

**CONFIGURATION AND
PROGRAMMING MANUAL**

cod.: 80229B - 06-2022 - ENG

This document supplements the following manuals:
- Instructions and warnings for 2850 and 3850

ATTENTION!!

This manual is intended for technical personnel, who commission the instrument by connecting it to other units, and for service and maintenance personnel.

It is assumed that such persons have adequate technical knowledge, especially in the fields of electronics and automation.

The instrument described in this manual may be operated only by personnel who are trained for their assigned task, in conformity to the instructions for such task and, specifically, to the safety warnings and precautions contained in such instructions.

Thanks to their training and experience, qualified personnel can recognize the risks inherent to the use of these products/systems and are able to avoid possible dangers.



The Customer is obligated to respect trade secrets. Therefore, this manual and its attachments may not be tampered with, changed, reproduced, or transferred to third parties without GEFAN's authorization.

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INITIAL INFORMATION AND PURPOSE OF USE

The Report Utility tool is one of the software packages supplied with the Gefran 2850T and 3850T instruments. This software allows you to interface with the chosen instrument for different purposes, including:

- Saving files generated by the instrument (Production report / Audit Trail / Alarm log). This function (if configured) allows you to delete the files from the target after their back up, thus preventing the tool memory from saturation.
- Reading files from the target or back up folder.
- Viewing files in a table or graph format.
- Production report print out (Recordings / Audit events / Alarms / Graphs)
- Exporting files collected by the instrument in different formats (.csv / .xls / pdf and others)

The tool uses different network accesses to interact with 2850T/3850T. Make sure you provided the access permits to Windows, Firewall and/or the antivirus.

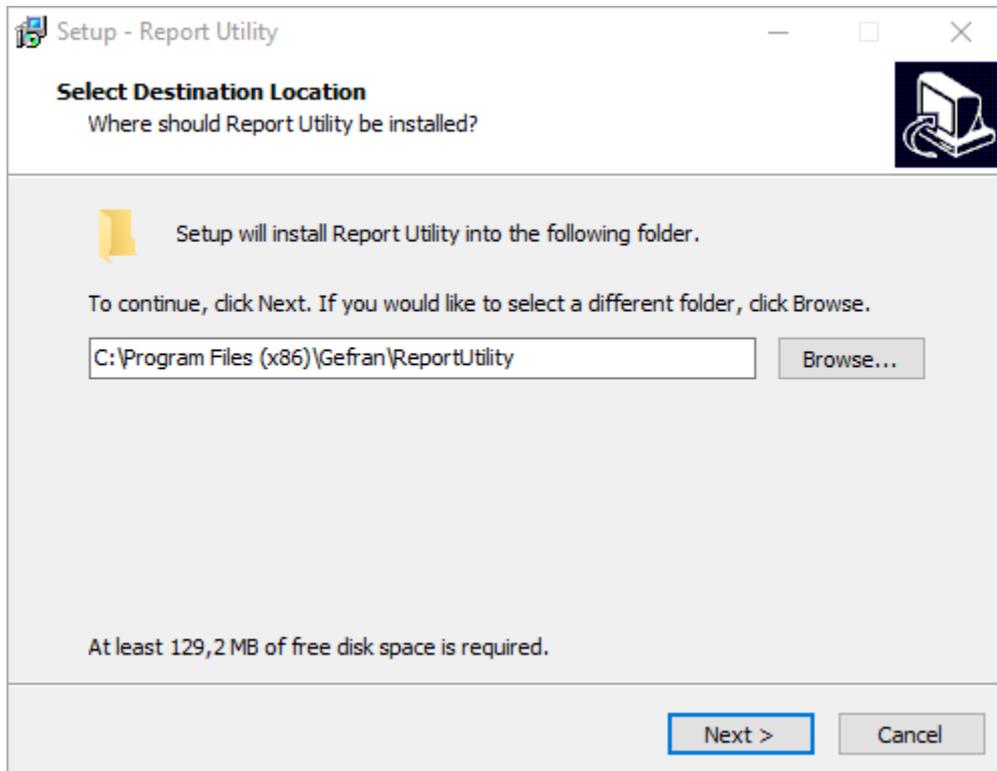
An administrator must be logged into the tool to run some network access operations.

INSTALLATION

INSTALLING THE SOFTWARE

The software is installed using a special installation package that can be downloaded from the website www.gefran.com in the software section of the 2850T and 3850T instruments.

The installation software is available in 3 languages (English, Italian and French) and guides you to install the product through a few simple steps.

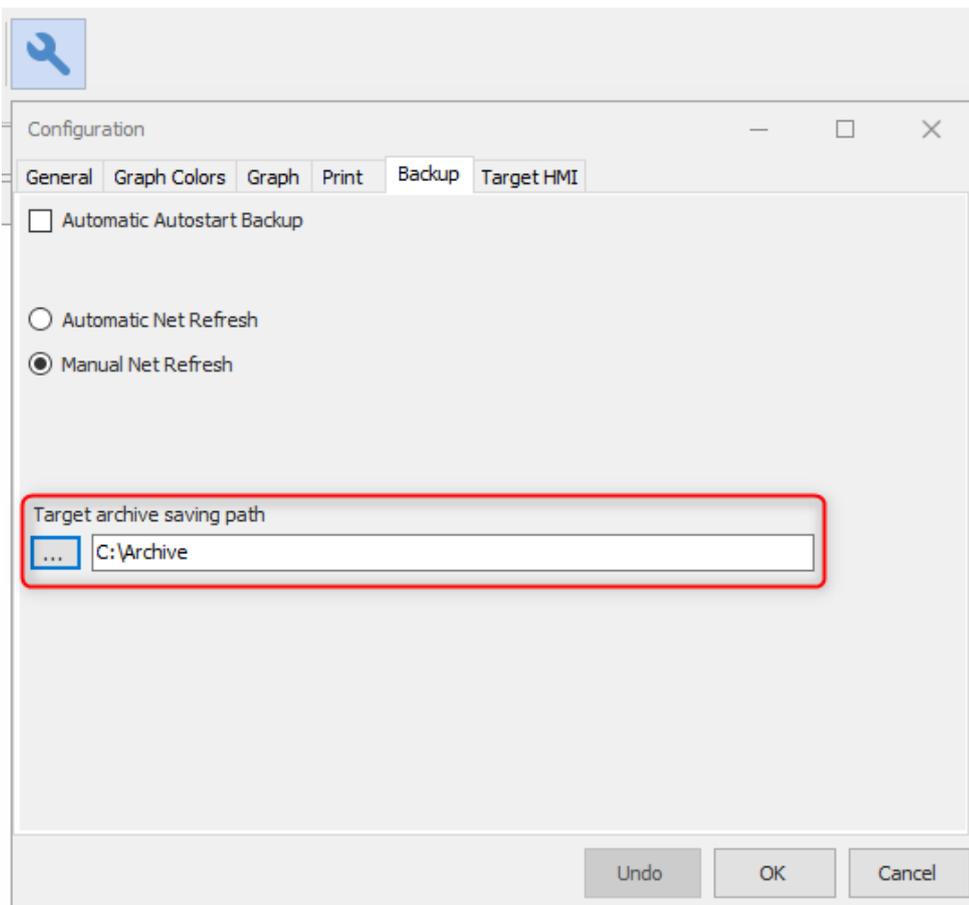


The default destination path is **C:\Program Files (x86)\Gefran\ReportUtility** but it can be freely set by the user during installation.

DEVICE BACKUP ARCHIVE CONFIGURATION

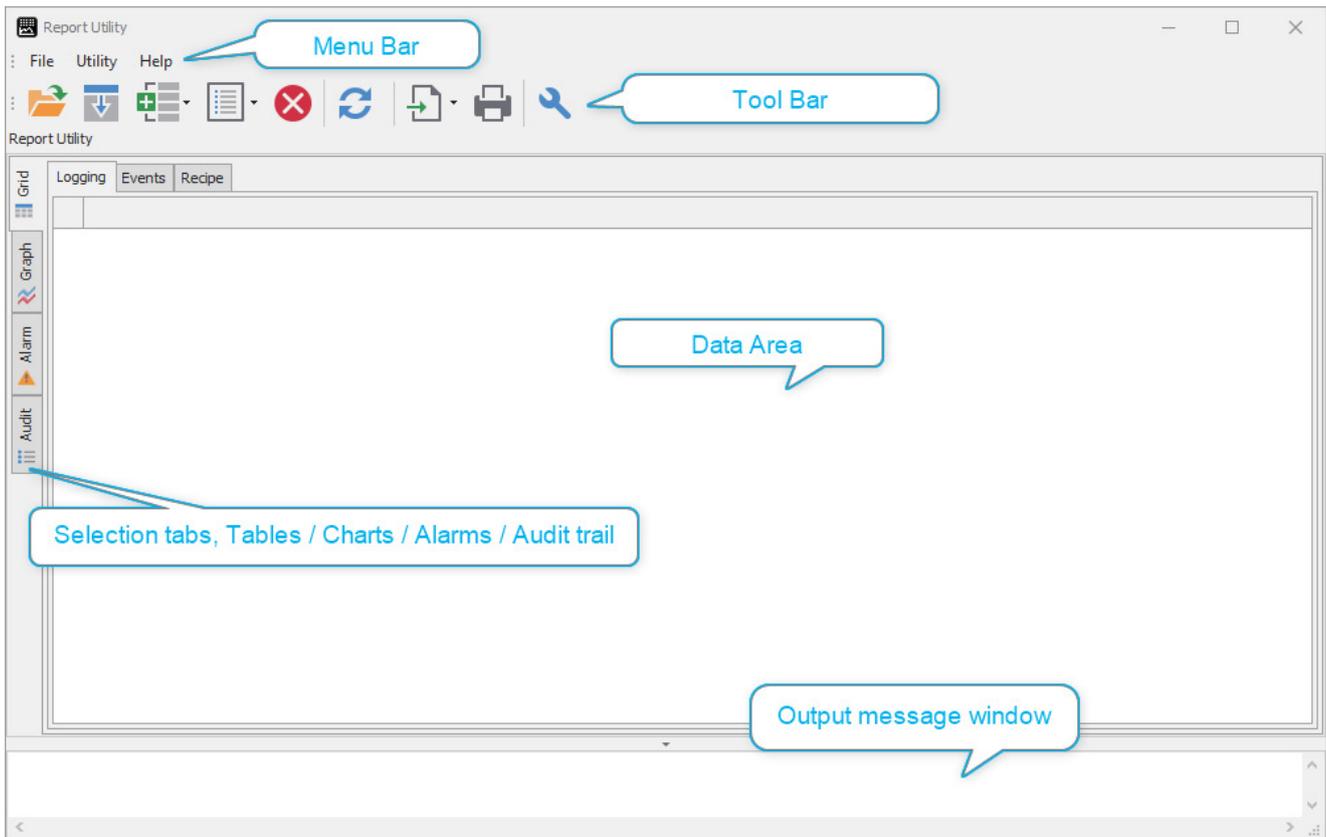
At the end of the installation the software will be automatically configured to download the data coming from the target to folder **C:\Users*currentuser*\AppData\Local\ReportUtility**. However, the user can change the default storage path by accessing

the menu  **Configuration-> Backup -> Target archive saving path:**



As we will see in the paragraph dedicated to data backup from target, the path defined here will contain all the files that you have chosen to download from the target when configuring the devices associated with the tool.

USER INTERFACE

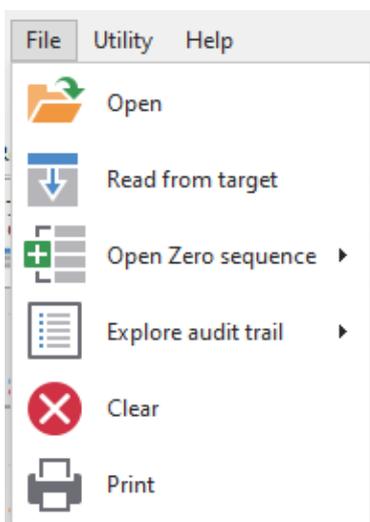


Depending on the type of data displayed (Report / Audit / Alarms) the graphic interface will change to better adapt to the content to be displayed. For example, unnecessary menus and tabs will be hidden from the currently displayed content.

MENU AND TOOLBAR

The menus are grouped into 4 macro-groups. Some items can be accessed from the toolbar.

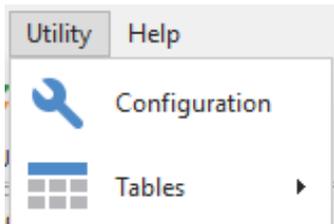
File



The **File** menu allows you to interact with the files:

- **Open:** read and interpret a file report from the PC's back up folder.
- **Read from target:** read and interpret a file in an instrument.
- **Open Zero Sequence:** read and interpret a time period from continuous report files (Zero, as the default name of the file). The submenu allows you to choose whether to do it on a local archive or on the target, as for the reading of the single file.
- **Explore audit trail:** In case of target equipped with CFR21 option, it allows the user to view audit trail events between 2 freely selectable dates.
- **Clear:** it clears the Tool memory, eliminating the data (tables and graphs) from files read.
- **Print:** allows you to print tables and/or graphs by opening the appropriate print window.

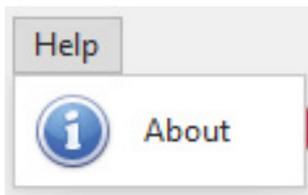
Utility



The **Utility** menu allows you to configure the tool:

- **Configuration:** it allows you to access the options window.
- **Tables:** allows you to edit some table settings

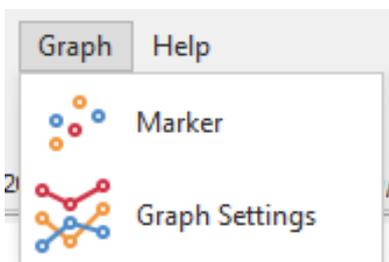
Help



The **Help** menu provides information about the tool:

- **Information:** Provides information on the tool version

Graph



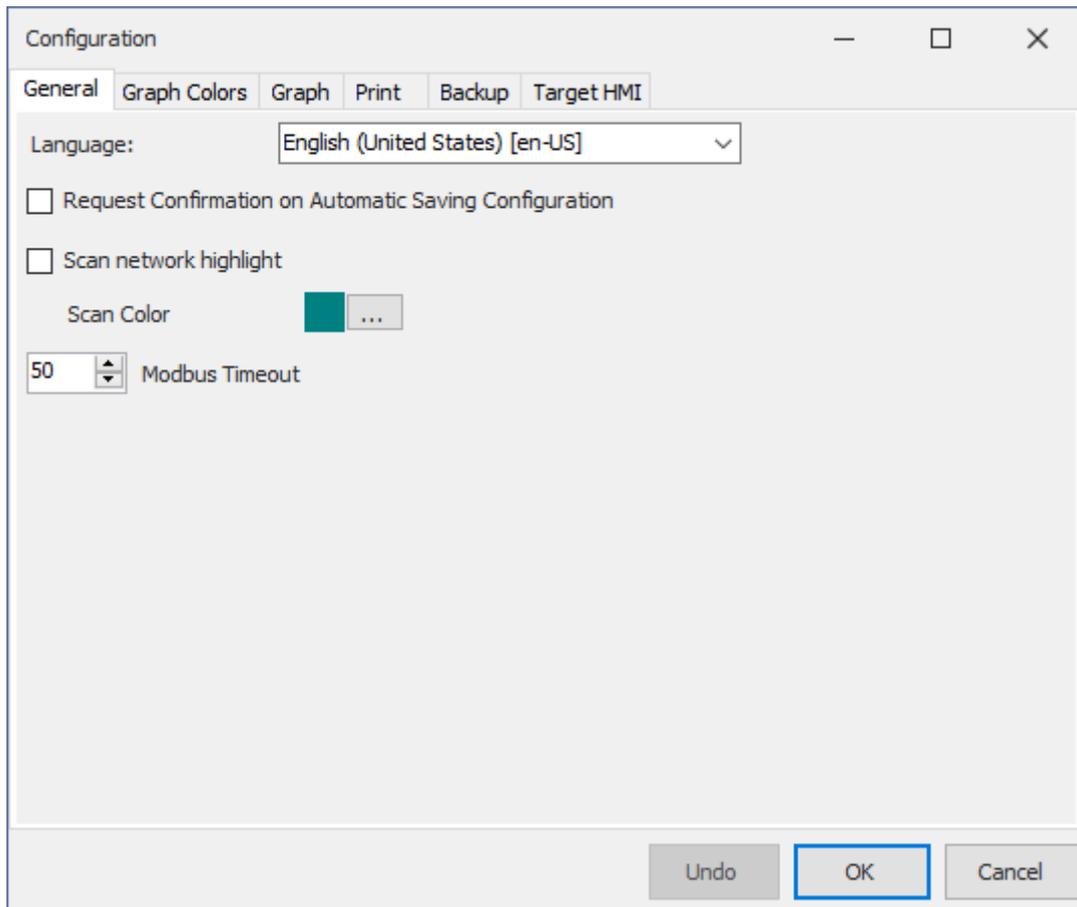
The **Graph** menu allows you to manage the graph

- **Marker:** it marks the real points of the graph
- **Graph settings:** it allows you to change the graph's limits and groups

Configuration



Options are accessed via the *Configuration* button which opens a window that groups the application settings:



Common characteristics

The configuration window consists of 6 different tabs:

- **General**
- **Graph Colors**
- **Graph**
- **Print**
- **Backup**
- **Target HMI**

3 buttons are available:

- **Undo**: it undoes the modifications made, restoring the window data.
- **OK**: it accepts and applies the modifications made and closes the window.
- **Cancel**: it cancels the modifications made, restoring the window data, and closes the window.

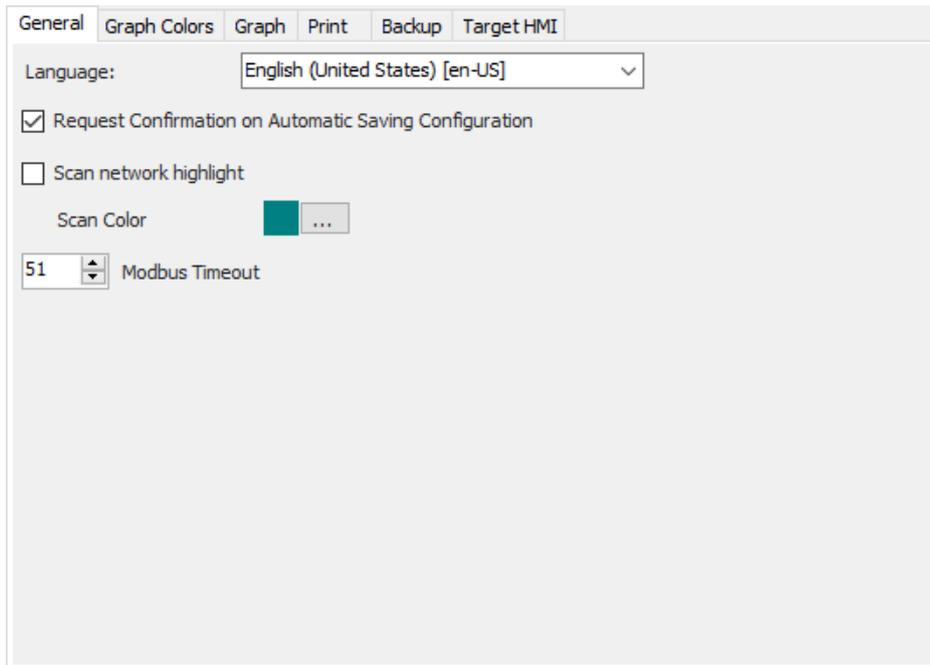


General TAB

The General TAB is dedicated to general information:

- **Language**: it allows the user to select the tool language (among those available). Warning! restart the tool in order to apply the language chosen.
- **Request confirmation on Automatic Saving Configuration**: the changes made and applied must be saved upon closing the tool. This option prevents you from confirming the request for saving and makes this operation automatic and transparent.
- **Scan Network Highlight**: If selected, it highlights the network scan operation (automatic or manual) using the colour that you can select underneath.

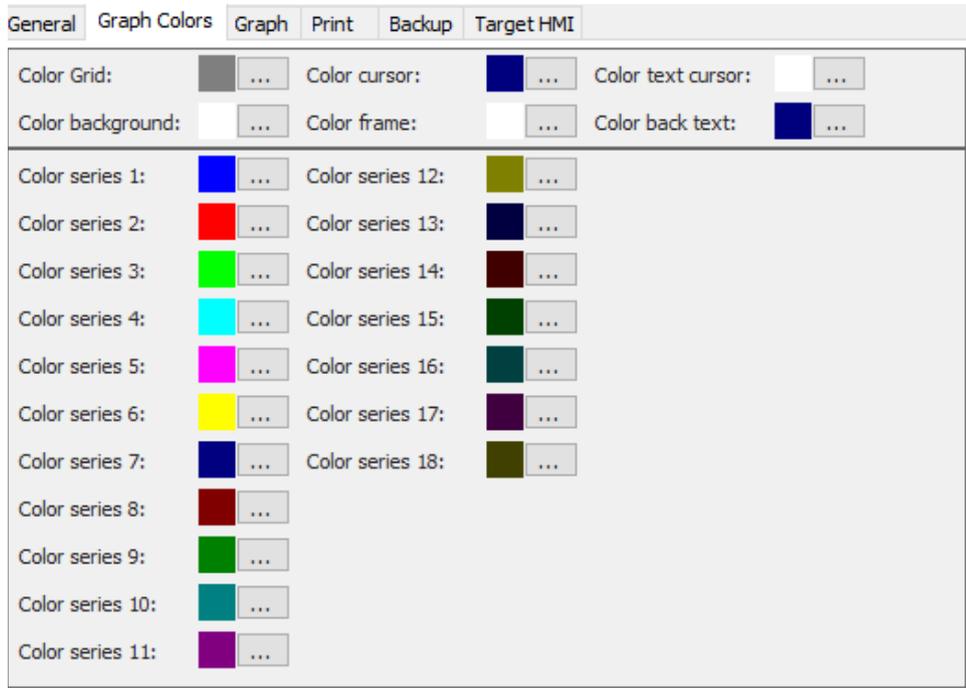
- **Modbus timeout:** the value indicates instrument query timeout used by modbus queries. If necessary, increase this value with respect to the default (50 ms).



Graph Color TAB

The Graph Color Tab is dedicated to setting graph curve colors:

- **Color:** it allows the user to select various graph part colors



Graph TAB

The Graph TAB configures the graph:

- **Enable Start/End date on Graph:** if enabled, it enters the date only at the beginning and end of the graph, deleting it from the time coordinate axis, which shows time-related information only.
- **X axis allow stagger:** if enabled, it staggers the information on two lines to make it easier to read
- **X axis allow hide:** if enabled it allows the graph to hide some labels to avoid overlapping them
- **Axis X allow rotate:** if enabled, it allows you to tilt the labels to allow you to view a greater number of them (which would otherwise be superimposed)
- **Show Argument:** if enabled, it displays the time value of the axis moved by the cursor

The displayed time values are automatically obtained from the graph; however, it is possible to partially customise the display by characterising the pattern. Two customisable patterns are available:

- **AxisX Pattern:** It characterises the format of the labels on the time axis
- **Group Pattern:** It characterises the format of the time data displayed when the ContentShowMode value (see section dedicated to the graph part) is set to Label

Patterns can be customised by setting the available TAGs;

- **# DATE #:** enters the date in yyy/MM/dd format
- **# YEAR #:** enters the year in yyyy format
- **# MONT #:** enters the month in MM format
- **# DAY_#:** enters the day in dd format
- **# TIME #:** enters the time in HH:mm:ss:f format
- **# HOUR #:** enters the hour of the time in HH format
- **# MIN_#:** enters the minutes of the time in mm format
- **# SEC_#:** enters the seconds of the time in ss format
- **# MSEC #:** enters the milliseconds of the time in f format

Tags can be entered in the two patterns

- **manually by writing the tag on the required position**
- **automatically, by preselecting the check box where it must be added (heading only, footer only, both) and pressing the specific button**

There are 2 rows that provide, wherever possible, a preview of the selection.

The screenshot shows the 'Graph TAB' configuration window with the following elements:

- Navigation tabs: General, Graph Colors, Graph, Print, Backup, Target HMI.
- Options section:
 - Enable Start/End date on graph
 - Axis X Allow Stagger
 - Axis X Allow Hide
 - Show Argument
 - Axis X Allow Rotate
- AxisX Pattern section:
 - AxisX Pattern: [text input field]
 - Preview: [checkbox]
- Group Pattern section:
 - Group Pattern: [text input field]
 - Preview: [checkbox]
- Tag selection buttons:
 - #DATE#
 - #YEAR#
 - #MONT#
 - #DAY_#
 - #TIME#
 - #HOUR.#
 - #MIN_#
 - #SEC_#
 - #MSEC#

Print TAB

The Print TAB configures the information to be printed. In turn, it is divided into three sub-tabs, each dedicated to the print settings for:

- **Report file**
- **Alarm log**
- **Audit Trail file**

Configuration

General Graph Colors Graph Print Backup Target HMI

Report File print. Automatic title: Report File print.

Heading text:

Preview:

Footer text:

Alarm History File print. Preview:

#NAME# #NUMB# #DATE# #BATC# #TYPE# #ALIA#

#PROG# #IDTN# #HxRyC# R 1 C 1 #CRLF#

Audit Trail File print. One File

Logging

Events

Recipe

Undo OK Cancel

For each of the three sections, the following options are available:

- **Automatic title:** automatically enters a default title. The title can be customised.
- **Heading text:** it defines what to print as a heading
- **Footer text:** it defines what to print as a footer

For each one of them, you can add fixed writings or information extracted from the file via dedicated tags. The Tags available feature a hashtag (#) at the beginning and the end.

The following TAGs are available for Report files:

- **#NAME#:** Name of the file
- **#NUMB#:** Progressive number of the file
- **#DATE#:** Date and time of the file extracted from the file name
- **#BATC#:** Name of the batch extracted from the file name
- **#TYPE#:** CSV or CRY
- **#PROG#:** Name of the program that has generated the report
- **#IDTN#:** Identification number of the program that has generated the report
- **#HxRyC#:** A cell of the Recipe table (based on the row and column that can be set)
- **#ALIA#:** The name of the target set in the list of managed HMIs
- **#CRLF#:** It adds a new line to the header in order to display it on multiple lines

The following TAGs are available for the Alarm Log files:

- **#NAME#:** Name of the file
- **#DATE#:** The date extracted from the file name
- **#MAC_#:** The MAC information entered in the file
- **#ALIA#:** The name of the target set in the list of managed HMIs
- **#CRLF#:** It adds a new line to the header in order to display it on multiple lines

The following TAGs are available for Audit Trail files:

- **#NAME#**: Name of the file
- **#DAT1#**: The starting date extracted from the file name
- **#DAT2#**: The ending date extracted from the file name
- **#MAC_#**: The MAC information entered in the file
- **#ALIA#**: The name of the target set in the list of managed HMIs
- **#CRLF#**: It adds a new line to the header in order to display it on multiple lines

Tags can be added to the heading or footer

- manually by writing the tag on the required position
- automatically, by preselecting the check box where it must be added (heading only, footer only, both) and pressing the specific button

There are 2 rows that provide, wherever possible, a preview of the selection.

```
#NAME#  
000000002_2022_04_20__17_31_32_reptest[20220421_170449]
```

For Report files only, the print out will contain both the heading and footer, as well as the data extracted from the tables selected from the three check boxes:

- **Logging**: The report table
- **Events**: The table containing the events
- **Recipe**: The table that describes the recipe

Backup TAB

The Backup TAB configures the information about the procedures for the report file backup:

- **Automatic Autostart Backup**: when selected, if the tool is closed with backup on. At the subsequent restart, it will restart with active backup without asking the user to activate it.
- **Automatic/Manual Net Refresh**: it enables or disables the automatic network refresh in order to know whether an instrument can be reached or not.
- **Archive Path**: it configures the PC folder files taken from the instrument will be archived. It will also be the only path from which logging or audit trail time sequences can be opened.

General Graph Colors Graph Print Backup Target HMI

Automatic Autostart Backup

Automatic Net Refresh

Manual Net Refresh

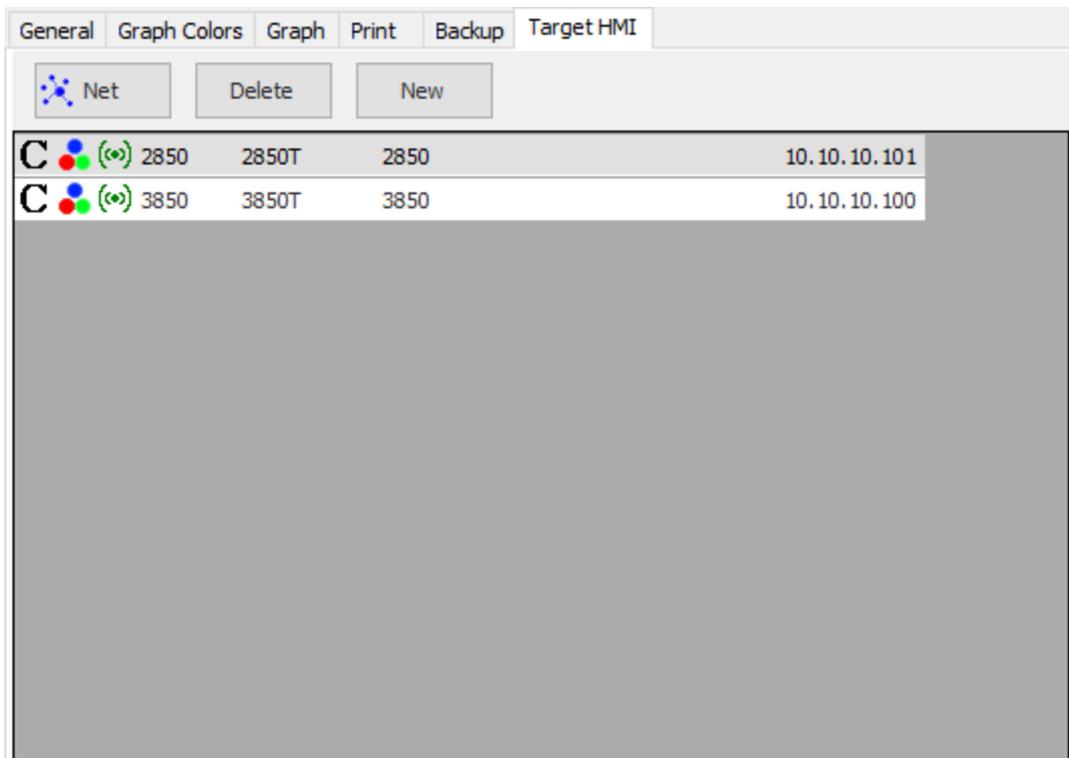
Target archive saving path

... C:\Archive

Target HMI TAB

The Target HMI TAB configures the tools to be backed up/archived. It contains a list of tools managed automatically. For each one of them, it features:

- **backup type icon:** 3 combinations are available (each one of them are enabled/black, disabled/grey)
 - CC** - Cyclic archiving (interval frequency)
 - TT** - Timed archiving (4 settable times)
 - GTG** - Cyclic and timed archiving
- **communication icon:** it indicates whether the communication with the terminal has occurred, so as to be sure to be connected to the network
 - **(∞)** **Online;** communication occurred
 - **(∞)** **Offline;** attempt to communicate but no network found
 - **(∞)** **Not connected;** communication still to occur, it may not be online
- **instrument type:** It indicates whether it is a 2850T or a 3850T
- **instrument name:** It shows the name set on the instrument (it may be empty)
- **mnemonic name (on PC) of the instrument:** it shows the name with which the tool identifies the instrument (the user must choose it upon adding the instrument to the list)
- **IP address:** it is used to query the instrument



Elements can be added or eliminated from the list.

To eliminate an element from the list, select a row (highlighted) and press **Delete**.

You can add an element to the list manually by pressing **New** or automatically by pressing **Net**

The **Net** button provides a list of the elements viewed online.

List	ip	mac	type	nick	Alias
	192.168.105.191	00-02-0A-02-24-B8	2850	2850T	
	192.168.105.185	00-02-0A-02-5C-00	3850	3850T	
✓	10.10.10.100	00-02-0A-02-6D-76	3850	3850T	3850
	192.168.105.197	00-02-0A-02-A8-4F	2850	3850T	
	192.168.105.227	00-02-0A-39-6E-34	3850	3850T	
	192.168.105.192	00-02-0A-39-78-2B	3850	3850T	
✓	10.10.10.101	00-02-0A-39-78-3D	2850	2850T	2850

This list provides the list of 2850T and 3850T instruments available in the subnet where you are.

- **Icon of the managed element:** ✓ it means that the instrument has already been included among those managed.
- **IP address:** of the instrument
- **Mac:** MAC address of the instrument
- **Type:** It indicates whether it is a 2850T or a 3850T
- **Nick:** name of the instrument
- **Alias:** Mnemonic name of the device inserted among those managed

Double click or click the Add button to add an element to the list. Upon adding the element, a setting window appears where you MUST fill in the Alias field, i.e. the one relative to the name that the tool will use to manage it.

In the case you have added the instrument manually, you will be requested to add an IP address and click the Find button to check whether the instrument is in the network.

Target Configuration	
Alias	2850
Nick Name	2850T
MAC Address	00-02-0A-39-78-3D
IP Address	10 10 101
Type	<input checked="" type="radio"/> 2850T <input type="radio"/> 3850T
User	••••
Password	••••••••
<input checked="" type="checkbox"/> Enable Saving	
<input type="checkbox"/> Time	<input checked="" type="checkbox"/> Cycle
<input type="checkbox"/> 5:30	1 Hours
<input type="checkbox"/> 10:40	
<input type="checkbox"/> 15:20	
<input type="checkbox"/> 20:10	
<input checked="" type="checkbox"/> Report files	Copy
<input checked="" type="checkbox"/> History alarm file	Copy
<input checked="" type="checkbox"/> Audit trail files	Copy
OK Cancel	

This window is available in the list of managed instruments and allows you to configure the type of backup. 2 modes are available:

- **Timed:** you can add up to 4 daily times and enable them via its check box
- **Cyclic:** you can add a time frequency (from 1 to 24 hours)

The selection entails the addition to one or both backup lists and the appearance of the C/T/CT symbol. Moreover, a general check box allows you to enable or disable the selection you made.

For each instrument it is possible to configure the type and management mode:

- Report file
- Alarm log
- Audit Trail file

and

- Copy (Backup only, original files remain on the instrument)
- Move (Backup, original files are deleted from the instrument)

The selection of the type of file to be managed will also be shown in the list of managed devices in the form of an icon: a blue dot for report files



a red dot for the alarm log:



A green dot for Audit Trail files:



OPENING A FILE

Regardless of whether you want to open production reports, alarm logs or audit trails, it is always possible to access these files in the same way: by opening them directly from the instrument or by choosing from the files stored on the PC. Let's briefly see the two different ways:

Opening a file from the instrument



Press the "Read from target" button
Wait for the target selection window to open:

Type	IP	Alias
3850	192.168.105.185	Not Managed
3850	10.10.10.100	3850
2850	192.168.105.197	Not Managed
2850	10.10.10.101	2850

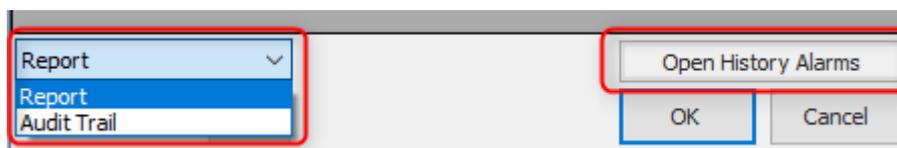
OK Cancel

The list of instruments found online or added to the list to be managed is shown.
The following columns will be displayed in the table:

- **Type:** 2850T or 3850T
- **IP:** IP address: of the instrument
- **Alias:** Name of the instrument as it was added to the list of instruments to be managed or "Not Managed", if found online.

Select the concerned target from the proposed targets and then click the OK button.

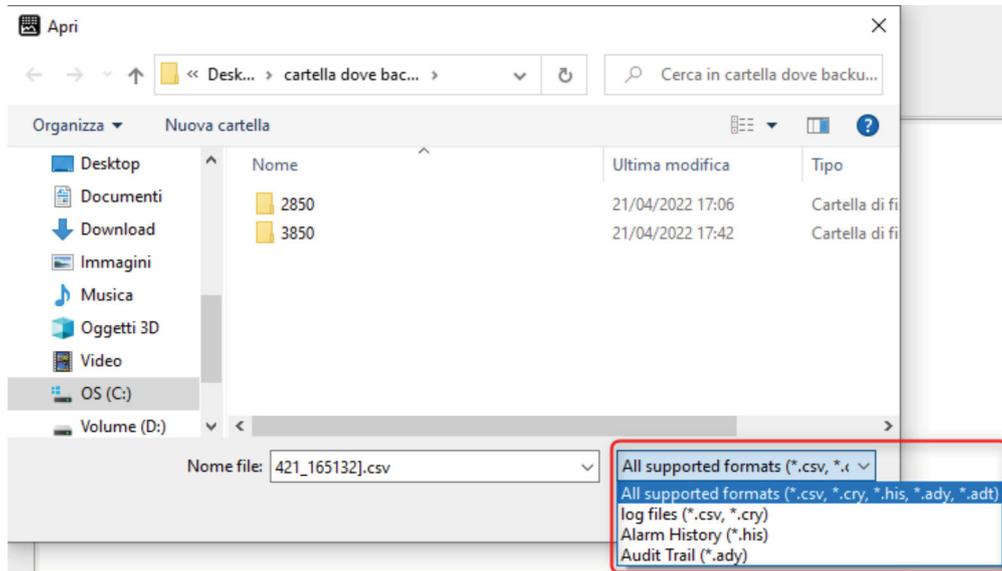
In the next window the user can choose which files to view by choosing between Report/Audit trail through the appropriate drop-down menu or by clicking the button dedicated to the alarm log:



Opening a file from the local archive

If backup is in progress, the software will copy/move the files to a local archive stored on the PC with the frequency set by the user as we will see in the specific paragraph. To subsequently open the individual saved files, simply use Open menu  and select any of the supported files from the appropriate window.

The user can choose the type of file to be viewed inside the file selection window among those supported:



Select the file of interest and click OK to start opening the file

Opening sequences

You can view a time frame or single file for program zero report and audit trail events. This is because both of these types of logs typically occur almost continuously and it may be useful to view only a specific time interval.

These operations can only be launched from special dedicated menus  and the following paragraphs will explain how to use them for program zero and for audit trail respectively.

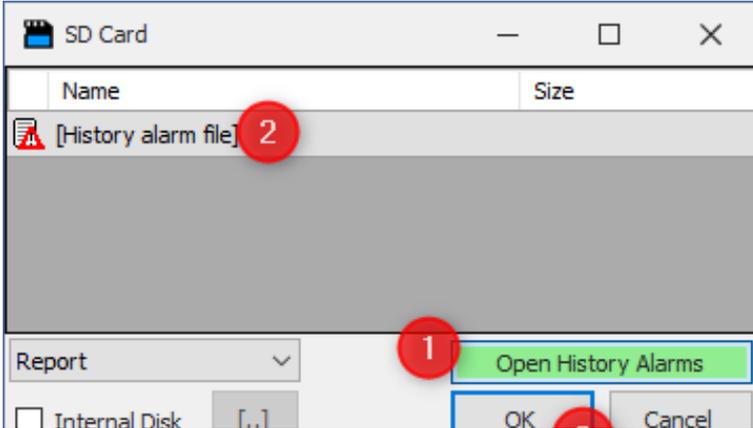
ALARM LOG

A brief description of the alarm log file.

It is a file generated by the instrument containing the history of the alarms that have appeared on the instrument. Each row describes a single alarm, listed in order, specifying the time, variable, alarm status and, possibly (if available in the instrument), a description of the alarm.

The choice of opening a file follows the same methods of opening the report files and allows the user to open the log file

saved on the PC through the open menu  or online on the instrument by simply enabling the specific selection and then pressing the OK key.



After selecting the alarm log through one of the two modes shown, the list of alarms will be shown in the dedicated table:

Alarm	Index	Date	Time	Address	State	Name	Description
	47	22/04/2022	08:29:04	009308	ON	AI_03_RANGE_OUT	
	48	22/04/2022	08:29:04	009309	ON	AI_04_RANGE_OUT	
	49	22/04/2022	17:30:10	009435	ON	POWER	
	50	26/04/2022	08:31:54	009435	OFF - ACK	POWER	
	51	26/04/2022	08:31:55	009307	ON	AI_02_RANGE_OUT	
	52	26/04/2022	08:31:55	009308	ON	AI_03_RANGE_OUT	
	53	26/04/2022	08:31:55	009309	ON	AI_04_RANGE_OUT	
	54	26/04/2022	15:35:24	009435	ON	POWER	
	55	26/04/2022	15:37:04	009435	OFF - ACK	POWER	
	56	26/04/2022	15:37:05	009307	ON	AI_02_RANGE_OUT	
	57	26/04/2022	15:37:05	009308	ON	AI_03_RANGE_OUT	
	58	26/04/2022	15:37:05	009309	ON	AI_04_RANGE_OUT	
	59	26/04/2022	17:31:43	009435	ON	POWER	
	60	27/04/2022	08:25:44	009435	OFF - ACK	POWER	
	61	27/04/2022	08:25:44	009307	ON	AI_02_RANGE_OUT	
	62	27/04/2022	08:25:44	009308	ON	AI_03_RANGE_OUT	
	63	27/04/2022	08:25:44	009309	ON	AI_04_RANGE_OUT	

REPORT FILES (SINGLE OR SEQUENCE)

Let's briefly describe the structure of a **logging** file.

This file is divided into three sections.

1. **Profile layout**: it is a description of the profile that has generated the report. It may also not be included in the report file.
2. **Sampled variables**: collects the set of samplings carried out on the basis of the variables that have been chosen to sample, showing the value and relative sampling time.
3. **List of triggered events**: this is the set of any events triggered during sampling.

Log files are essentially of 2 types:

1. **batch files** (single or multiple): they are the result of the sampling performed during a specific process. The batch file is generated at the start of processing and closed at the end of it. To prevent the file from becoming too large, the target automatically splits the file every 5MB. This is transparent from the user's point of view since opening the first file will always and in any case show the entire process. However, following a backup, it is still possible to open the single sub-file as well.
2. **continuous files**: these are continuous sampling carried out independently from the state of the single processes. To prevent the generation of excessively heavy files, they are divided into separate files at set intervals.

Each file (both batch and continuous) can be opened individually and be interpreted by the tool.

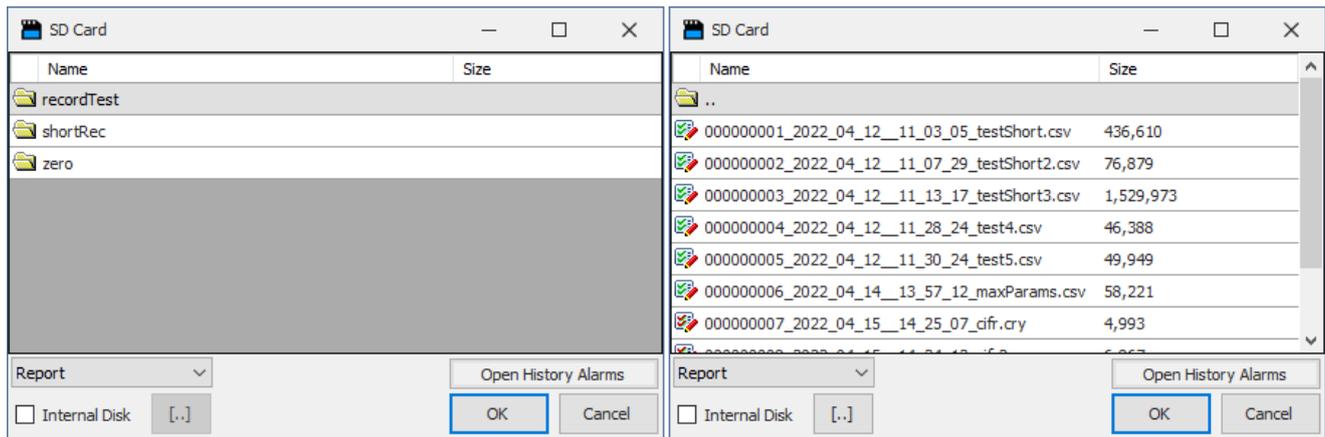
A specific selection is available only for the continuous files. The interval covered by all files is provided and you can position in a specific instance and open a time interval of your choice. This way, you can view the report, which can be split between 2 or more files.

These two modes can be accessed both from the files saved in the PC and from the instrument connected online.

Selecting batch files

Once the instrument has been selected, the processes running on it will be shown.

By opening the folder of one of the processes it will then be possible to access the actual report files to be analysed individually.



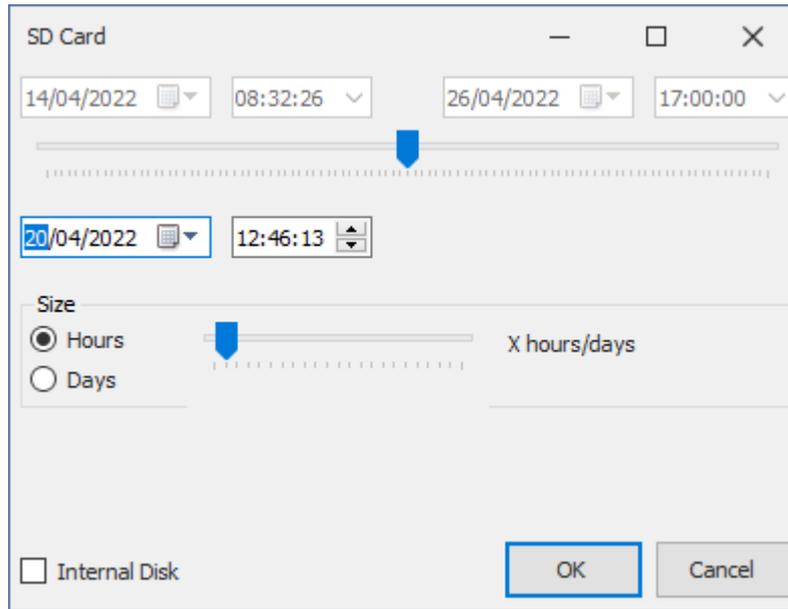
The files available are both decrypted and encrypted (they can be selected from the options window), and can be identified through the following icons:

- decrypted files
- encrypted files

Access is to the disk if the instrument is not provided with an SD card. Otherwise, it is to the SD card if this option is available. In this case, you can choose to access the internal disk.

Selecting the continuous files (Zero)

In the presence of a request for accessing the continuous file, the selection window turns into the following:



Accessing the internal disk or **SD** card follows the same rules as for accessing the batch file.

In this case, the upper area of the window shows the interval covered by the tones of the files found.

You can position on the interval available and decide how many hours or days analyse using the cursor or the date-and-time-selection window.

All the files required to meet the request will be opened and connected to each other. Then an interval equal to or higher than the one requested will be analysed.

Due to their nature, continuous files may be subject to modifications in terms of number and list of variables to be sampled during the instrument lifespan. These files can be opened only if the set of files are coherent (have the same variables). Any incoherent file found in the sequence of files to be analysed will be removed and the analysis will stop on the last valid file.

Once the file has been opened, regardless of whether it is a single file or a sequence, the result is shown in 3 separate tables and in graphic form as we will see in the following paragraphs:

Logging Grid

The logging grid contains all the variables sampled during the recording with relative timestamp:

#	Date	Time	AI_01_PT...	PID_01_S...	AI_02_PT...	PID_02_S...	AI_03_PT...	PID_03_S...	AI_04_PT...	PID_04_S...
1	2017/04/07	08.17.59								
2	2017/04/07	08.18.43	0,0	3,6	0,0	3,6	0,0	3,6	0,0	3,6
3	2017/04/07	08.19.43	0,0	8,6	0,0	8,6	0,0	8,6	0,0	8,6
4	2017/04/07	08.20.43	0,0	13,6	0,0	13,6	0,0	13,6	0,0	13,6
5	2017/04/07	08.21.43	0,0	18,6	0,0	18,6	0,0	18,6	0,0	18,6
6	2017/04/07	08.22.43	0,0	23,6	0,0	23,6	0,0	23,6	0,0	23,6
7	2017/04/07	08.23.43	0,0	28,6	0,0	28,6	0,0	28,6	0,0	28,6
8	2017/04/07	08.24.43	0,0	33,6	0,0	33,6	0,0	33,6	0,0	33,6
9	2017/04/07	08.25.43	0,0	38,6	0,0	38,6	0,0	38,6	0,0	38,6
10	2017/04/07	08.26.43	0,0	43,6	0,0	43,6	0,0	43,6	0,0	43,6
11	2017/04/07	08.27.43	0,0	48,6	0,0	48,6	0,0	48,6	0,0	48,6
12	2017/04/07	08.28.43	0,0	53,6	0,0	53,6	0,0	53,6	0,0	53,6
13	2017/04/07	08.29.43	0,0	58,6	0,0	58,6	0,0	58,6	0,0	58,6
14	2017/04/07	08.30.43	0,0	63,6	0,0	63,6	0,0	63,6	0,0	63,6
15	2017/04/07	08.31.43	0,0	68,6	0,0	68,6	0,0	68,6	0,0	68,6
16	2017/04/07	08.32.43	0,0	73,6	0,0	73,6	0,0	73,6	0,0	73,6
17	2017/04/07	08.33.43	0,0	78,6	0,0	78,6	0,0	78,6	0,0	78,6
18	2017/04/07	08.34.43	0,0	83,6	0,0	83,6	0,0	83,6	0,0	83,6
19	2017/04/07	08.35.43	0,0	88,6	0,0	88,6	0,0	88,6	0,0	88,6
20	2017/04/07	08.36.43	0,0	93,6	0,0	93,6	0,0	93,6	0,0	93,6
21	2017/04/07	08.37.43	0,0	98,6	0,0	98,6	0,0	98,6	0,0	98,6

- #: progressive number
- Date: date of sampling
- Time: time of sampling
- variable n: the heading displays the name of the variable and the unit of measure

The table may contain some rows without samples. These rows refer to the instants (not in synch with the sampling) in which an event was recorded.

Logging Grid

#	Date	Time	Status	Recording	Power	dig in 1
0	2022/04/12	11.30.24.1	Start	Start_Rec		
1	2022/04/12	11.30.28.2				1
2	2022/04/12	11.30.31.7				0
3	2022/04/12	11.30.33.2				1
4	2022/04/12	11.30.35.7				0
5	2022/04/12	11.30.37.2				1
6	2022/04/12	11.30.40.7				0
7	2022/04/12	11.30.43.2	Stop	Hold_Rec-End_Rec		

Likewise, the **logging** grid shows the events recorded in the file.

The minimum recording instant of the events is a tenth of a second. If more than one instance of the same event occurs in the same second, all the values will be shown in sequence divided by the symbol "-".

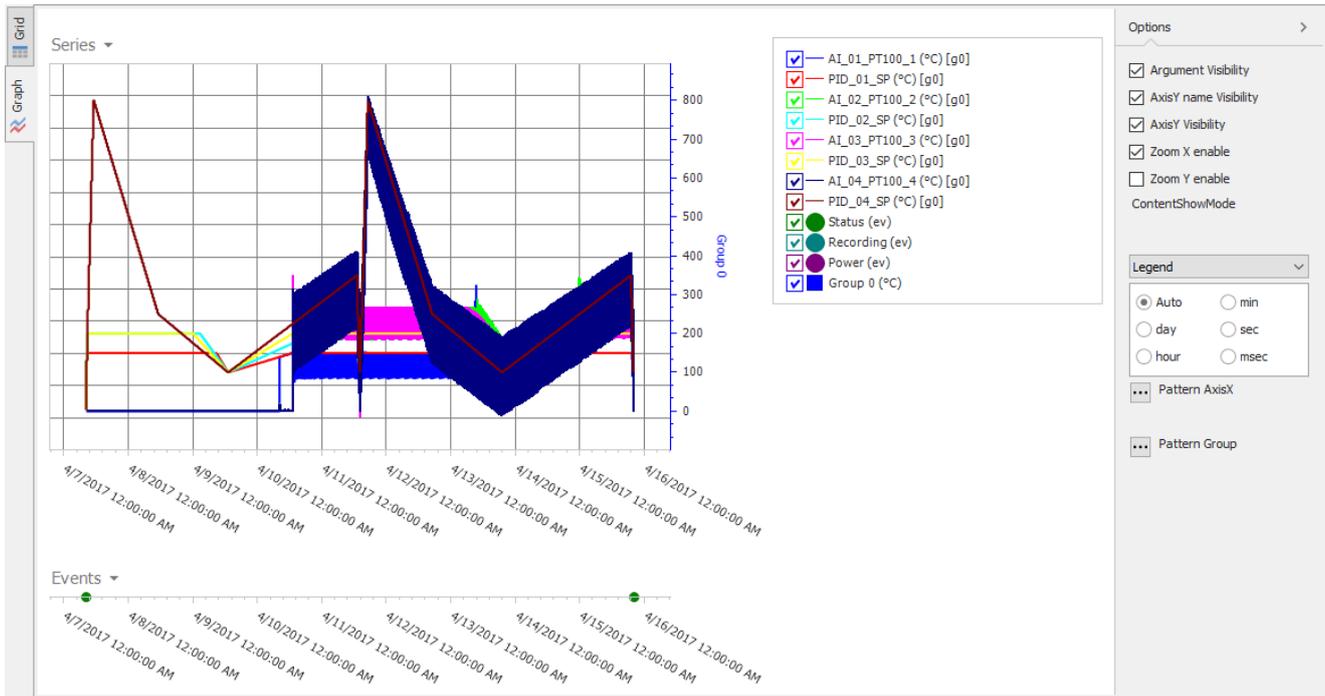
Recipe Grid

Step num.	Step name	DAYS	HOURS	REPETIT...	SP1: AL...	SP2: AL...	SP3: AL...	SP4: AL...	GRAD 1	GRAD 2	GRAD 3	GRAD 4
1	1	0	1	0	300,0	300,0	300,0	300,0	0,0	0,0	0,0	0,0
2	2	0	2	0	500,0	600,0	700,0	800,0	0,0	0,0	0,0	0,0
3	3	1	0	0	400,0	350,0	300,0	250,0	0,0	0,0	0,0	0,0
4	4	1	2	0	100,0	100,0	100,0	100,0	0,0	0,0	0,0	0,0
5	5	2	0	0	200,0	250,0	300,0	350,0	0,0	0,0	0,0	0,0
6	6	0	1	0	100,0	100,0	100,0	100,0	0,0	0,0	0,0	0,0
7												

The recipe grid does not represent the result of a report but, if included in the file, it shows the parameters of the segments of the program running as configured on the instrument.

Graph

Graph of the analysed file.



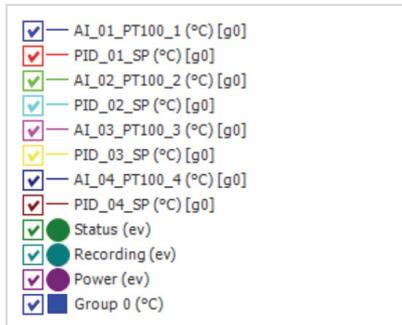
All the sampled variables are shown as a graph. A curve is generated for each one of them.

All the events are shown as a graph. A row of samples is generated for each one of them.

Zooming and scrolling (both horizontally and/or vertically) tools are available.

To use the zoom, simply position the mouse on the graph and use the mouse wheel. The zoom will act (in X or Y) according to the settings made on the options bar; alternatively, it is possible to zoom manually by clicking and, keeping the mouse button clicked, draw the rectangular area you want to enlarge.

A key, with which you can interact, is available on the right side of the graph.



The key shows three macro groups:

- list of sampled variables (group to which they belong and any associated unit of measure)
- list of events occurred (ev)
- list of groups in which the curves were **subdivided** Each item is represented in order

In the event of a cursor on the graph, the legend is enriched with the values of the individual curves.

It is possible to select which curves/events to hide/show by using the various check boxes; it is also possible to hide/show an entire group of variables.

In the event you select the cursor on the graph, the legend adds two new boxes.

The upper one allows you to move the cursor.

The side one displays the value of the single curves/events near the cursor.

Characterisations

Each curve has a colour (the sequence of colours can be selected from the options) and a description string. The string consists of the following:

Variable_Name (unit_of_measure) [gX] example: time07 (P) [g4]

If the unit of measure has not been specified, the relevant section is omitted. gX indicates the group in which the curve has been included.

The curves of the same group are represented graphically in a coherent way to allow you to view the curves and compare them. Each group is maximised on the Y axis.

A generic macro group 0 is added if a group does not characterise a curve.

However, the characterisations can be modified any time by using a specific interface.

Logging	Group		Min - Max	Min - Max Group	Unit
AI_01_PT100_1	0	✓ ↻	0.0 325.2	-16.8 811.0	°C
PID_01_SP	0	✓ ↻	3.6 150.0	-16.8 811.0	°C
AI_02_PT100_2	0	✓ ↻	0.0 342.2	-16.8 811.0	°C
PID_02_SP	0	✓ ↻	3.6 200.0	-16.8 811.0	°C
AI_03_PT100_3	0	✓ ↻	-16.8 350.1	-16.8 811.0	°C
PID_03_SP	0	✓ ↻	3.6 200.0	-16.8 811.0	°C
AI_04_PT100_4	0	✓ ↻	-12.8 811.0	-16.8 811.0	°C
PID_04_SP	0	✓ ↻	3.6 799.7	-16.8 811.0	°C

Chart Type: Line

Each curve is associated with a row.

Each row is defined by

- Colour and name (non-editable)
- Group
- Curve's minimum and maximum values (extracted from the sampled values and not editable)
- Group's minimum and maximum values (which considers the minimum and maximum value among all the curves)
- Unit of measurement (non-editable)
- Box coloured as the first curve of the same group (it can be edited based on the group selection)



Editing a value makes two buttons available:

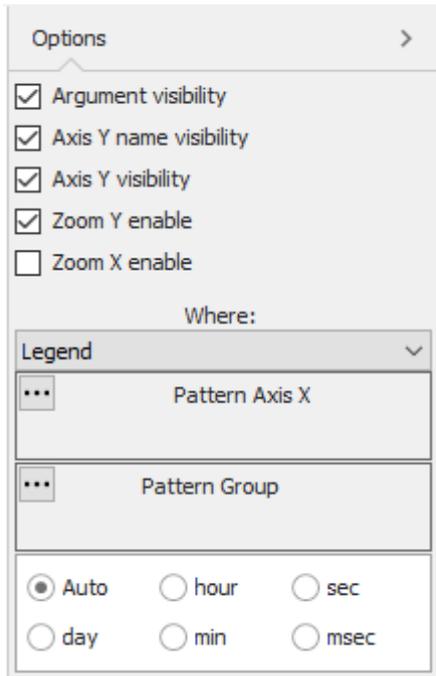
- ✓ Modification accepted and enabled
- ↻ Value reloading not edited

There is a selection box at the bottom of the window where the user can change the type of curve display:

- Points: each point is displayed separate from the others
- Line: each point is connected to the next by a line
- Step: each point retains its value until the next

Options

An option bar is displayed on the side.



The user can select the following in the options:

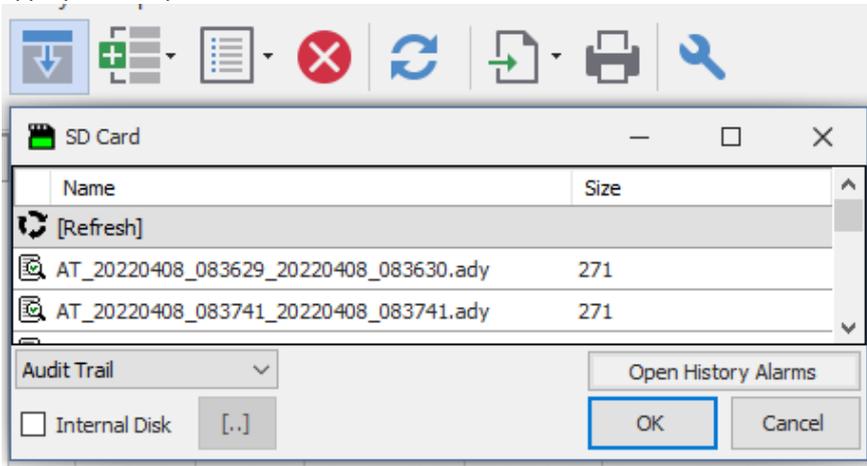
- Where Legend / Label allows you to choose where to display the values of the individual curves; in the side legend or in a window anchored to the cursor
- Argument visibility: allows you to show the time value of the displayed data at the top of the graph (only valid if the selection is set to Legend)
- X axis name visibility: Allows you to choose whether or not to display the name of the individual Y axes
- X axis visibility: Allows you to choose whether or not to display the Y axes
- Zoom Y enable: Enable / Disable Zoom Y
- Zoom X enable: Enable / Disable Zoom Y
- Pattern Axis X: Allows you to customise the values of the X axis (you are referred to the dedicated option in the options window)
- Group Pattern: allows you to customise the values of the group (you are referred to the dedicated option in the options window)
- Auto / Day / Hour / Min / Sec / Msec: allows you to choose the display level of detail of the loaded data.
 - Auto: system default display. The points displayed are filtered and limited according to the zoom and the density of points
 - Day / Hour / Min / Sec / Msec: manual choice of display level of detail

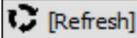
OPENING THE AUDIT TRAIL WITH TARGET CFR21

If the CFR21 option is enabled on the target, it will be possible to view the list of audit trail events found on the latter, filter them, print them and possibly export them in different formats.

Opening a single Audit Trail file

The single audit files can be read on the target using the “Read from target” menu and selecting the Audit Trail item from the appropriate drop-down menu.



To force the generation of the most recent file, double click the button  [Refresh]. Select the file of interest and press OK. The selected audit file will then be shown in the audit table:

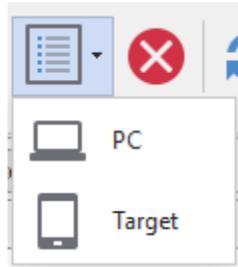
#	Date	Time	User	Group	Description	Old	New	UM	Note
1	4/8/2022	08:36:29	admin[ADMIN]	GENERAL	Audit Trail Blocked by Missing SD Card detectd on 2022/04/08 at 08:34:36				
2	4/8/2022	08:36:29	admin[ADMIN]	GENERAL	SD Card Mounted on 2022/04/08 at 08:36:29				
3	4/8/2022	08:36:30	admin[ADMIN]	ALARMS	Active Alarms adknogled				
4	4/8/2022	08:37:41	admin[ADMIN]	GENERAL	Audit Trail Blocked by Missing SD Card detectd on 2022/04/08 at 08:37:29				
5	4/8/2022	08:37:41	admin[ADMIN]	GENERAL	SD Card Mounted on 2022/04/08 at 08:37:41				
6	4/8/2022	08:37:41	admin[ADMIN]	ALARMS	Active Alarms adknogled				
7	4/8/2022	11:12:11	admin[ADMIN]	PROGRAMS	Segment 1 () duration modified at program test[2]	0	600	s	
8	4/8/2022	11:12:13	admin[ADMIN]	PROGRAMS	Segment 2 added in program test[2]				
9	4/8/2022	11:12:16	admin[ADMIN]	PROGRAMS	Segment 2 () duration modified at program test[2]	0	660	s	
10	4/8/2022	11:12:17	admin[ADMIN]	PROGRAMS	Program test[2] changes saved				
11	4/11/2022	08:27:43	guest[GUEST]	GENERAL	Device Power OFF 2022/04/08 - 17:33:47				
12	4/11/2022	08:27:43	guest[GUEST]	GENERAL	Device Power ON 2022/04/11 - 08:27:43				
13	4/11/2022	08:35:51	guest[GUEST]	USERS	0° attempt admin[ADMIN] failed Login				
14	4/11/2022	08:36:00	guest[GUEST]	USERS	0° attempt admin[ADMIN] failed Login				
15	4/11/2022	08:36:12	guest[GUEST]	USERS	admin[ADMIN] Login				
16	4/11/2022	08:36:29	admin[ADMIN]	PROGRAMS	New program recordTest[3]				
17	4/11/2022	08:53:48	admin[ADMIN]	PROGRAMS	Report sampling time program recordTest[3] changed	0,0	0,1	s	
18	4/11/2022	08:53:51	admin[ADMIN]	PROGRAMS	Added variable AI_01 to report program recordTest[3]				
19	4/11/2022	08:53:54	admin[ADMIN]	PROGRAMS	Added variable AI_02 to report program recordTest[3]				
20	4/11/2022	08:53:57	admin[ADMIN]	PROGRAMS	Added variable AI_03 to report program recordTest[3]				
21	4/11/2022	08:54:00	admin[ADMIN]	PROGRAMS	Added variable AI_04 to report program recordTest[3]				
22	4/11/2022	08:54:06	admin[ADMIN]	PROGRAMS	Added variable AI_05 to report program recordTest[3]				
23	4/11/2022	08:54:09	admin[ADMIN]	PROGRAMS	Added variable AI_06 to report program recordTest[3]				

It is also possible to open a single audit file saved in the archive folder following a backup using the appropriate Open menu  and selecting the audit file (.ady) of interest.

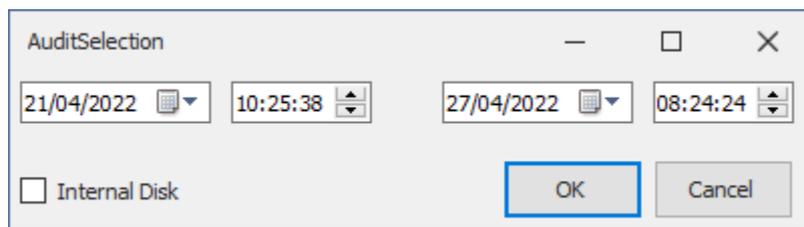
Audi Trail exploration

Just as with logs, it is possible to select a time interval within which all the Audit Trail events generated in the case of a target with CFR 21 option will be shown.

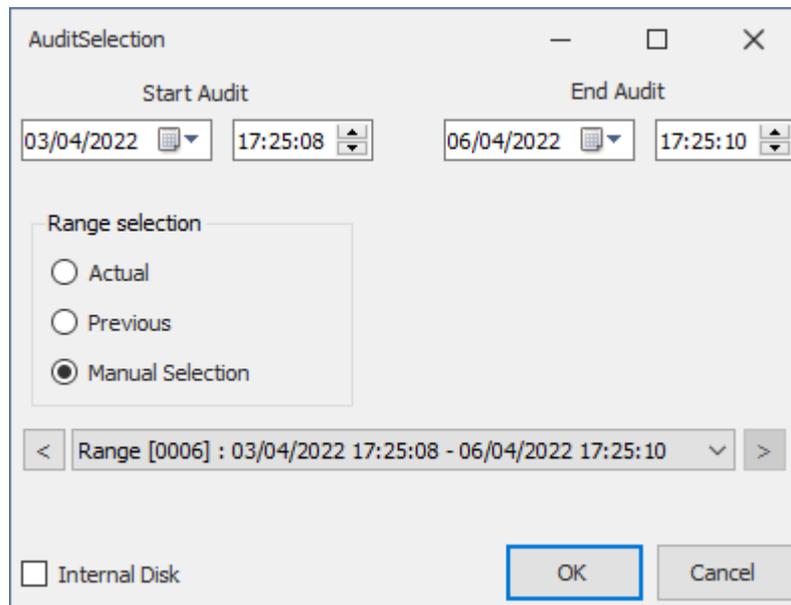
To use the function, simply open the dedicated menu and choose whether to view the audit log on the target or on the PC used for backup:



In both cases the following window will then be shown through which it will be possible to choose the start and end date of monitoring in order to view all the events in that interval:



There are conditions in which the Audit sequence could lose its meaning; especially when the target performs a backward date/time change. In this condition, a new evaluation interval is formed within which each data has a consistent time reference. If there are several intervals on the target or on the PC backup, these will be made accessible by updating the selection window:



This window will show a multiple selection:

- Actual
- Previous
- Manual

By default, the actual item is set as a selection which will allow access to the last valid interval.

In a similar way, it will be possible to directly access the previous interval or, through manual selection, the set of existing intervals will be shown, leaving the user the freedom to select the desired one.

In this last case, the interval is selected through the drop-down menu or through the two arrows [<] [>] placed at the ends of the same.

After selecting the time interval to be displayed, the Audit table will be populated with the list of events that occurred in that interval:

#	Date	Time	User	Group	Description	Old	New	UM	Note
1	4/8/2022	08:36:29	admin[ADMIN]	GENERAL	Audit Trail Blocked by Missing SD Card detectd on 2022/04/08 at 08:34:36				
2	4/8/2022	08:36:29	admin[ADMIN]	GENERAL	SD Card Mounted on 2022/04/08 at 08:36:29				
3	4/8/2022	08:36:30	admin[ADMIN]	ALARMS	Active Alarms acknoledged				
4	4/8/2022	08:37:41	admin[ADMIN]	GENERAL	Audit Trail Blocked by Missing SD Card detectd on 2022/04/08 at 08:37:29				
5	4/8/2022	08:37:41	admin[ADMIN]	GENERAL	SD Card Mounted on 2022/04/08 at 08:37:41				
6	4/8/2022	08:37:41	admin[ADMIN]	ALARMS	Active Alarms acknoledged				
7	4/8/2022	11:12:11	admin[ADMIN]	PROGRAMS	Segment 1 () duration modified at program test[2]	0	600	s	
8	4/8/2022	11:12:13	admin[ADMIN]	PROGRAMS	Segment 2 added in program test[2]				
9	4/8/2022	11:12:16	admin[ADMIN]	PROGRAMS	Segment 2 () duration modified at program test[2]	0	660	s	
10	4/8/2022	11:12:17	admin[ADMIN]	PROGRAMS	Program test[2] changes saved				
11	4/11/2022	08:27:43	guest[GUEST]	GENERAL	Device Power OFF 2022/04/08 - 17:33:47				
12	4/11/2022	08:27:43	guest[GUEST]	GENERAL	Device Power ON 2022/04/11 - 08:27:43				
13	4/11/2022	08:35:51	guest[GUEST]	USERS	0° attempt admin[ADMIN] failed Login				
14	4/11/2022	08:36:00	guest[GUEST]	USERS	0° attempt admin[ADMIN] failed Login				
15	4/11/2022	08:36:12	guest[GUEST]	USERS	admin[ADMIN] Login				
16	4/11/2022	08:36:29	admin[ADMIN]	PROGRAMS	New program recordTest[3]				
17	4/11/2022	08:53:48	admin[ADMIN]	PROGRAMS	Report sampling time program recordTest[3] changed	0,0	0,1	s	
18	4/11/2022	08:53:51	admin[ADMIN]	PROGRAMS	Added variable AI_01 to report program recordTest[3]				
19	4/11/2022	08:53:54	admin[ADMIN]	PROGRAMS	Added variable AI_02 to report program recordTest[3]				
20	4/11/2022	08:53:57	admin[ADMIN]	PROGRAMS	Added variable AI_03 to report program recordTest[3]				
21	4/11/2022	08:54:00	admin[ADMIN]	PROGRAMS	Added variable AI_04 to report program recordTest[3]				
22	4/11/2022	08:54:06	admin[ADMIN]	PROGRAMS	Added variable AI_05 to report program recordTest[3]				
23	4/11/2022	08:54:09	admin[ADMIN]	PROGRAMS	Added variable AI_06 to report program recordTest[3]				

Audit Trail event filters

After opening one or more audit files with the functions just shown, it will be possible to view only some of the events in the table by applying different filters available in the Audit table.

To enable a filter, simply move the mouse over the icon ▼ found in the header of each column.

Depending on the type of data displayed in the column, it will be possible to access different **types** of filters, for example:

- **Filter by date:** you can choose the exact day or time interval to be analysed.
- **Filter by time:** It is possible to choose the exact time or the time interval within the single day to be analysed
- **Filter by User:** You can show all events related to only selected users
- **Filter by event group:** It is possible to show only the events related to a specific group of actions, such as the modification of the programming parameters rather than the PID parameters.
- **Filter by description:** You can filter the events whose description contains part of the searched text
- **Filter by Old/New values:** You can filter all events for a particular value of the modified variable.
- **Filter by unit of measure:** You can filter only the events that affect a specific unit of measure
- **Filter by notes:** It is possible to only display events whose note added by the operator contains certain text.

Any active filter on one column can be combined with other active filters on another column in order to fully customise the viewing experience.

The series of filters applied will be shown at the bottom of the table and will be customisable at any time:



In the image above as an example we have filtered the table so that it only shows the events that occurred on 14/04/2022 by the admin user.

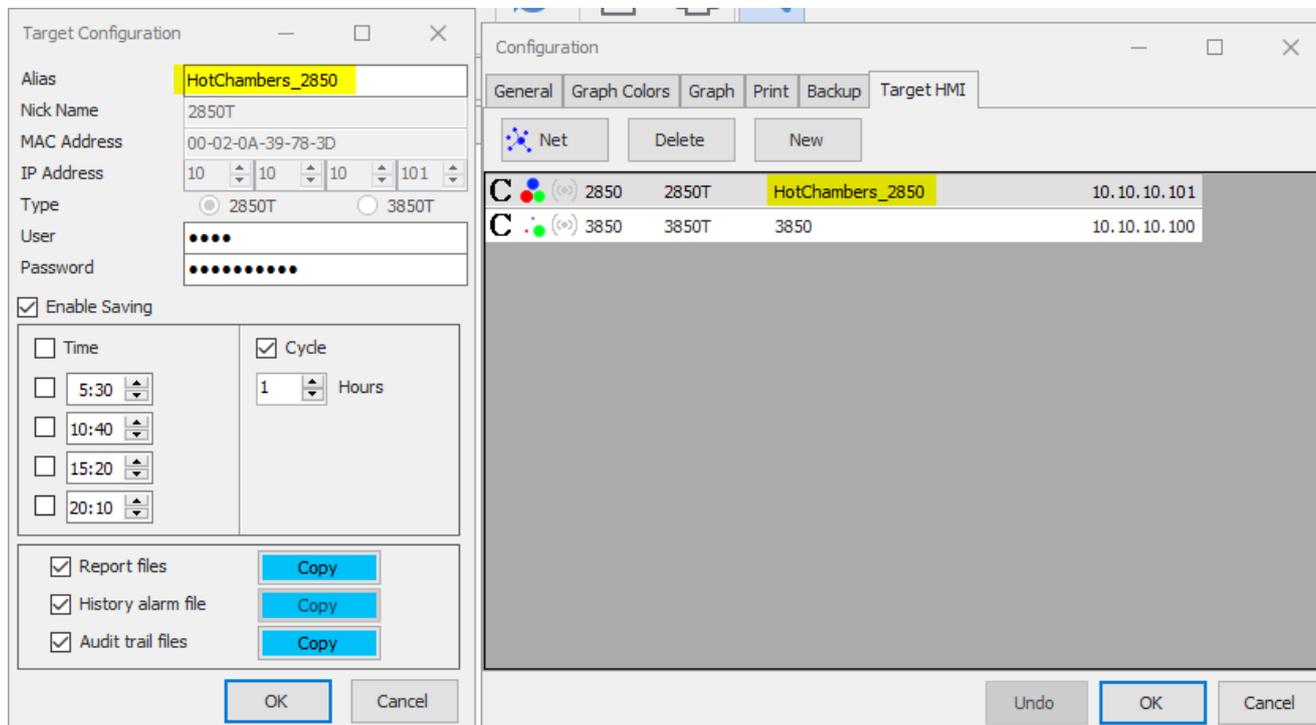
After applying a filter, it will be possible to start printing or exporting (for example to .xls) only the data currently displayed in the table.

ARCHIVING/BACKUP

The Report Utility tool allows you to periodically store the reporting data present on the instrument for the purpose of backup or periodic cleaning of the device memory.

Archive format

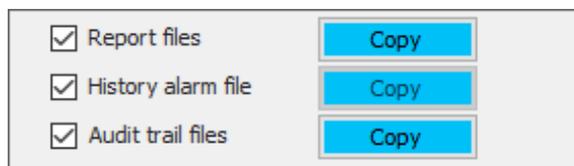
The archive is divided into subfolders, one for each tool managed. As an example, let's consider a configuration similar to the following image:



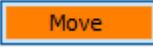
As you can see from the image, our target has alias HotChambers_2850; this name will be used as the name of the folder that will contain all the data downloaded from the configured target. In cascade, this folder will contain several sub-folders each with the name of one of the created batches. Each batch folder will then contain several folders that will correspond to the days the process was started.

Files available for Backup

In the case of report files and audit Trail events, the tool connects to the SD card, if set and present; otherwise, it will connect to the internal disk. For the alarm log, on the other hand, it accesses the internal disk only. It is possible to choose which elements to save by using the appropriate check box:

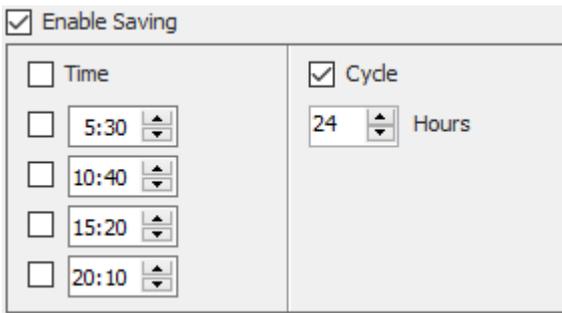


With check box enabled, the related files will be copied or moved to the path specified in the archive settings. You may enable file deletion from the target.

To enable this, simply click (if enabled) on the 'Copy' button  so that it becomes 'Move' . The file is deleted from the target immediately after its back up. In the case of report files, if the SD makes the copy, any similar file found on the internal disk will be deleted. All other files on the internal disk will be ignored.

It is also possible to schedule the backup to repeat it periodically, for example starting it at a certain time of day or cyclically every few hours.

To do this, simply use the appropriate section as shown in the image below:

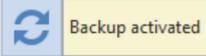


The image shows a configuration window titled "Enable Saving". At the top, there is a checked checkbox labeled "Enable Saving". Below this, the window is divided into two columns. The left column is titled "Time" and contains five unchecked checkboxes, each followed by a time selection box: 5:30, 10:40, 15:20, and 20:10. The right column is titled "Cycle" and contains a checked checkbox labeled "Cycle". Below the "Cycle" checkbox is a dropdown menu showing "24" and the word "Hours".

In this case, for example, we have chosen to perform the backup on a daily basis by enabling the “Enable saving” check box and then selecting the second “Cyclic” check box and setting the time to 24 hours.

Enabling/disabling backup

To enable the backup of the configured targets, you can press the button .

To confirm that the backup is active, a box will appear next to the icon:  which in addition to showing the backup status will change color from yellow to orange while copying files from target.

The backup manages all the instruments in the list only with the “Enable saving” function enabled.

You can set the tool (via “Automatic Autostart Backup”) so that, upon start up, the backup enabling status restarts from the status it had upon shutdown.

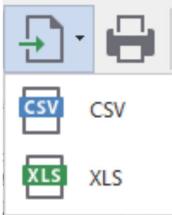
If you want to terminate the application with the backup option active, the user will be asked to confirm their will to close. If so, the backup will be automatically stopped and the application terminated.

TABLE EXPORT IN CSV / XLS FORMAT

Export in csv/xls format

You can export the read data to a csv or xls file.

To access the function, simply go to any table in the program and press the export button:



The drop-down menu that opens will offer the possibility to export the currently displayed table as a csv file or as an xls file.

All the contents of the currently displayed table will be exported, net of any filters applied.

The resulting file is very similar to the original one but it cannot be opened from the Report Utility tool. This is to prevent the user **from manually altering the encrypted data and then showing them as they were the original ones.**

PRINT MANAGEMENT

The log data, as well as the graphs, alarms and audit trail events, are printable through the appropriate print window.

The choice of what will be printed depends on what the user is currently viewing and on what type of data are open, for example if the graph has been opened it will be printed; if the audit trail events have been opened these will be printed and so on.

By default, all the other tables will be printed in the same file (logging, events, recipes). You can decide whether to disable one or more files from the options.

The software will try to print any columns on each page. Each column will have its heading and each row will have initial columns with progressive number, date, and time. If it is impossible to include all the columns (variables) in one page, the print will generate several consecutive tables until all the variables will run out.

At any time the user can decide to hide columns in the tables in order to print only the columns deemed of interest.

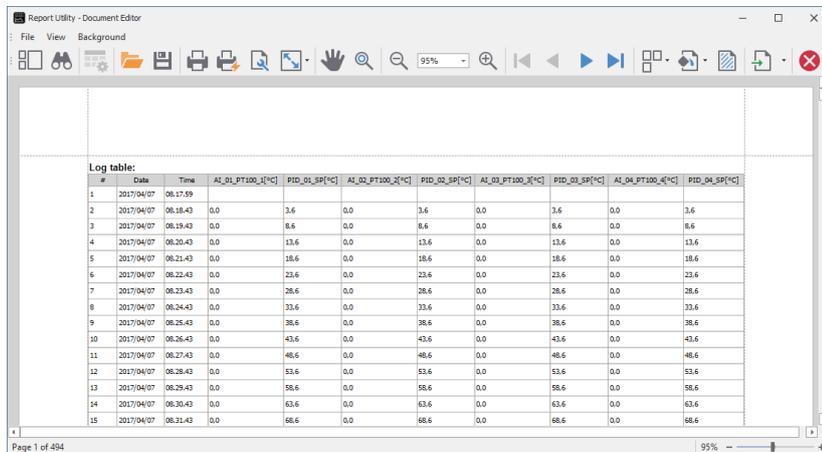
To start printing, simply press the button



After generating the print document, an editor window will open which, in addition to showing a preview of the document content,

will allow you to edit printer settings, the orientation of the sheets, add watermarks or images and much more.

Let's now briefly see the different features that this preview window offers.



Button to show and hide the display of the page thumbnails at the side of the editor window



Button to open the text search bar within the document. The user can search for a specified text on the page using this bar.



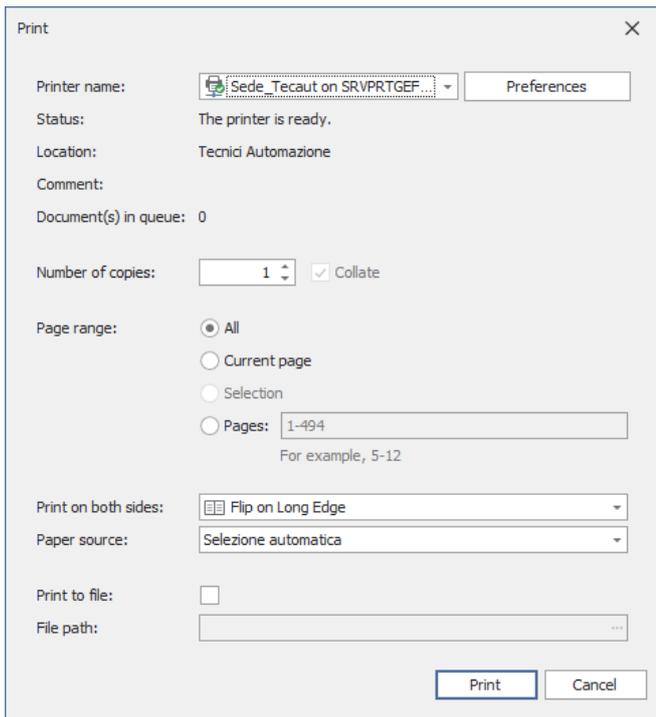
Button to open a preview document (.prnx) previously saved



Button to save the preview of the current document to disk. The document is saved with the extension (.prnx) and can be reopened at any time by opening the document editor.



Button to start printing the current document. Pressing this button will open the following window:



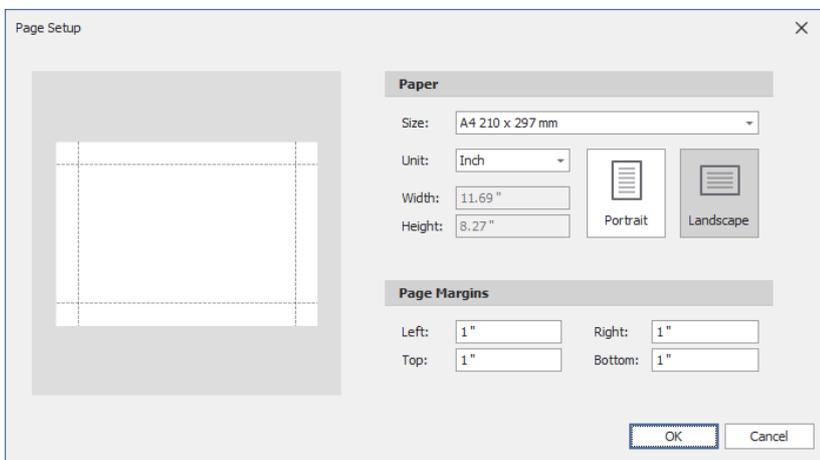
From this window it will be possible to choose the printer currently in use and call up its control panel. The classic printing customisations will also be possible, such as the number of copies, the range of printable pages, the layout and any print to file.



Button to start quick printing using the default settings



Button for page customisation. Pressing this button will cause the following window to open:



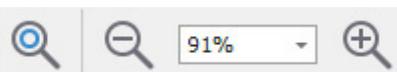
All the parameters relating to the current sheet format can be set in this window, such as:
 - Page format (for example A4, A3, etc.)
 - The page orientation (Portrait or Landscape)
 - Print margins (which are also adjustable from the preview window by dragging the margins themselves)



Button to scale all the content of the document within the pages



Button to enable page dragging with the mouse



Buttons for adjusting the zoom applied to the document. In any case, it is possible to adjust the zoom of the page by pressing the button *CTRL + Mouse Wheel (Up / Down)*.



Buttons to navigate between pages, from left: First page, previous page, next page, last page.



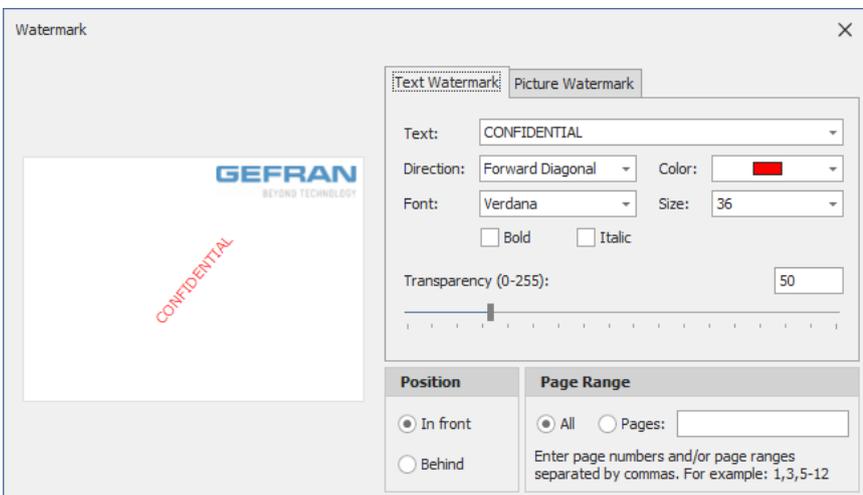
Button to choose how many pages to display in the preview window



Button to open a menu that allows you to change the background color of the page



Button to open the document watermark management window. Pressing this button will cause the following window to open:



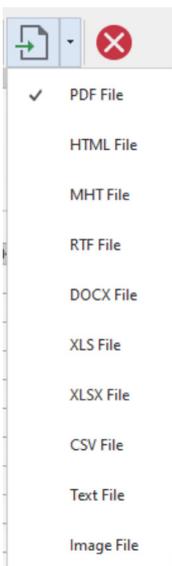
In this window it will be possible to add text or images to be superimposed or to be set as background in the text document to be generated.

The window contains 2 tabs:

The first tab "Text watermark" allows you to set a customisable formatting text to be placed on each page or in a range of pages as desired.

You can set the percentage of transparency of the text as well as the position of the text (in front or behind the content of the page)

The second tab "watermark image" will allow you to load an image from disk in different formats and use it as a logo on the page. The image can be positioned at will on all or on a range of pages exactly as in the case of the text and it will be possible to choose the level of transparency as well as the level with respect to the content of the page.



Button to export the currently open document in different formats.

By pressing this button you can choose the format with which to export the document from the drop-down menu that will open . In addition to the classic PDF, a whole series of additional formats are included.



Button to close the preview window

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