display the curves		Zoom out
	Display the points		Dynamic zoom
	Selection pointer		Move the displayed area
	Cursor to browse the points		Add a note
	3D display		

- If the **"Graphic and table"** display is selected: the software displays the values in the form of curves and in a table.
- If the **"Graphic and statistics"** display is selected: the software displays the values in the form of curves and the remarkable values (min, max, number of points,...) in the form of table.
- If the **"Graphic"** display is selected: the software solely displays the value in the form of curve.

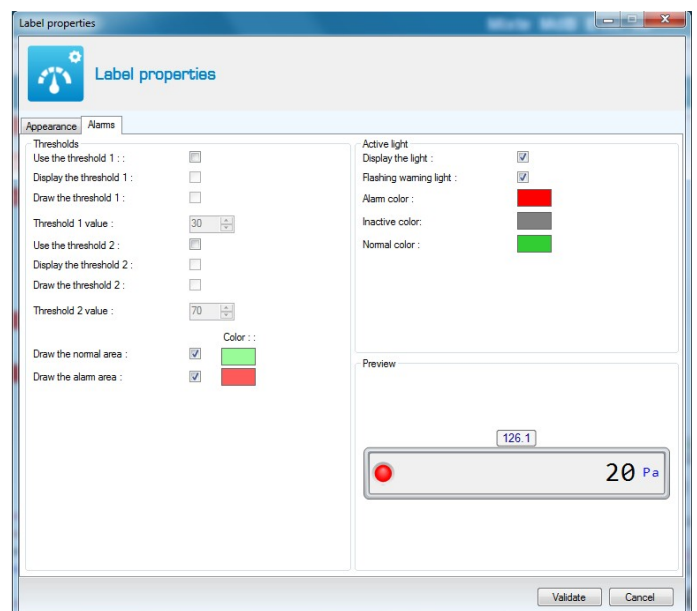
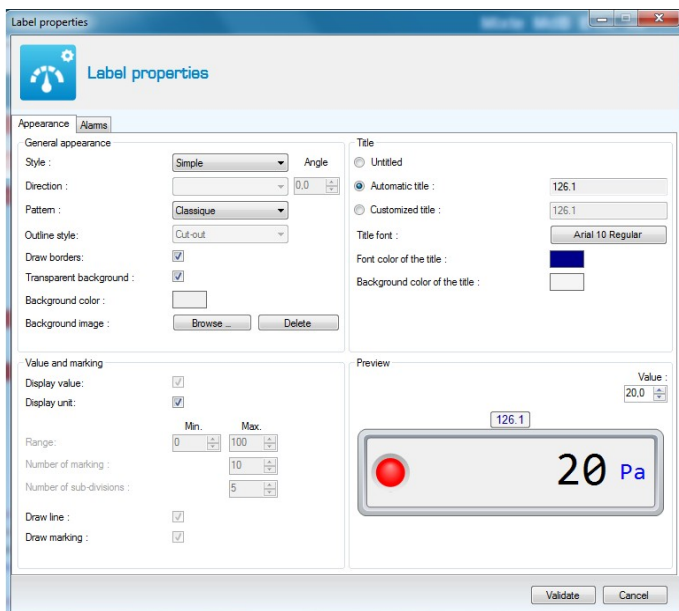
10.2 Values display: synoptic representation



The synoptic representation gathers the slaves and the alarms on the same viewing in the form of customizable sketch. It is thus possible to locate in real time the measured values and the alarms.

It is possible to modify the elements of the synoptic representation:

- Right click an element then click **"Properties"**.
- The following window opens.*



The **"Appearance"** tab allows to modify the element appearance.

The **"Alarm"** tab allows to modify the alarm appearance on the element. It is also possible to display or not the threshold, to modify their values, ...

- Carry out the desired modifications then click **"Validate"**.

Example of representation:

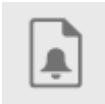


These representations can then be modified: orientation, colours, title, ...

11 ALARMS LIST

11.1 Access to the alarms list

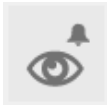
- Click "Access to the alarms list".



11.2 Acknowledge the alarms

If the alarms haven't been acknowledged, it is possible to make it from the software:

- Click "Display the unacknowledged alarms".
The following window opens.



List of unacknowledged alarms

☒ Select/deselect all ☐ Today

Date	Alarm name	Device number	Device	Channel	Value	Unit	State	Alarm type	Mode
☒ 27/06/2018 08:48	105.AL2	105				°C td	ON	Relay & Active light	Rising edge
☒ 27/06/2018 04:35	105.AL1	105				°C	ON	Relay & Active light	Falling edge
☒ 27/06/2018 03:41	109.AL2	109				%RH	ON	Relay & Active light	Rising edge
☒ 27/06/2018 03:15	113.AL3	113				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:14	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:13	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 27/06/2018 01:11	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:10	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 27/06/2018 01:10	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 26/06/2018 20:10	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 20:07	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 26/06/2018 20:06	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 18:57	113.AL3	113				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 18:56	113.AL3	113				°C	OFF	Relay & Active light	Rising edge

2270 element(s)

Acknowledge the selected alarms

Close

- Tick the alarms to acknowledge.
- Click "Acknowledge the selected alarms".
- Add a comment.



This comment is compulsory.

12 ACCESS TO THE EVENT REPORT

The log is a report which gathers the events intervened during the acquisition:

- Date
- Source (slave / software)
- Name
- Category (suppression / launch acquisition, configuration modification, etc...)
- Alarms description (alarm, relay...)
- Acknowledgement
- Comment
- Connected user (if the user management is active)

➤ Click **"Access to the events report"**.
The following window opens.



Date	Level	Application	Message	Category	Comment
27/06/2018 19:14:22	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:12:31	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:11:25	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:11:25	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:10:32	Error		Echec identification backgroundWorker1_DeWork		
27/06/2018 19:10:09	Information		Suppression d'un appareil radio fréquence	Enregistreurs radio fréquence	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:10:00	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:09:41	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:09:25	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:09:12	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 19:07:47	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 19:07:03	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 19:04:48	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 19:03:49	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 19:01:47	Information		Appareil reconfiguré	Configuration	n°115 KTLU210-RF EO [17.12.0181]
27/06/2018 19:00:29	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 18:59:11	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 18:58:23	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 18:57:19	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 18:54:02	Information		Appareil reconfiguré	Configuration	n°114 KTLU210-RF EO [17.12.0181]
27/06/2018 18:53:47	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:53:00	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:52:55	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:52:55	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:52:53	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:52:52	Error		InvalidArgument-La valeur '4' n'est pas valide pour 'Index' Nom du paramètre : index à System.Windows.Forms.ListViewItem.ListViewSubItemCollection.getItem(int32 index) à InterfaceConfigureur.FRM_configKistock.BTN_valider_Click(...)		
27/06/2018 18:50:49	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]
27/06/2018 18:50:26	Information		Appareil reconfiguré	Configuration	n°113 KTLU210-RF EO [17.12.0181]

➤ It is possible to export the event report in table form (.csv), pdf or directly print it.

13 AKIVISION-E APPLICATION INSTALLATION

For the installation and minimum requirements, please see the prerequisite document "**LR/03/BE**".

13.1 *Software launching*

To launch the application, it is necessary to connect the security key on the computer's USB connection.



Security key or dongle



- **Connect the security key only after the software installation.**
- **During the usage, the computer researches if the key is present every 5 minutes. If the key is not detected, it is no longer possible to make actions on the application.**

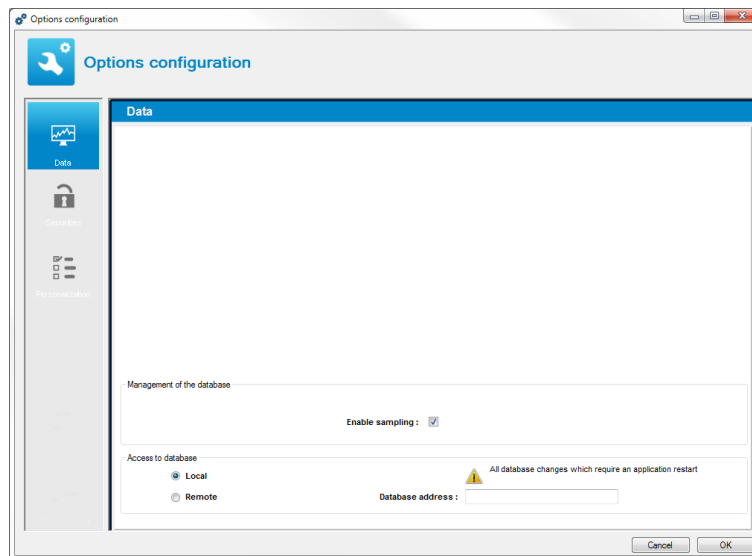
14 SETUP THE APPLICATION

It is possible to adjust several general parameters of the application. It is advised to adjust them before the first usage. These adjustments concern:

- **The database access**
- **The users management**
- **The application personalization**

To access to these adjustments:

- Click **"Options"** on the main screen of the application.
The application requires the user to log in.
- Enter the following login: **"admin"** then the following password: **"admin"**. See page 56 for creation and management of users login and passwords.
The following window opens.



14.1 Manage the data

This window allows to optimise the software performances if the data number or the acquisition frequency is very important. Therefore, the sampling allows to keep a defined number of values.

- To activate this function, tick the **"Activate sampling"** box.

This window also allows to select the access type to the database:

- Local: access to the Akivision-A database installed on the computer
- Remote: access to the Akivision-A database installed on an another computer

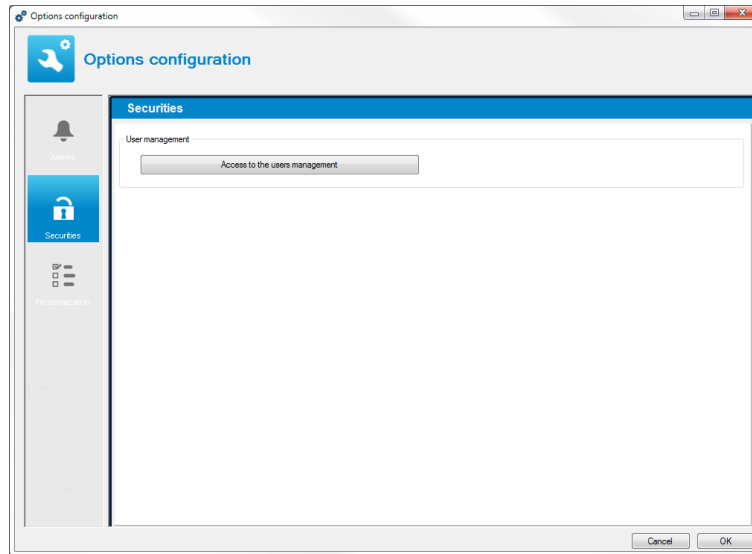
In the last case, it is necessary to indicate the database address of the computer on which AKIVISION-A is installed. This address is composed of the computer name and the listening IP port of the SQL server.

For example: ORDINATEUR_PAUL:24700

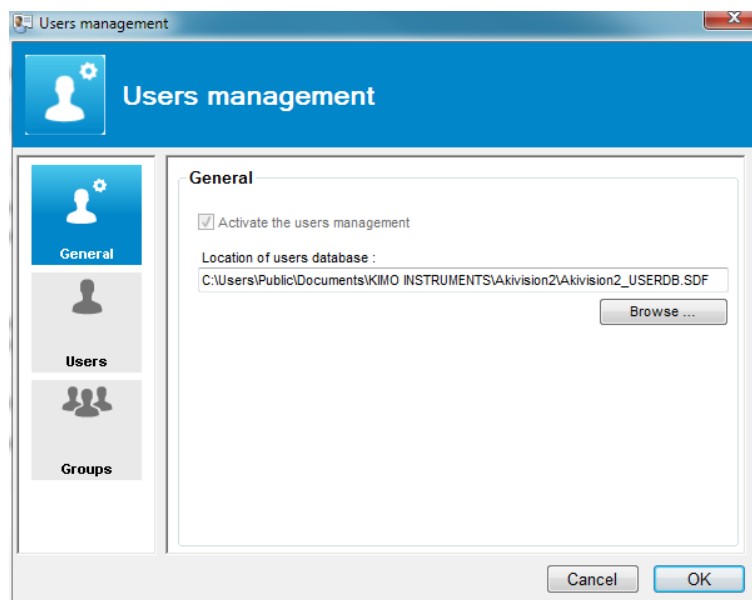
- Contact your network administrator to know the exact address of the computer.

14.1.1 Manage the users

- Click **"Safeties"**.
The following window opens.



- Click **"Access to the users management"**.
The following window opens.

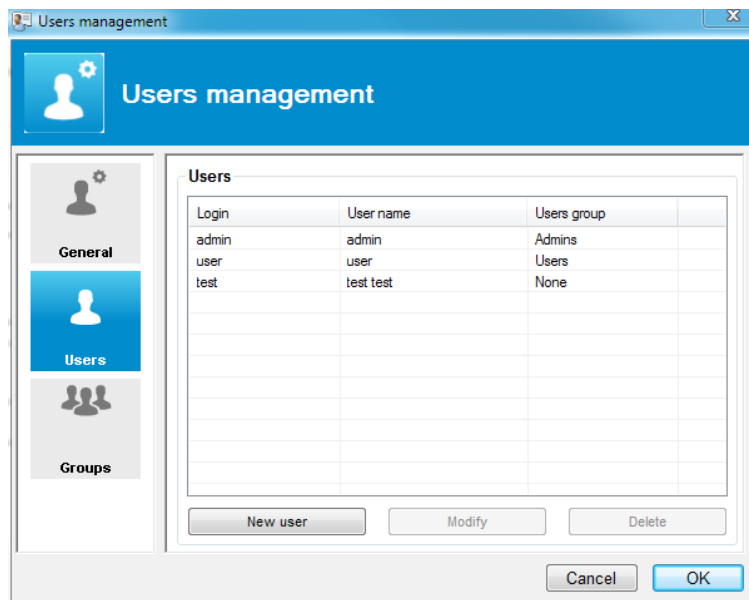


- Tick the box **"Activate the users management"**.
- Click **"Browse"** to modify if necessary the location of the users database.



For the first application, the indicated path is the default path of the users database.

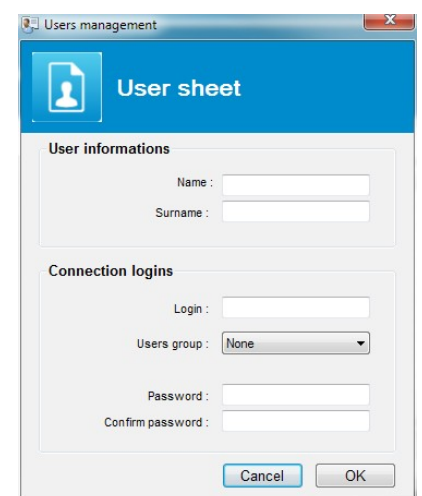
- Then click **"Users"** on the left side of the window.



The following window opens.

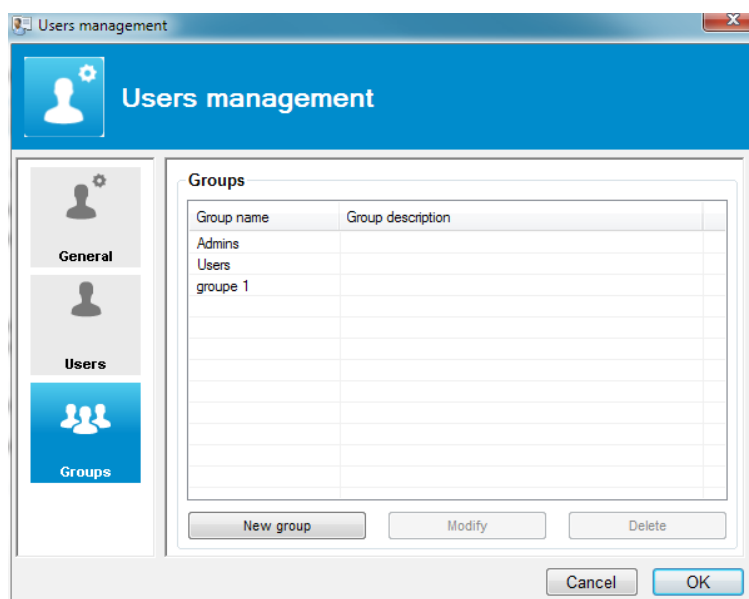
This window contains 2 users created during the Akivision-E installation:

- An **"Admin"** user, which has all the rights, which can be modified but which cannot be deleted.
- A **"Users"** user, which has restricted rights, and which can be modified and deleted.
- Click **"New user"**.
The opposite window opens.
- Enter the user's first and last name in the **"Users informations"**.
- Assign a group to the user (see chapter 4.5.2 for the groups creation).
- Create the connection logins of the user: enter a login in the field **"Login"** and a password in the field **"Password"** then confirm the password in the field **"Confirm the password"**.
- Click **OK** to validate the user creation.



14.1.2 Manage the users groups

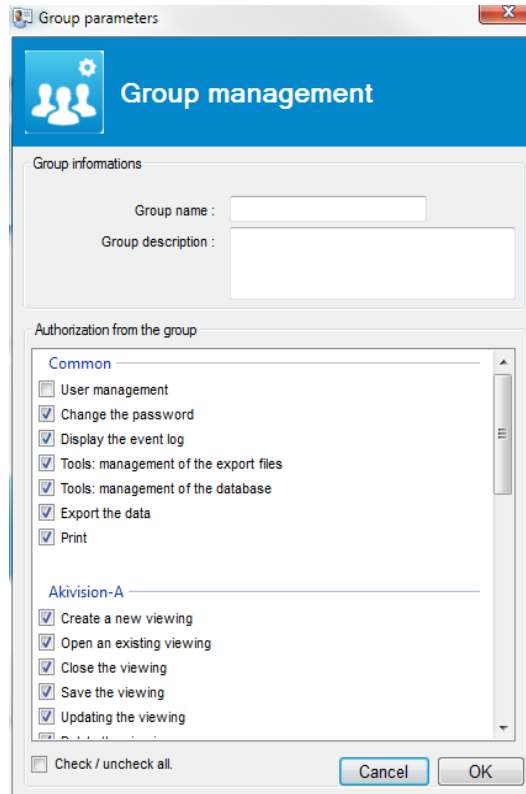
- Click **"Group"** on the window **"Users management"**.
The following window opens.



This window contains two groups created during the Akivision-E installation:

- An **"Admin"** group, which has all the rights, which can be modified but which can not be deleted.
 - A **"Users"** group, which has restricted rights and which can be modified and deleted.
- Click **"New group"**.

The following window opens.



- Assign a name to the group in the field **"Group name"** then a description of the group in the field **"Group description"**.
- Assign the various authorisations that the group will have by ticking the desired boxes.
- Click **OK** to validate the users group creation.

There are three types of authorisations:

- **"Common"**: concern the using of Akivision-A and Akivision-E software.
- **"Akivision-A"**: solely concern the Akivision-A software.
- **"Akivision-E"**: solely concern the Akivision-E software.

Authorisations list:

Common	Akivision-A CFR	
Users management	Create a new viewing	Alarms management
Change the password	Open an existing viewing	Alarm(s) report
Display the events report	Close the viewing	Display/Mask alarms messages
Tools: management of the export files	Save a viewing	Alarms acknowledgement
Tools: database management	Updating the viewing	Tools: Stop/Start service
Export the data	Delete viewing	Tools: service properties
Print	Add device	Comments notes addition
Measure signature	Deletion device	Modify the graphic parameters
Akivison-E CFR	Devices configuration	Modify the synoptics in creation mode
Create a new viewing	Change the communication parameters	
Open an existing viewing	Change base number of data logger	
Close a viewing	Place data logger	
Delete viewing	Stop the acquisition service	
Comments notes addition	Interrupt the acquisition service	
Print	Force wireless data logger unload	
Modify the graphic parameters	Calculated channels management	

14.1.3 Modification and deletion of users and users group

To modify a users group:

- Select the group to modify by clicking on it.
- Click **"Modify"**.
- Carry out the modifications by ticking or unticking the desired authorisations.
- Click **OK** to validate the modifications.

To modify a user:

- Select the user to modify by clicking on it.
- Click **"Modify"**.
- Carry out the desired modifications.
- Click **OK** to validate the modifications.

To delete a users group:

- Select the group to delete by clicking on it.
- Click **"Delete"**.
- Click **OK** to validate the deletion.

To delete a user:

- Select the user to delete by clicking on it.
- Click **"Delete"**.
- Click **OK** to validate the deletion.

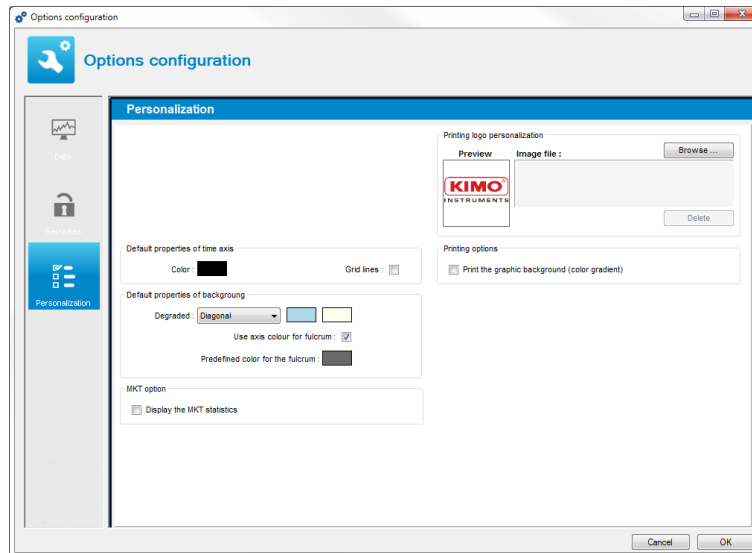
14.2 Personalize the application

This part allows to personalize the curves, the time axis, the background, the logo appearing on the prints and display or not the MKT statistics.



The MKT statistics allow to express in a simplified way the global effect of the temperature variations during the storage or the transport of the perishable goods.

- Click **"Personalization"** on the left side of the options window.
The following window opens.



In the **"Default properties of time axis"** part:

- Click the colour square then select the desired colour.
- Validate with **OK**.
- Tick the box **"Grid lines"** to make appear the grid lines.



In the **"Default properties of background"** part:

- Select the degraded type of colour: diagonal, horizontal or vertical.
- Click the two colour squares then select the desired colours.
- Validate with **OK**.
- Tick the box **"Use the axis colour for the grid lines"** if needed.
- Click the colour square to define a grid lines colour.

In the **"MKT"** part:

- Tick the box **"Display the MKT statistics"** to display the MKT temperature. This temperature allows to express in a simplified way the global effect of the temperature variations during the storage or the transport of the perishable goods.

In the **"Printing logo personalization"** part:

- Click **"Browse"** and select the logo which will appear on the printings.
- Click the image file then on **"Delete"** to delete it.

In the **"Printing options"** part:

- Tick the box to print the graphic background.

AKIVISION CFR meets the requirements of CFR21 standard. This standard is for users who want to control and secure their data acquisition system, its main functions being attributed by rights from groups management.

15.1 Activate the signatures

To activate the signature management:

- Go to the user group management (see page 57 to create groups).
- Tick the **"Measure signature"** box in **"Common"** part of the authorization of the group.
- Close all the windows of the groups management.

15.2 Sign measurements

- Click **"Tools"** in the menu bar then on **"Sign measure"**.

The following window opens:

- Enter the date of the beginning and the date of the end of the required period concerned by the signatures.
- Click **"Validate"**.
The list of the possible period displays.
- Click the period(s) to sign.
- Click **"Sign"** button.
A message opens asking to confirm the action.
- Click **OK**.
- Enter a user name and the corresponding password then click **OK**.
The following window opens.

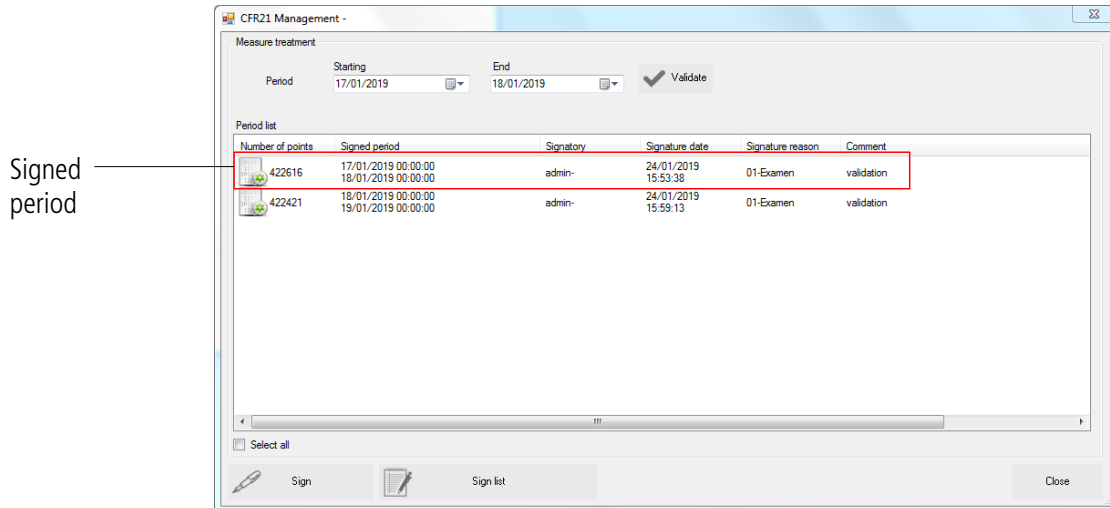
- Select a reason then enter a comment.



The comment is compulsory.

- Click **OK**.

The list of period displays with the signed period.



15.3 Get to signed measurements

To get to signed measurements:

From the **"List of period"** window:

- Click **"List of signatures"** button.

 The list of signed measurements is about the period previously defined at the moment of the measurements signature step.

16.1 Open the acquisition

To open an acquisition in progress with AKIVISION-E, you must beforehand dispose of the acquisition configuration file launched with the AKIVISION-A.

This file is a **Config.AkiA** file and is present on the computer where AKIVISION-A is installed.



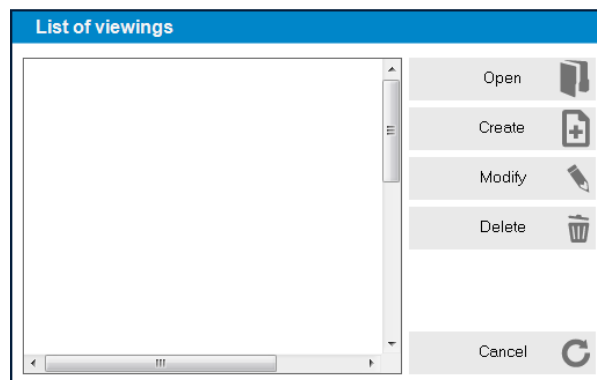
Default location of the file under: C:\Users\Public\Public Documents\KIMO Instruments\AKIVISION3\BASE

- Go to search this config.AkiA file then paste it in a computer location where AKIVISION-E is installed.



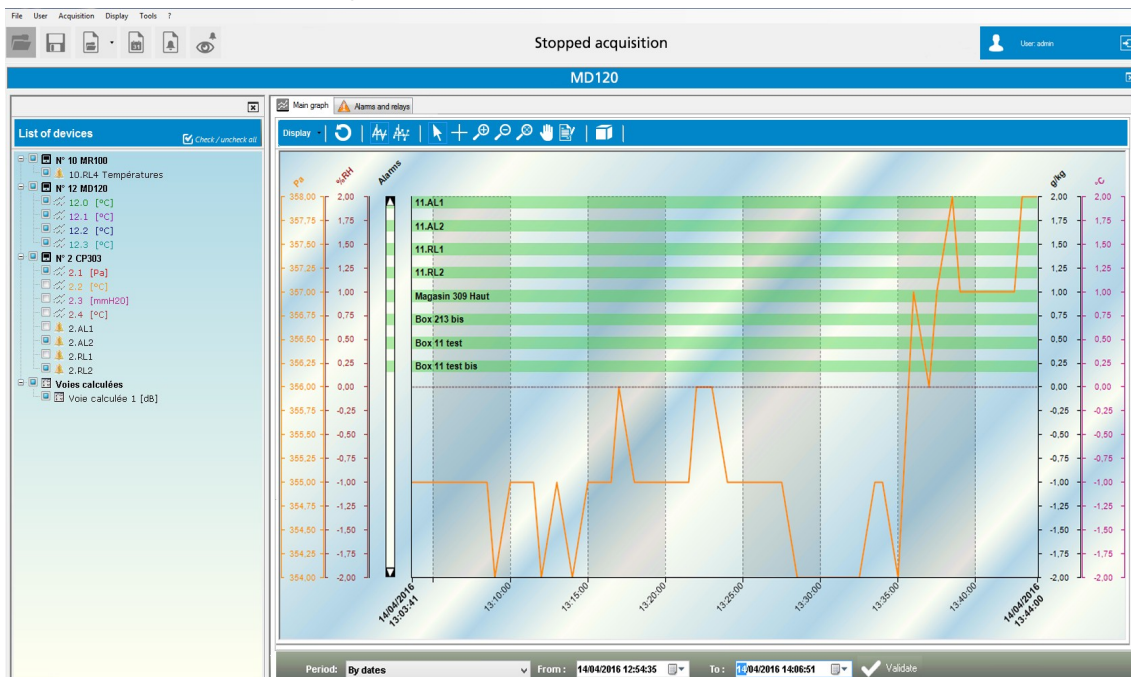
It is recommended to paste the Config.AkiA file at the following location:
C:\Users\Public\Public Documents\KIMO Instruments\AKIVISION3\BASE

- Click **"Open"** on the AKIVISION-E homepage.
The following window opens.



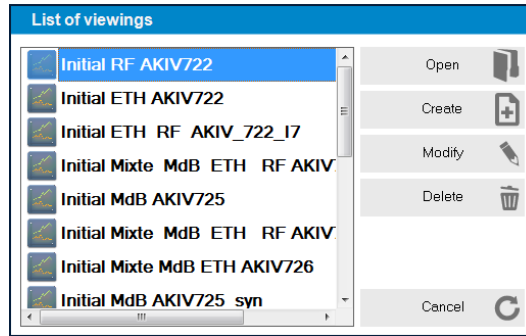
For the first usage, the viewing list is empty.

- Click **"Browse"**.
- Go to the config.AkiA file location.
- Click it then click **"Open"**.
The window opens and the viewing appears:





Once the viewing is opened, it will appear in the viewing list.
To open, double click on it.



16.2 Viewing details

16.2.1 The devices list

All the viewing devices are listed in this panel. The tick boxes allow to choose the channels to display on the graphic and in the table.

16.2.2 Display values: graphic, table and statistic

It is possible to have different displays of values.

- Click **"Display"** then select the type of desired display among:
 - Graphic and table
 - Graphic and statistics
 - Graphic
 - Synoptic
 - Statistics
 - Table



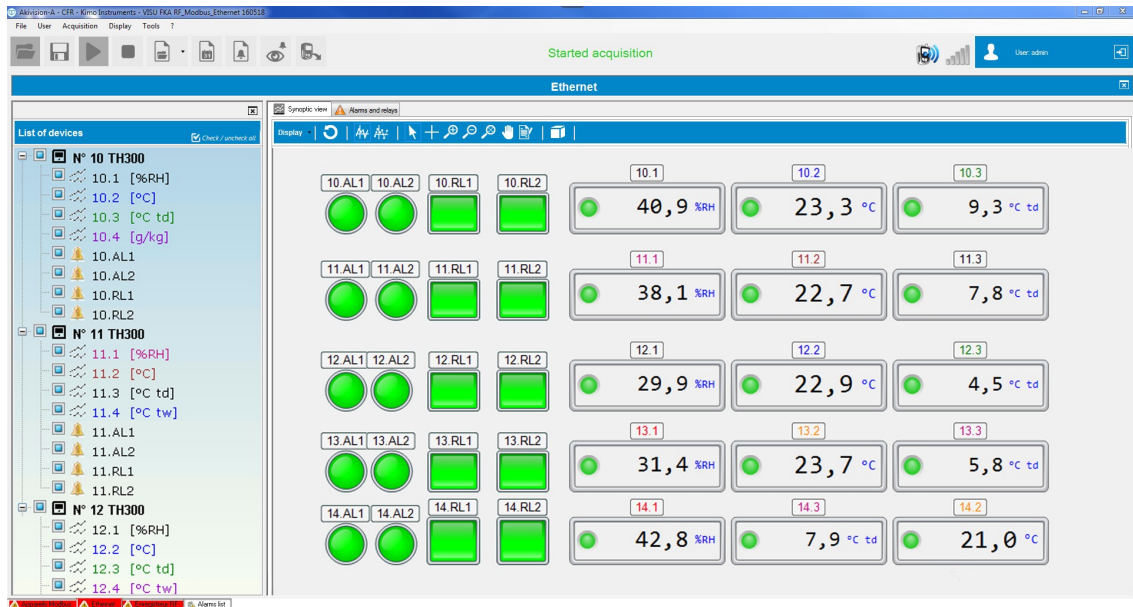
To display the synoptic representation, the Synoptic.SAKiA file must be installed. See page 65.

For the **"Graphic and table"**, **"Graphic and statistics"** and **"Graphic"** displays, a toolbar with different buttons listed below allows to:

	Update or reset the zooms		To zoom in
	Display the curves		To zoom out
	Display the points		Make a dynamic zoom
	Selection pointer		Move the display area
	Cursor of points path		Add a note
	3D display		

- If the **"Graphic and table"** display is selected: the software displays the values in the form of curves and in a table.
- If the **"Graphic and statistics"** display is selected: the software displays the values in the form of curves and the remarkable values (min, max, number of points,...) in the form of tables.
- If the **"Graphic"** display is selected: the software displays solely the values in the form of curve.

16.3 Values display: synoptic representation



The synoptic representation gathers the slaves and the alarms on the same viewing in the form of customizable sketch. Thus, it is possible to locate in real time the measured values and the alarms.

16.3.1 Open the synoptic representation

To open a synoptic representation corresponding to the viewing, it is necessary to dispose beforehand of a synoptic representation file.

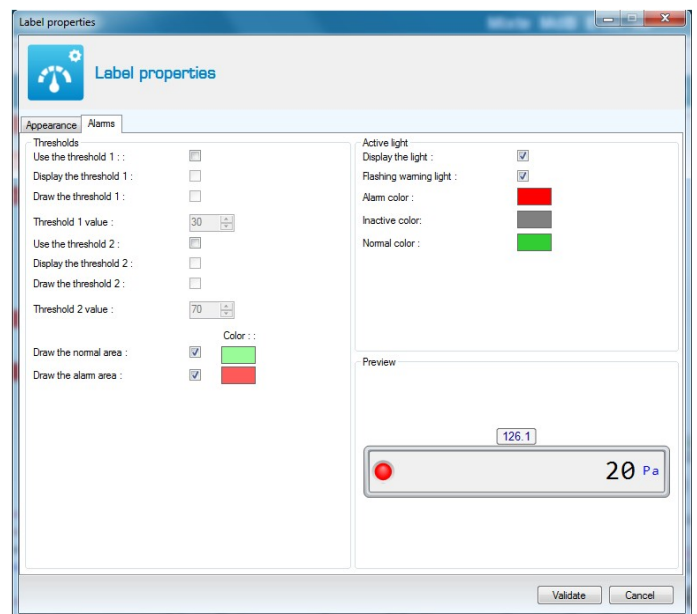
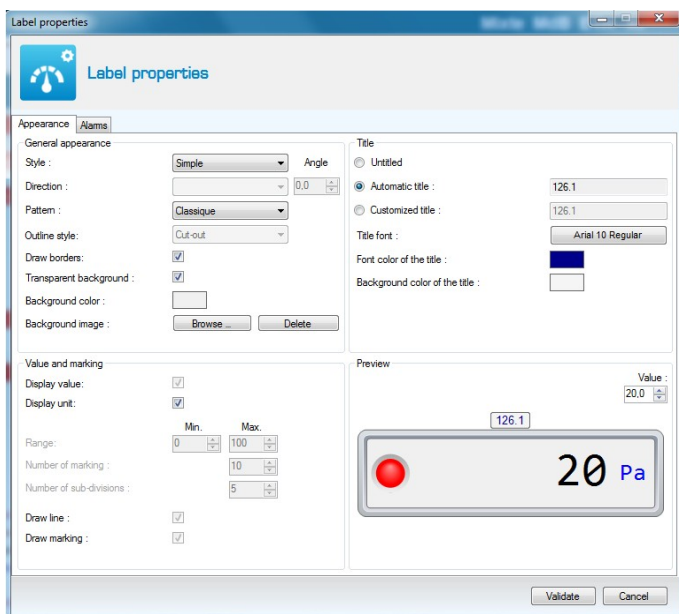
This file is a **Synoptic.SakiA** file.

- Default location: C:\Users\Public\Documents Public\KIMO Instruments\AKIVISION3\BASE
- Copy this Synoptic.SakiA file to the place in which the acquisition configuration file is located (file of Config.AkiA type) on the computer where AKIVISION-E is installed.

16.3.2 Modify the elements of the synoptic representation

It is possible to modify the elements of the synoptic representation:

- Click right on an element then click **"Properties"**.
The following window opens.

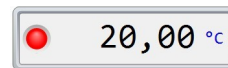
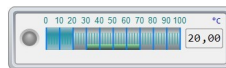


The **"Appearance"** tab allows to modify the element appearance.

The **"Alarm"** tab allows to modify the alarm appearance on the element. It is also possible to display or not the threshold, to modify their values, ...

- Carry out the desired modifications then click **"Validate"**.

Example of representation:



These representations can then be modified: orientation, colours, title, ...

17.1 Create values, graphic, event or alarms report

During the acquisition viewing, it is possible to export:

- The values in the form of table
 - The graphic in the form of image
 - The events in the form of spreadsheet
 - The alarms list in the form of spreadsheet
 - The alarms table in the form of spreadsheet
- Click **"File"** menu.
 - Click **"Export"**.
 - Select the desired export.
 - For the export of values, events, alarms list and alarms table, the application exports the values then display a message asking to open or not the created file.
 - For the graphics export, the application opens a window allowing to select the saving type of the graphic: jpeg, .bmp, .png or .gif.
 - Select the image format then click **"Save"**.

17.2 Create a pdf report

- Click **"File"** then **"Print"**.
 - Select **"Print"** or **"Pdf"**.
- The following window opens.*

- Give a name, enter a location and possible comments.
- Select the type of measurements report: summary and/or detailed report:
 - **"Summary report"**: list of measures and statistics
 - **"Detailed report"**: list of measures and detailed statistics with table
- Tick the **"Graph report"** box and select items to include into the report. This allows to group information on the graph by unit, devices or to export a single graph for all series.
- Tick **"Alarm log report"** and/or **"Event log report"** to include it/them into the report.
- Click **OK** to generate the pdf file.



All the created exports are saved in the following folder:
C:\Users\Public\Documents Publics\KIMO Instruments\AKIVISION3\EXPORT

18.1 Access to the alarms list

- Click **"Access to the alarms list"**.



From this window, it is possible to display:

- The alarms by date
- The last alarms
- The alarms of the last day
- The alarms of the last week
- The alarms of the last month

- Click in the **"Period"** list then select the desired alarms period.
- Define the date if the alarms by date has been selected then click **"Validate"**.

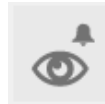
Colour code of the alarms:

- **When the line is red:** the alarm is triggered, the device corresponding is in alarm state.
- **When the line is green:** the alarm is triggered, but the device is no longer in alarm state.

18.2 Acknowledge the alarms

If the alarm hasn't been acknowledged, it is possible to do it from the software:

- Click **"Display the unacknowledged alarms"**.
The following window opens.



List of unacknowledged alarms

☒ Select/deselect all ☐ Today

Date	Alarm name	Device number	Device	Channel	Value	Unit	State	Alarm type	Mode
☒ 27/06/2018 08:48	105.AL2	105				°C Id	ON	Relay & Active light	Rising edge
☒ 27/06/2018 04:35	105.AL1	105				°C	ON	Relay & Active light	Falling edge
☒ 27/06/2018 03:41	109.AL2	109				%RH	ON	Relay & Active light	Rising edge
☒ 27/06/2018 03:15	113.AL3	113				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:14	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:13	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 27/06/2018 01:11	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 27/06/2018 01:10	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 27/06/2018 01:10	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 26/06/2018 20:10	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 20:07	105.AL1	105				°C	OFF	Relay & Active light	Rising edge
☒ 26/06/2018 20:06	105.AL1	105				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 18:57	113.AL3	113				°C	ON	Relay & Active light	Rising edge
☒ 26/06/2018 18:56	113.AL3	113				°C	OFF	Relay & Active light	Rising edge

2270 element(s)

☒ Acknowledge the selected alarms Close

- Tick the alarms to acknowledge.
- Click **"Acknowledge the selected alarms"**.

19 ACCESS TO THE EVENT REPORT

The report is a report which gathers the intervened events during the acquisition:

- Date
- Name
- Category (deletion / launch acquisition, configuration modification...)
- Alarms description (alarm, relay...)
- Acknowledgement
- Comment
- Connected user (if the users management is active)

➤ Click **"Access to the events report"**.
The following window opens:



Events report

Software: **All** Level: **All** Category: **All** Message: User:

Period: **The last events** Starting: 21/06/2018 10:06:45 End: 28/06/2018 10:07:06 ☒ Automatic update of the table

Date	Level	Application	Message	Category	Comment
27/06/2018 19:14:22	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:12:31	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:11:25	Information		Appareillage d'un appareil radio fréquence	Enregistreurs radio fréquence	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:11:25	Information		Appareillage d'un appareil radio fréquence	Enregistreurs radio fréquence	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:10:32	Error		Echec identification backgroundWorker1_DoWork		
27/06/2018 19:10:09	Information		Suppression d'un appareil radio fréquence	Enregistreurs radio fréquence	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:10:00	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:09:41	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:09:25	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:09:12	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 19:07:47	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 19:07:03	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 19:04:48	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 19:03:49	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 19:01:47	Information		Appareil reconfiguré	Configuration	n°115 KTU210-RF EO [17.12.018]
27/06/2018 19:00:29	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 18:59:11	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 18:58:23	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 18:57:19	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 18:54:02	Information		Appareil reconfiguré	Configuration	n°114 KTU210-RF EO [17.12.018]
27/06/2018 18:53:47	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:45	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:53:44	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:52:55	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:52:55	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:52:53	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:52:52	Error		InvalidArgument-La valeur '4' n'est pas valide pour l'index 'Nom du paramètre' index	à System.Windows.Forms.ListViewItem.ListViewSubItem.Collection.get_Item(int32 index)	à InterfaceConfigureur.FRM_configKatock.BTN_valider_Click...
27/06/2018 18:50:49	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]
27/06/2018 18:50:26	Information		Appareil reconfiguré	Configuration	n°113 KTU210-RF EO [17.12.018]

It is possible to filter the events to display by:

- Software: events only concerning the Aktivision-A, Aktivision-E, the Data base or all 3
- Level: event type: All, Main events, Informations, System, Error, Error of level 1, Fatal error
- Period: day, week, month or date
- Category: application Event, Start/Stop application, Application configuration, Identifications, Options, Mails, Motor download, Alarms, Communication
- Message
- User

Software:
 Level:
 Category:
 Message:
 User:

Period:
 Starting:
 End:

☒ Automatic update of the table

To add a comment to an event:

- Double-click in **"Comment"** column to the line of the desired event.
- Enter the comment then press **Enter**.
- It is possible to export the event report in table form (.csv), pdf or directly print it.

