KIMO®

INSTRUMENTS

AKiViSiON

Logiciel d'exploitation-E
Operating software

40 Pa
6.3 m/s
944 m3/h

CP 300

www.kimo.fr

I – Minimum system requirements

I 1 – Minimum configuration required
- Windows 2000, XP and Vista
- Communication Port USB and RS 232
- CD drive
- Internet Explorer 6.0
- RAM 256 Mo
- Free disk space 1Go

I 2 – Software un-installation
Using « Start », « Parameters », « configuration panel », « Add/Delete program », select « AKIVISION E » and follow Windows recommendations to uninstall the application.

I 3 – Application launching
The AKIVISION-E application can be launched by :
- Using the appropriate " [icon] " icon created on your desktop.
or
- Using « Start », « Programmes », « KIMO Instruments » and then click on « AKIVISION-E ».

II – Software installation

1. Software installation.
DO NOT PLUG SECURITY KEY
Insert CD into CD-ROM drive. The installation auto runs. If not, use your browser to launch the « SetupAKIVISIONE.exe » file from the installation CD.

2. Security key installation.
TO PLUG SECURITY KEY,
The installation auto runs. Follows recommendations, click on 'Next' and then on "Finish'".

SECURITY KEY

- Plug the security key **once the software installation is done**.
- In use, the software is checking for the key every 5 minutes, if the key is not connected, the application is aborted.

III – Software presentation

III 1 – Home page
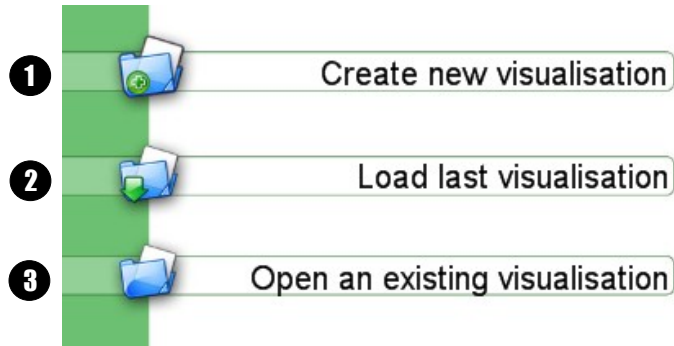
III1-1- Create new visualisation ❶

Click on " " icon to create a new display and follow recommendations further explained in "Create new visualisation" chapter see p12.

III1-2- Load last visualisation ❷

Click on " " icon, and then click on "yes" to validate or click on "No" to cancel.
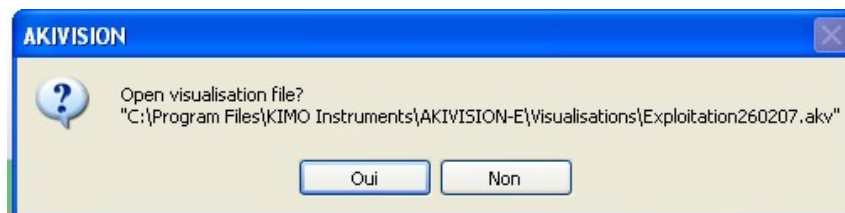
III1-3- Open an existing visualisation ❸

Click on " " icon to open the existing visualisation. A new window appears, select the required visualisation

and then click on "**Open**". Click on "**Cancel**" to return to home page.

III 2 – Interface

- Menus
- Tool bar
- Page title
- List of slaves and alarms.
- Navigation tabs

Data compression

- Display **elements :** On left side of the window, select element displayed by ticking/unticking the related box ✔

III2-1- Tool bar

The tool bar is composed of icons. Icons allow quick access to functions which are also available from menus.

	Create new visualisation
	Load existing visualisation
	Save visualisation
	Print
	Export data
	Event log
	Configuration summary

III2-2- Graphic display

III2-2a- General graph tab

Page tab

Alarms state and digital inputs

Tool bar

Tool bar

Navigation bar

Scales

Period (Time axis)

Graph statistics

Reset

Connect points

Mark points

Selection pointer

Browse cursor

Zoom in

Zoom out

Forward Zoom

Move point

Hide/display statistics

Legend

Theoretically, an infinite number of curves can be displayed, only the performances of the PC will limit the number of displayable curves. The left/right scales and the time axis are reactive zones, i.e. dedicated menus/tools boxes will appear using the right-click function of your wheel mouse.

The "**Statistics**" panel with minimum, maximum, average, standard deviation and the measurement value of each channel can be hidden/displayed by clicking on [icon].

Graphic contextual menu

The graphic contextual menu can be accessed by clicking on the right key of your wheel mouse from the visualisation window.
The menu features the following items :
• Tools : selection of tools (also available in the tool bar).
• View properties : open the view properties window.
• Legend : display or hide the dataset legend.
• Channels : open the view properties window of the displayed channels or the properties of the selected channel
• Scales : opens the property windows of the scale.
• Time axis properties : opens the time axis properties window.

Graphic contextual menu

Tools   Cursor
View properties   Zoom in
Legend   Zoom out
Channels   move pointer
Scales
Time axis properties

« View properties » window

• Select background color
• Select grid color
• Select alarm color
• Hide/visualisation legend
• Title font

View properties

Graph zone
Background colour :
Grid colour :

Legend
☑ Display legend
Font

Display of alarms and digital inputs
Alarm name colour :   Alarm opacity (%) : 40

Alarms and relays
Alarm OFF colour :
Alarm ON colour :

Digital inputs
Input OFF colour :
Input ON colour :

« Channel properties » window

The operator may access to the view properties by : Selecting this sub-menu in the graph menu or by double-clicking on a plotted channel.

- **Curve panel** :
- color, style and width of the curve
- **Limits panel** :
- High and low limit values and percentage of values above and below those limits.
- Limits color if displayed on the graph.
- Hide/visualisation limits on the graph.
  This panel and its function are disabled if no limits are configured.
- **Points panel** :
- Select point type
- Spacing between plotted points
(Ex : spacing = 5, one every five points will be plotted).
- Validate by clicking in "**OK**".

Channel properties
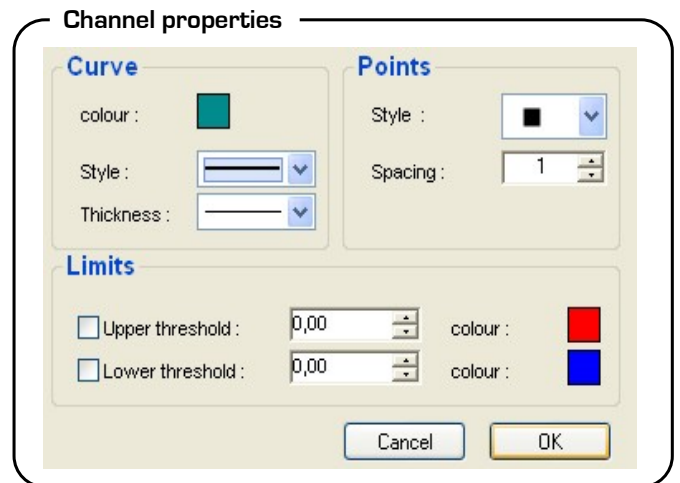
"Scale properties" window

The operator may access the scale properties by : Selecting this sub-menu in the graph menu or by double-clicking on a scale on the graph.
- **Range panel** :
- Input min and max values of scale (the default values correspond to the calculated min and max values for the current graph).
- Reset min and max values – automatic calculation according to chart values.
- **Marking panel** :
- Select between automatic and defined scale.
- The subdivision value indicates the number of markings (no value) between the 2 main markings (with visualisationed values).
Ex : 0.5 steps with 5 subdivisions.
- **Display Panel** :
- Select axis color.
- Enable/disable gridlines visualisation.
- Validate by clicking on "**OK**".

Scale properties
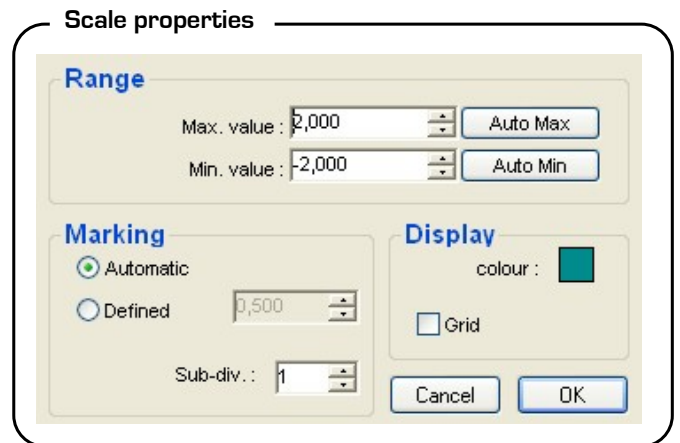
« Time axis properties » window

The operator may access to the view properties by : Selecting this sub-menu in the graph menu or by double-clicking on the time axis on the graph.
- **Period panel** :
- Select between an absolute time representation (date and hour) or a relative representation of the time axis (starts at 0).
- **Interval panel** :
- Select start and end date for the time axis.
- Reset time axis start and stop date. ("First point" and "Last point" keys).
- **Marking panel** :
Select between an automatically calculated marking or a user defined one.
- **Display panel** :
Select axis color.
Enable/disable gridlines visualisation.
- Validate by clicking on "**OK**".

Time axis properties
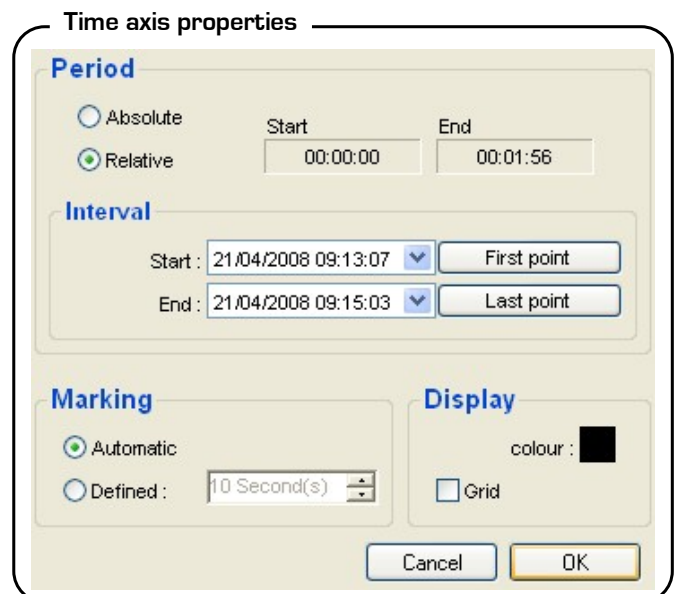
III2-2b- Values arrays

Page tab

Values array

Date	2.1 [°C]	2.2 [%RH]	2.3 [°C td]	2.4 [g/Kg]	7.1 [°C]	7.2 [%RH]	7.3 [°C td]	7.4 [g/Kg]
21/04/2008 09:55:51	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:55:53	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:55:55	22,3	89,2	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:55:57	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:55:59	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:01	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:03	22,3	89,2	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:05	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:07	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:09	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:11	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:13	22,3	89,1	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:15	22,3	89,1	20,5	15,4	22,5	43,8	9,7	7,6
21/04/2008 09:56:17	22,3	89,1	20,5	15,4	22,5	43,8	9,6	7,6
21/04/2008 09:56:19	22,4	89,1	20,5	15,4	22,5	43,8	9,7	7,6
21/04/2008 09:56:21	22,3	89,2	20,5	15,4	22,5	43,7	9,6	7,6
21/04/2008 09:56:23	22,3	89,1	20,5	15,4	22,5	43,8	9,6	7,6
21/04/2008 09:56:25	22,3	89,2	20,5	15,4	22,5	43,8	9,6	7,6
21/04/2008 09:56:27	22,4	89,2	20,5	15,4	22,5	43,8	9,7	7,6

Slave channel

Date and time of measurement points

Measurement points

color code for alarm activated

Statistics

	2.1 [°C]	2.2 [%RH]	2.3 [°C td]	2.4 [g/Kg]	7.1 [°C]	7.2 [%RH]	7.3 [°C td]	7.4 [g/Kg]
Minimum	22,3	89,1	20,5	15,4	22,5	43,6	9,6	7,6
Maximum	22,4	89,2	20,5	15,5	22,6	43,8	9,7	7,6
Average	22,378	89,155	20,50	15,444	22,525	43,745	9,654	7,60
Standard deviation	0,042	0,05	0,00	0,05	0,043	0,052	0,05	0,00

Statistics

Chart array

The chart array respectively features (in rows) : date, time and value of each channel.
The value above the upper alarm limit are listed in red.

Statistics chart

The statistics chart features (for each channel) :
• Minimum value
• Maximum value
• Average value
• Standard deviation

III2-2c- Alarms and relays

Graph

| General graph | Values array | Alarms and relays |

Alarms array

Date	SOFTWARE	2.AL1	2.AL2	2.RL1	2.RL2
21/04/2008 09:55:51	ON	OFF	OFF	OFF	ON
21/04/2008 09:55:53	ON	OFF	OFF	OFF	ON
21/04/2008 09:55:55	ON	OFF	OFF	OFF	ON
21/04/2008 09:55:57	ON	OFF	OFF	OFF	ON

Date and time of measurement points

State of software alarms

State of slave alarms

State of relays

Alarm and relay array

The array respectively features (in rows) the state of :

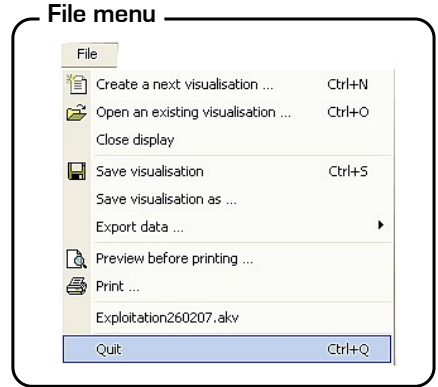• Software alarms,
• Slave alarms,
• Digital inputs,
• Relays.

The alarms and relays activated are listed in red

III2-3- Menus

III2-3a- File

• **New visualisation** : allows the creation of a new visualisation
• **Open a visualisation** : allows the opening of a file located on the available disks.
• **Close** : To quit the software. Before quiting, a new window will appear to save the acquisition.
• **Save / Save as** : allows to save modifications done on the current file.
• **Print preview** : allows to save data between two backups**.**
• **Print**: a opened window allows operator to :
- enter a title which will appear in the title block
- select document content you wish to print
• **Last opened file .**
• **Quit** the software.

File menu

File	
Create a next visualisation ...	Ctrl+N
Open an existing visualisation ...	Ctrl+O
Close display	
Save visualisation	Ctrl+S
Save visualisation as ...	
Export data ...	▶
Preview before printing ...	
Print ...	
Exploitation260207.akv	
Quit	Ctrl+Q

Print

Print ...
Title
September 2008
Select document to print
⦿ Graph and statistics : 2 page(s)
○ Values array : 128 page(s)
○ Alarms array : 63 page(s)
○ Event log : 1 page(s)
○ Configuration summary : 4 page(s)

Cancel   OK

III2-3b- Display

The visualisation menu allows to show :
• **Tool bar**
• **List of elements**
• **Alarm messages**. Once you chose to acknowledge an alarm, a message will come out each time the alarm is activated or deactivated. See "Alarm acknowledgement" p27.
• **Non acknowledged alarm list**. To quit click on "Close". See "Alarm acknowledgement" p27.
• **Event log**. The event log is a report of all happenings which ocurred during data acquisition :

  • Date
  • Source (slave / software)
  • Name
  • Category (deleting / acquisition launching, configuration modification etc...)
  • Alarms description (alarm, relay etc...)
  • Acknowledgement
  • Comment
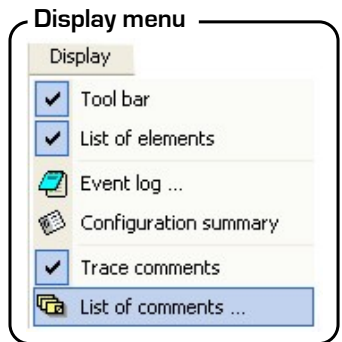
The period allows to show all happenings that ocurred during a period of time. You must select "from" and "to" and enter dates and hours of the required period and validate by clicking on "Refresh". Quit by clicking on "Close".
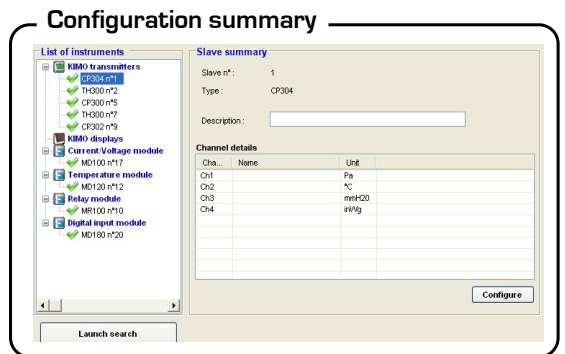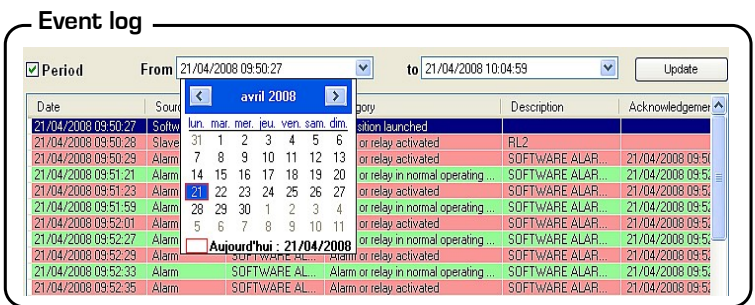
Color code :
• *Blue*, acquisition started, stopped or security key failure and results of alarm emails sending
• *Red*, alarm or relay activated
• *Green*, alarm or relay not activated
• *yellow*, elements reconfigured or no answering slave.
• *Orange*, state modification of digital inputs

• **Configuration summary.**
By clicking on the elements (slaves or alarms), it is possible to see the configuration.
Click on "**Print**" or "**Close**" to close the window.

Display menu

Display	
✓	Tool bar
✓	List of elements
	Event log ...
	Configuration summary
✓	Trace comments
	List of comments ...

Event log

☑ Period   From 21/04/2008 09:50:27 ▼   to 21/04/2008 10:04:59 ▼   Update

Date	Sour...		gory	Description	Acknowledgemen...
21/04/2008 09:50:27	Softw...		sition launched		
21/04/2008 09:50:28	Slave		or relay activated	RL2	
21/04/2008 09:50:29	Alarm		or relay activated	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:51:21	Alarm		or relay in normal operating ...	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:51:23	Alarm		or relay activated	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:51:59	Alarm		or relay in normal operating ...	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:52:01	Alarm		or relay activated	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:52:27	Alarm		or relay in normal operating ...	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:52:29	Alarm	SOFTWARE AL...	Alarm or relay activated	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:52:33	Alarm	SOFTWARE AL...	Alarm or relay in normal operating ...	SOFTWARE ALAR...	21/04/2008 09:5...
21/04/2008 09:52:35	Alarm	SOFTWARE AL...	Alarm or relay activated	SOFTWARE ALAR...	21/04/2008 09:5...

avril 2008
lun.	mar.	mer.	jeu.	ven.	sam.	dim.
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

Aujourd'hui : 21/04/2008

Configuration summary

List of instruments
- KIMO transmitters
  - CP300 n°1
  - TH300 n°2
  - CP300 n°5
  - TH300 n°7
  - CP302 n°9
- KIMO displays
- Current/Voltage module
  - MD100 n°17
- Temperature module
  - MD120 n°12
- Relay module
  - MR100 n°10
- Digital input module
  - MD180 n°20

Slave summary
Slave n° :   1
Type :   CP304
Description :

Channel details
| Cha...	Name	Unit
Ch1		Pa
Ch2		°C
Ch3		mmH20
Ch4		inWg

Configure

Launch search

• **Trace comment.** Displays comments inserted on the curves using the AKIVISION E software. You can print these comments.
• **List of comments.** The list displays comment details (date, page, channel and comment itself). Click on **"Close"** to quit the window.
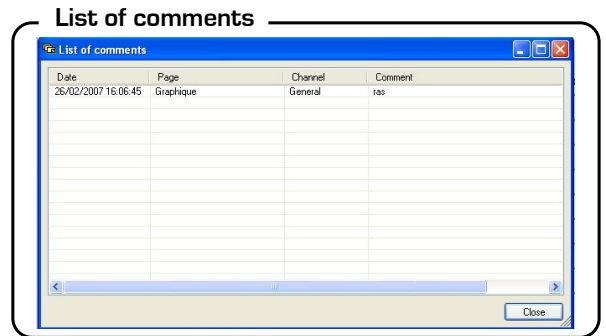
III2-3c- Actions

• **Add calculated channels.** Allows to add on a channel :
  • *Operations or*
  • *Maths functions or*
  • *Predifined calculation function*
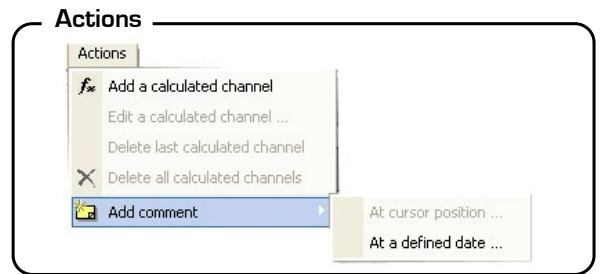
Actions

Operations   **Check syntax**

Formula

Channels

Maths functions

Predefined calculation function

Channels properties

Calculated channels are differentiated according their origin :
• **Calculated channels A :** saved and configured channels during acquisition with AKIVISION-A software.
• **Calculated channels E :** calculated channels added with AKIVISION-E operating software.

⚠️ *Calculated channels during acquisition and saved with AKIVISION-A software (calculated channels A) can not be modified in AKIVISION-E software.*

1. Operations
How to create an operation :

• *Create formula. Click twice on the channel and click twice on the operator (See table below).*
  IE: #001 - #008.
• *Check syntax. If syntax is right go to next step otherwise please correct the formula.*
• *Select channel properties. (Name, units, decimales).*
• Validate by clicking on "**OK**"

Operator table

+, -, *, /	Addition, substraction, multiplication and division.
%	Modulo . Example : 13 % 3 = 1

2. Maths functions

How to create math function:

• **Create formula.** Click twice on math function (see Table of math function below) and click twice on the channel or add appropriated number.

• **Check syntax.** If syntax is right go to next step otherwise please correct the formula.

• **Select channel properties.** (Name, units, decimales).

• Validate by clicking on "**OK**"

abs (<expr>)	Absolute value calculation. ABSV(*NameChannel1*) calculate absolute value of channel Namechannel1 if it is positive, or the opposite otherwise. ABS(V(*NameChannel1*)*10.3+V(*NameChannel2*)) evaluation of expression V(*NameChannel*1)*10.3+V(*NameChannel*2) and equals the absolute value.
Acos (<expr>)	Arc cosinus of expression in rad acos (0) equals 1.5708 acos (-1) equals 3.1416
Asin (<expr>)	Arc sinus of expression in rad asin (1) equals 1.5708 asin (0) equals 3.1416
Atan (<expr>)	Arc tangente of expression in rad atan (1) equals 0.7854 atan (0) equals 0
Ceiling (<expr>)	Whole number greater or equal to expression CEIL (2.9) equals 3 CEIL (-2.9) equals -2
Cosinus (<expr>)	Cosinus of expression in rad cos (1.5708) equals 0 cos (3.1416) equals -1
Exp (<expr>)	Exponential of expression
Floor (<expr>)	Whole number smaller or equal to expression Floor (2.9) equals 2 Floor (-2.9) equals -3
Ln (<expr>)	Napierian Logarithm of expression (expression must be positive)
Log10 (<expr>)	Decimal logarithm of expression Log 100 equals 2. Log(V(Namechannel1)*10.3+V(Namechannel2)) evaluation of expression V(Namechannel1)*10.3+V(Namechannel2) and calulate its decimal logarithm. (expression must be positive).
Pow (<expr> ; <pw>)	Potency raising : <expr> potency raised <pw>. IE : pow (5;3) = 125
Round (<expr>)	Rounded value of operator to the closest whole number. Round (2.4) equals 2 Round (2.6) equals 3
Sin (<expr>)	Sinus of expression in rad Sin (1.5708) equals 1 Sin (3.1416) equals 0
Sqrt (<expr>)	Square root of expression
Tangent (<expr>)	Tangent of expression in rad Tan (0.7854) equals 1 Tan (3.1416) equals 0

3. Predifined calculation function

How to use a predifined calculation function:

• **Tick the box** *"Use predifined calculation function".*
• *Select function (See table below for details).*
• *Select channels corresponding to parameters implicated in calculation*
• *Select channel properties.* Name and decimals, units are automatically selected.
• *Validate* by clicking on "**OK**".

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.

• **Edit a calculated channel**. Select the channel you wish to modify in the "Edit a calculated channel" window, click on "**OK**" to validate. The windows "Functions" will appear, modify and then validate by clicking on "**OK**".
• **Delete last calculated channel**
• **Delete all calculated channels.**

• **Add a comment**

> ➢ **Select a Date :**
> *- Using the browse cursor position*, select the position of the comment.
> *- At a predifined date.*
> ➢ **Corresponding point selection.** According to the date and hour selected, the 2 closest points are suggested by the software.
> ➢ **Type of comment selection.**
>   - *General comment*, symbolized on the graph by a white arrow, and related to all the channels.
>   - *Comment on one channel only*, symbolized on the graph by an arrow with the colour of the channel involved.
> ➢ Click on "**OK**" to validate.
> ➢ The "**Add a comment**" window appears, fill the empty space and validate by clicking on "**OK**". To display comments on the graph, select "**Trace comment**" in the "**Display**" menu.

Add a comment
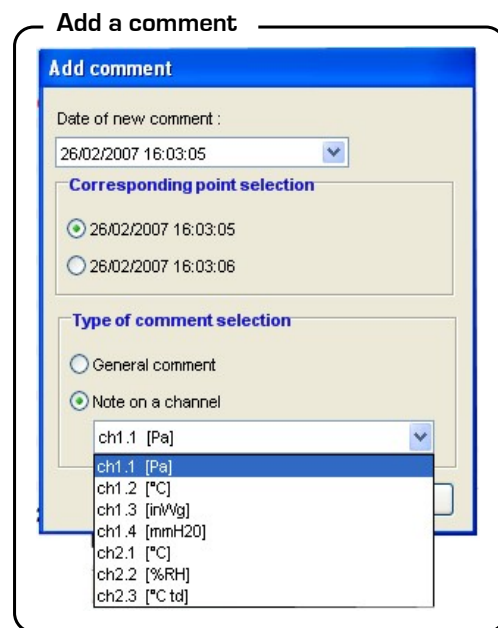
III2-3d- Options

• **Logo for printings. The** "**Customization of the logo used in printings**" window appears , click on "**Browse**" to select the logo localisation. Click on "**OK**" to validate.
• **Select language.** Allows to select french or english version.

**Logo customization**

III2-3e- Help

Help menu reaches :
• **User manual**. The user manual is also available at the end of software installation procedure and from the home page or by pressing F1 on your keyboard.
• **Software version** ('About 'window).

IV – Create new visualisation

From the home page, click on Create new visualisation icon " " or from interface in the "Files" menu click on "New visualisation".

IV 1 – Configuration file selection

- Click on "**Browse**", in order to select the visualisation that contain all data harvested thanks to AKIVISION-A software (Example : Visualisation080207.**ksv**). And then click on "**Open**".
- Click on "**Next**" to validate.
- Click on "**Cancel**" to go back to home page.
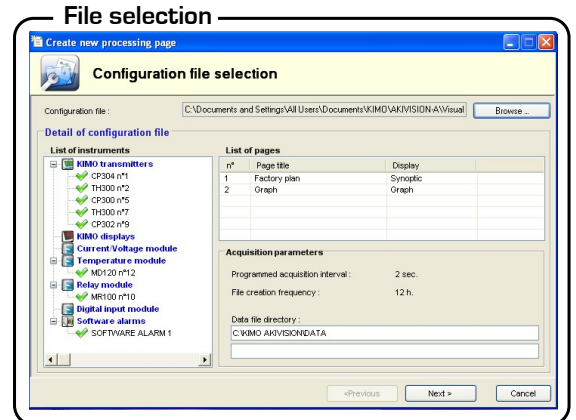
IV 2 – Processing file initialization

2 options are suggested for processing file initialization.

• *Create pages as defined in configuration file*
By selecting this option, the pages loaded have the same configuration than pages configured with AKIVISION-A software.
Nevertheless you can add new pages (See create processing pages).

Processing file initialization
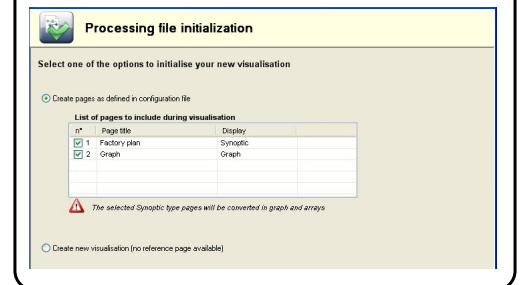
⚠️ **Synoptic visualisations are transformed by the AKIVISION-E software into graphic visualisations containing values and alarms arrays.**

• *Create new visualisation (No reference page available).*
When this option is selected, AKIVISION-E software will not download raw data only.
All pages must be recreated (See Create processing pages).

• Validate by clicking on "**Next**".

IV 3 – Create processing pages

Create new processing page

- To add a page, click on the "**Add page**" key and select elements by ticking the relates boxes ✔
- Name the page by writting on the "**Page name**" zone.
- To delete a page click on "**Delete this page**".
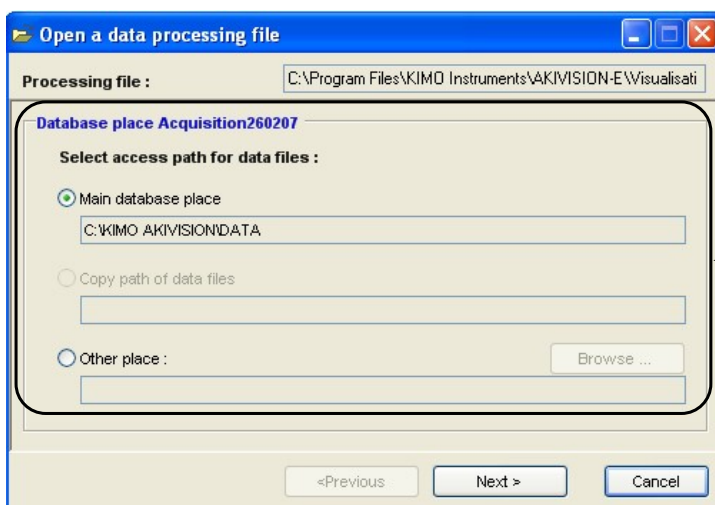- Validate by clicking on "**Terminate**".
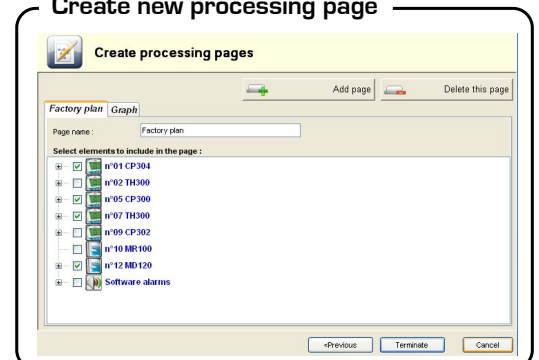
IV 4 – Save processing file

The window "**Save as**" appears, it allows to name processing file and to select file destination. Click on "**Save**".
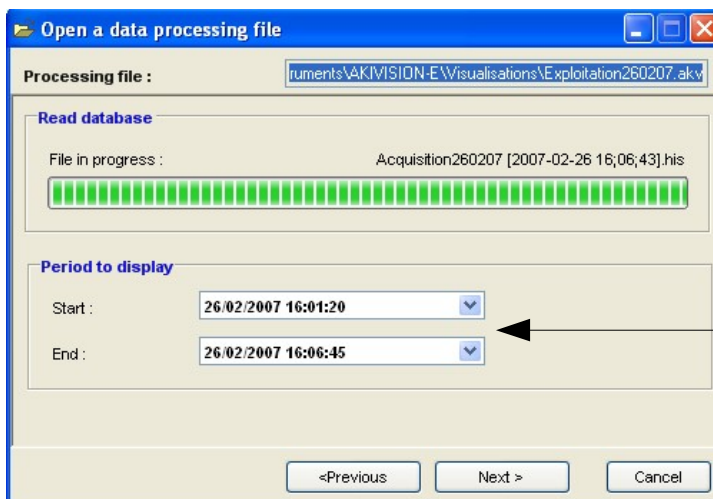
IV 5 – Open a data processing file

Processing file location
(Visualisation created using AKIVISION-E software)

Database location
(Database is the visualisation created using AKIVISION-A software which contains raw data)

• Select the file destination (Visualisation created using AKIVISION-A software).
• Click on "**Next**" to validate.

Processing file location
(Visualisation that will be created using AKIVISION-E software)

Period of time displayed
(Number of selected values)

• Wait until database reading terminates.
• Select the period of time you wish to display : enter the **Start** and the **end** of measuring dataset. It is possible to use calendar tool.
• Click on "**Validate**".
• In few cases, you need to limit the number of downloaded values in order to optimize data processing (see following page).

Total number of selected values

Selection of data compression mode
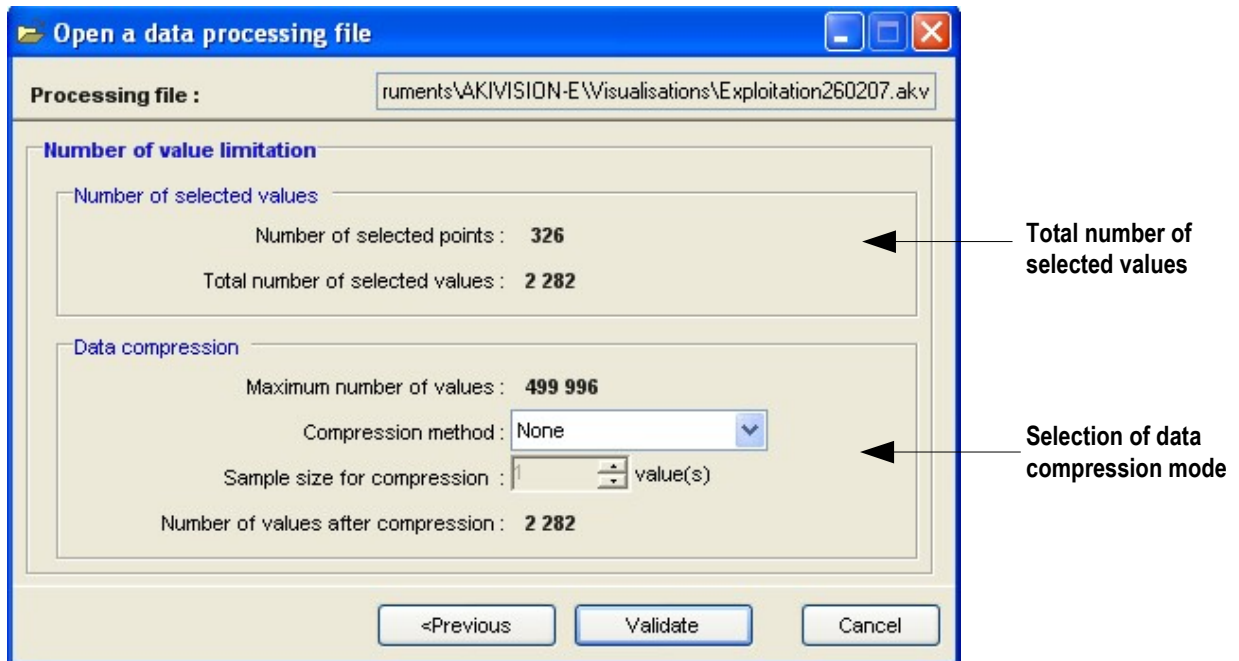
• **Number of measuring point selected**

A measuring point is a record of all channels at a "t" time.

• **Number of selected values**

This number is the number of measuring point multiplied by the number of channels.

• **Maximum number of values**

The maximum is 500 000 values.

• **Compression type**

- *None* : all the point are downloaded (Max. 500 000 values)
- *Directe value* : the first point of each restored sample
- *Minimum value*: the minimum value of the restored sample
- *Maximum value* : the maximum value of the restored sample
- *Average value* : the average value of the restored sample

• **Sample size for compression**

This zone allows to select the number of measuring points used in compression. The minimum sampling size is calculated according to the number of selected values, but it is possible to select the sampling size bigger to reduce the number of displayed values.

• **Number of values restored**

Values restored are the number of measuring points restored after compression. The strating and ending point are included in the restored values.

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