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TABLE OF CONTENTS

1.INTRODUCTION
2.MAIN FEATURES
3.MINIMUM HARDWARE REQUIREMENTS
4.SPECIFICATIONS
5.VIEWING AND STORAGE)
6.LICENSING

## 1. INTRODUCTION

The Trend Viewer software is a tool related to the Seneca Data Recorder data acquisition system and allows you to view and process the data acquired from the sessions recorded by the Data Recorder software.

## 2. MAIN FEATURES

### CONFIGURATION AND ACQUISITION

- Consultation of Data Recorder databases in real time or completed sessions.
- Customization of pages with different channel groups displayed
- Channel selection divided among the configured pages
- Customization of the display scales (time scale and measurement scale)

### VIEWING AND EXPORTING DATA

- Display of historical charts of the Data Recorder recordings
- Update of instantaneous values of selected channel groups with recording sessions in progress
- Export in Excel compatible format (.csv) of the data displayed in the chart.
- Export of the instantaneous averages of the recording in progress
- Report generation using an Excel template

## 3. MINIMUM HARDWARE REQUIREMENTS

O.S. Windows 8 or later

## 4. SPECIFICATIONS

| Item | Description |
|---|---|
| Max number of pens that can be displayed per chart | 1000 |
| Max number of customized pages. | 20 |
| Max number of viewable channels | 1000 |
| Minimum sampling period | 1 s<br>(Data Recorder configuration) |
| Data recording period. | Min. 1 second<br>Max 30 minutes<br>(Data Recorder configuration) |
| Real-Time display | Yes<br>If Data Recorder recording is active. |
| Historical log display | Yes<br>Data Recorder completed recordings |
| Zoom | Time scale and precise selection of the measurement instant as a function of the recording time. |
| Double axis | Yes Customizable. |
| Scaling of the Cartesian axes | Automatic and personalized |
| Data export | Excel compatible format (.csv) |
| Report | Customizable header with logo.<br>Chart print<br>Tabular printing |
| Languages | Italian and English |

## 5. VIEWING AND STORAGE

Using the Trend Viewer software, you can view charts of current sessions and completed sessions, filtering by channel and selecting time intervals.
It is possible to print the data recorded on the database created by Data Recorder, both in graphic and table format, and exporting in .csv format is also available.

### 5.1 Trend display



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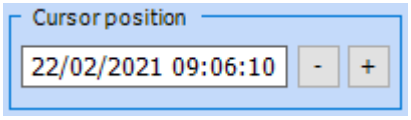


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Trend Viewer is the software that complements Data Recorder and allows you to consult the databases with the recorded data and display them in charts that can be customized in colours, filtering the data by channel and by time intervals.
You can add more trend display tabs, customizing and saving the generated configuration. The section relating to the Alarms displays any events that occurred during the recording, while the Notes section displays the notes entered by an operator during the recording session.

### 5.2 Checking the data

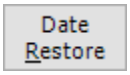
The data can be checked in real time by selecting “Update Data Automatically” from the Tools menu, or by opening a database relating to a completed recording session.
The orientation of the chart can be set to vertical or horizontal and the pages can display analogue or digital channels.
The double axis allows you to customize the scale of channels with different characteristics. By selecting “2nd Axis” the reference scale of the channel becomes the one on the right. This facilitates the comparison between channels for a more in-depth analysis.
At the top of the chart are all the controls that allow you to customize the time interval to get a better resolution.




Cursor Position shows the detail of the time instant of the position and through the "-" and "+" buttons it is possible to move the cursor respectively to the left (back) and right (forward).



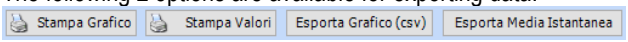

You can customize the interval by choosing the period you want to check and using the "<<", "<", ">", and ">>" keys you can quickly move between the time intervals to be analysed.
The "Set from cursor" keys allow you to quickly set the initial or final instant by taking the current cursor position as a reference.




The "Date Restore" button reloads the graph of the entire recording session, restoring the initial and final recording instants.

### 5.3 Printing and exporting in Excel (csv format)

Once the databases have been recorded, using the Trend Viewer software, it is possible to view in charts, filter by channels and times and print the data recorded on the database by Data Recorder both in graphical and tabular format (.csv).
The following 2 options are available for exporting data:




**Export Chart (csv).** It allows exporting in Excel compatible format (.csv) only the values displayed on the chart.

**Export Chart (xlsx).** It enables the export of only the values displayed on the chart directly to an Excel sheet (.xlsx) which can be used as a database for advanced reports.

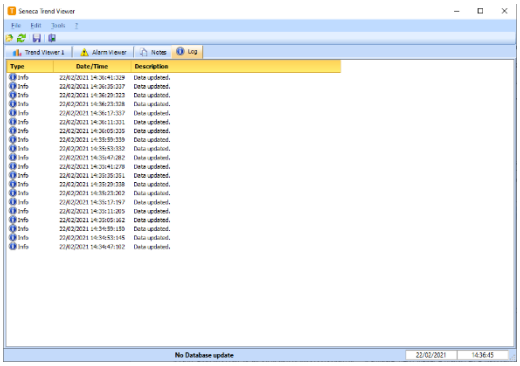
**Export Instantaneous Average.** It is available only if the connection with the Database is active through the "Automatic Update" option. By setting the parameters correctly, it is possible to export the instantaneous average calculated in a given measurement period.

### 5.4 SQLite database

In each **Data Recorder** recording session, a database in .sqlite format is generated in which the average, maximum and minimum values calculated in the elapsed time interval are written for each sample.
The sampling time can be set and can vary from a minimum of one second to a maximum of half an hour. For each recording, it is possible to insert descriptive notes which are also shown on a column of the relevant database.

### 5.5 Event / Alarm Log

The log window shows all the events recorded by the software during execution. In particular, four groups of events are displayed: error messages, information (result of operations performed), data (messages sent by modules), trace (additional more specific information).



## 6. LICENSING

The Trend Viewer software is free and is distributed to be used in conjunction with Data Recorder.


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