

SI Log Advisor – Quick Guide

1. Introduction

SILogAdvisor is a tool for reading and analyzing log information stored in **Satron** devices. At this time event and data log feature is implemented in **Satron PREON** pressure transmitters (model number **M4**), and **Satron LUMINA** optical transmitters (all models).

The main functions of the software are

- reading and modifying the logging configuration of the device
- reading the log contents from device to **PC**
- writing/reading the log contents to/from hard disk of the **PC**
- exporting the log contents to text file
- viewing the log contents in text and graphical formats
- updating the device firmware
- monitoring device variables via **HART** or **USB**

2. Installation

SILogAdvisor requires

- **PREON pressure transmitter**
 - firmware **P230419A** or later (model number **M4**)
- **LUMINA optical transmitter**
 - firmware **L230419A** or later (model number **M3**)
 - firmware **O100223A** or later (model numbers **M1** and **M2**)
- **PC** with **Windows XP, Windows Vista, Windows 7, 8, 10** or **11** operating system

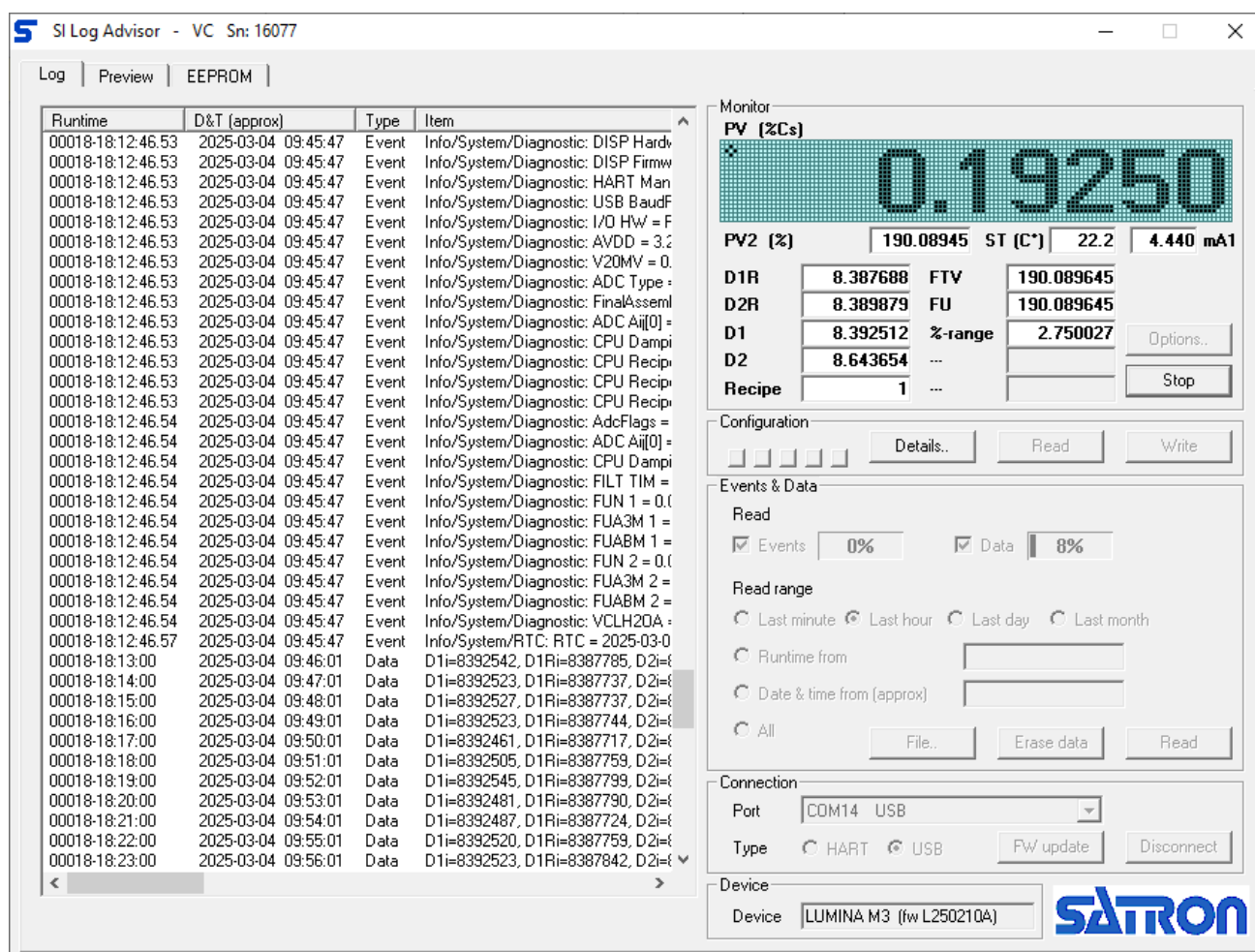
SILogAdvisor includes the following files

SILogAdvisor.exe	executable file
FlashMagicARM.dll	dll file needed with the firmware update
SILogAdvisor.ini	program settings (automatically created)

SILogAdvisor does not require any actual installation.

SILogAdvisor.exe can simply be copied to a folder on the hard disk or a USB memory stick. **FlashMagicARM.dll** needs to be located in the same directory as the executable file. **SILogAdvisor.ini** is created automatically to folder "**C:\SILogAppData**" (by default), or alternatively it can be located in the same folder as the executable file.

3. Log page



SI Log Advisor - VC Sn: 16077

Log | Preview | EEPROM

Runtime	D&T (approx)	Type	Item
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: DISP Hardw
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: DISP Firmw
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: HART Man
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: USB BaudF
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: I/O Hw/ = F
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: AVDD = 3.2
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: V20MV = 0.
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: ADC Type =
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FinalAssembl
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: ADC Aiq[0] =
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: CPU Dampi
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: CPU Recip
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: CPU Recip
00018-18:12:46:53	2025-03-04 09:45:47	Event	Info/System/Diagnostic: AdcFlags =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: ADC Aiq[0] =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: CPU Dampi
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FILT TIM =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUN 1 = 0.0
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUA3M 1 =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUABM 1 =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUN 2 = 0.0
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUA3M 2 =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: FUABM 2 =
00018-18:12:46:54	2025-03-04 09:45:47	Event	Info/System/Diagnostic: VCLH20A =
00018-18:12:46:57	2025-03-04 09:45:47	Event	Info/System/RTC: RTC = 2025-03-0
00018-18:13:00	2025-03-04 09:46:01	Data	D1i=8392542, D1Ri=8387785, D2i=f
00018-18:14:00	2025-03-04 09:47:01	Data	D1i=8392523, D1Ri=8387737, D2i=f
00018-18:15:00	2025-03-04 09:48:01	Data	D1i=8392527, D1Ri=8387737, D2i=f
00018-18:16:00	2025-03-04 09:49:01	Data	D1i=8392523, D1Ri=8387744, D2i=f
00018-18:17:00	2025-03-04 09:50:01	Data	D1i=8392461, D1Ri=8387717, D2i=f
00018-18:18:00	2025-03-04 09:51:01	Data	D1i=8392505, D1Ri=8387759, D2i=f
00018-18:19:00	2025-03-04 09:52:01	Data	D1i=8392545, D1Ri=8387799, D2i=f
00018-18:20:00	2025-03-04 09:53:01	Data	D1i=8392481, D1Ri=8387790, D2i=f
00018-18:21:00	2025-03-04 09:54:01	Data	D1i=8392487, D1Ri=8387724, D2i=f
00018-18:22:00	2025-03-04 09:55:01	Data	D1i=8392520, D1Ri=8387759, D2i=f
00018-18:23:00	2025-03-04 09:56:01	Data	D1i=8392523, D1Ri=8387842, D2i=f

Monitor

PV (%Cs) 0.19250

PV2 (%) 190.08945 ST (C*) 22.2 4.440 mA1

D1R 8.387688 FTV 190.089645

D2R 8.389879 FU 190.089645

D1 8.392512 %range 2.750027 Options..

D2 8.643654 --- Stop

Recipe 1 ---

Configuration

Details.. Read Write

Events & Data

Read

☒ Events 0% ☒ Data 8%

Read range

☐ Last minute ☒ Last hour ☐ Last day ☐ Last month

☐ Runtime from

☐ Date & time from (approx)

☐ All File.. Erase data Read

Connection

Port COM14 USB

Type ☐ HART ☒ USB FW update Disconnect

Device

Device LUMINA M3 (fw L250210A) SATRON

3.1. Making the connection

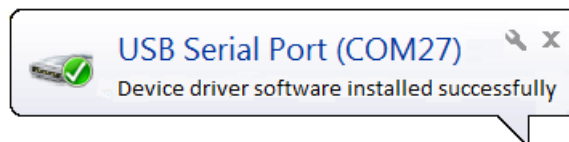
Make the connection to the device with the following steps

- connect the device to the **PC** with a **USB** cable using **Mini-B** plug (LUMINA M1/M2) or **USB-C** plug (PREON M4 / LUMINA M3), or with **HART** (all models)
- if you are using **USB**, and the transmitter has not been connected to your **PC** previously, an automatic device driver installation will now begin (if connected to Internet)
 - progress of installation is indicated by messages in the bottom right-hand corner of the **PC**
 - Note: **always** wait for the device driver installation to complete before proceeding to the next step
- select the port (**COM1...COM256**) with **Port** selection box
 - only **COM** ports that are currently present in the system are shown
- select **USB** or **HART** with **Connection** selection
 - Note: **HART** communication is about 100 times slower than **USB**
- connect with **Connect** button

If the device is found

- the log settings are automatically read from the device
- various functions on the page are enabled
- device type and firmware versions are shown on the **Device** line
- **Connect** button is replaced with **Disconnect** button.

If the device is not found, an error message is displayed.



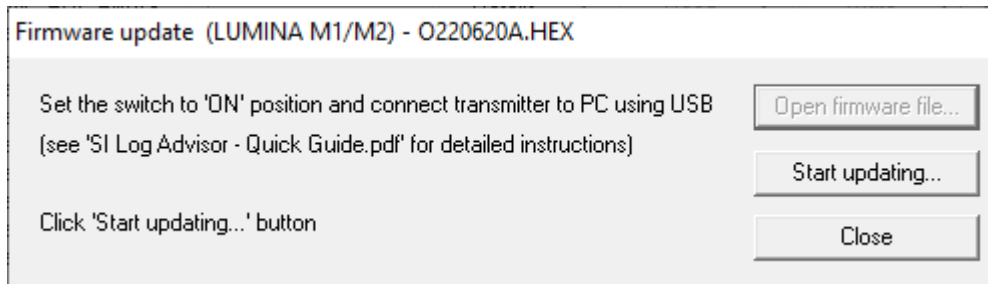
3.2 Firmware update

Firmware update procedure is started with the **FW update** button.

FW update button is enabled when a valid **COM** port is selected, and the device state is '**not connected**'.

Note: Firmware update via **HART** is only available for **PREON** model **M4** and **LUMINA** model **M3**.

3.2.1 Firmware update via USB (LUMINA models M1 and M2)



To update the device firmware, click the **FW update** button and the Firmware update window appears (select "**LUMINA M1 / M2**" if necessary).

Open firmware file...

- Browse to locate a new firmware file (*.HEX)

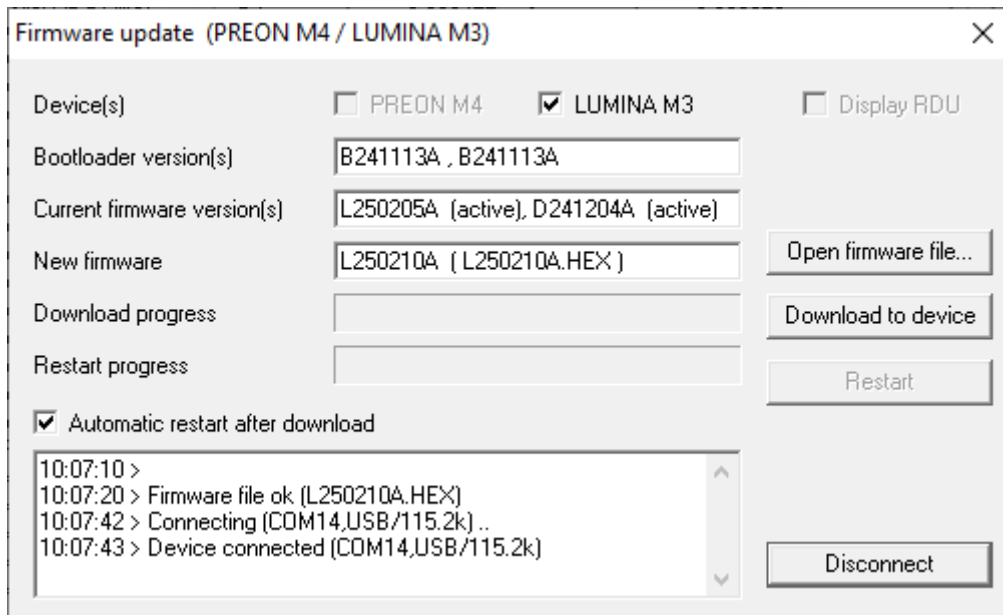
Start updating...

- Starts the update process and shows the progress in progress bar
- The little white switch must be switched to '**ON**' position before starting the update and back to '**OFF**' position when the update is finished
- Update takes couple of minutes

Close

- Closes the **Firmware update** window

3.2.2 Firmware update via USB or HART (PREON model M4, LUMINA model M3)



To update the device firmware, click the **FW update** button and select option “**PREON M4 / LUMINA M3**”

If the option does not show, go to “**Details../FW Update mode**” and select “**All models**” to enable updating **PREON model M4** and all **LUMINA** models.

Open firmware file...

- Browse to locate a new firmware file (*.HEX)

Connect

- Connects to the device and shows

Device(s)	PREON M4, LUMINA M3 or Display RDU
Bootloader version(s)	Current bootloader version of the device
Current firmware version(s)	Current firmware version of the device
New firmware	New firmware version of the device
Download progress	Download progress
Restart progress	Restart progress

Download to device

- Starts the update process and shows the download progress in progress bar
- During download the device remains fully operational (if current firmware is active)
- Download can take from a few minutes (USB) to 45..70 minutes (HART)

Restart

- Writes the downloaded firmware to flash memory of the device and restarts device with the new firmware
- Device is restarted automatically after Download (by default)
- Restart takes about 5..10 seconds
- If Download is cancelled (or device is reset) before Restart, the device retains the earlier firmware version

Close

- Closes the **Firmware update** window

Note:

Display RDU refers to **LUMINA** model **M3**'s **RDU** display unit, which has a separate firmware.

3.3. Changing log settings

The **Configuration** area of the **Log** page has these functions:

Details...

- opens **Details** page
- all the logging settings of the device can be modified on the **Details** page

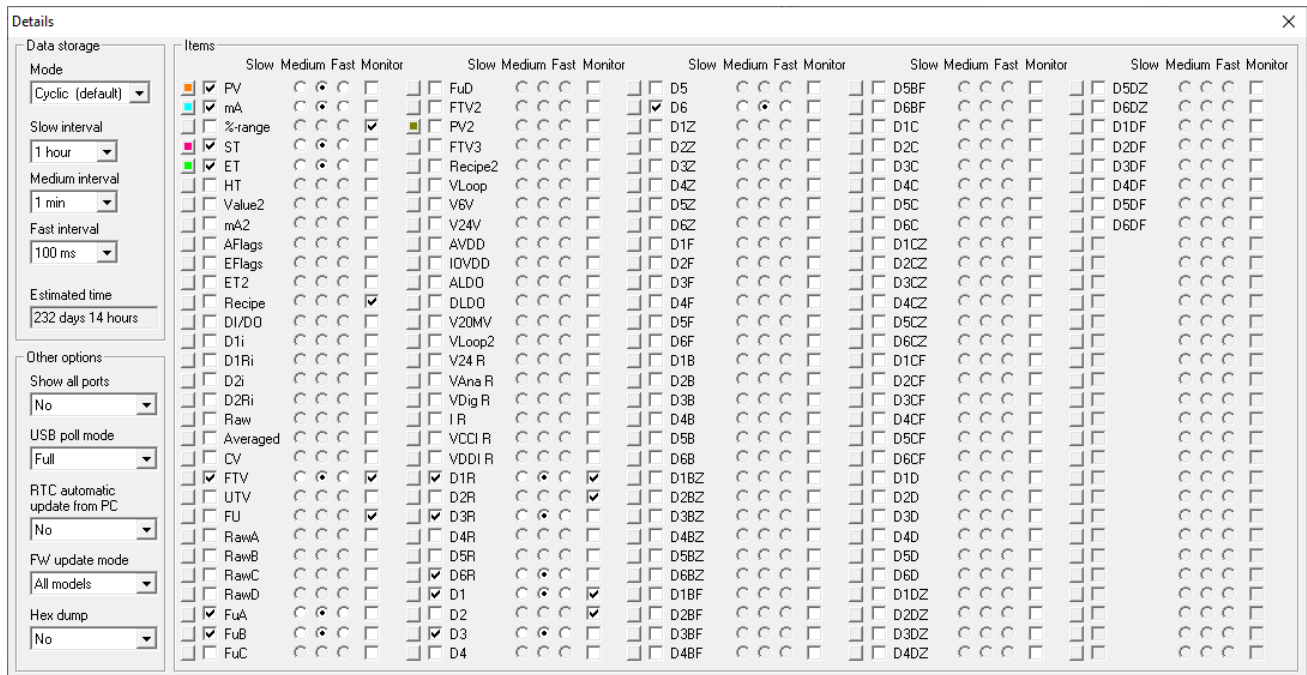
Read

- reads current log configuration from the device (automatically performed with **Connect**)

Write

- writes modified log configuration to the device
- Note: changes take effect immediately (no restart required)

3.3.1. Details page



On **Details** page (see above) the logged data items are selected.

Note: After having changed the log settings, they must be written to the device with **Write** button on the **Configuration** section.

3.3.2 Data storage options

Mode

- Cyclic (default): data logged cyclically (oldest data replaced with new)
- Digital I/O: data logging is enabled with digital input of the device
- Off: no data logging

Slow interval

- 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour, 2 hour, 6 hour, 12 hour, 1 day

Medium interval

- 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour, 2 hour, 6 hour, 12 hour, 1 day
- Note: with device firmware versions **O120327A** or earlier, this is the only available storage interval

Fast interval

- 100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour, 2 hour, 6 hour, 12 hour, 1 day

Estimated time

- shows estimated data storage time with current log settings

3.3.3 Items

- logging for each data item can either be disabled, **Slow**, **Medium** or **Fast**
- the maximum number of logged signals is **24**
- the maximum number of logged signals with **Fast** interval is **8**
- the diagram colour of the item is indicated (and can be changed) with the button to the left of the item name
- the **Monitor** column relates to the **Monitor** function (see later), and does not affect logging
- selectable items depend on the device type as follows

PREON (model M4) and LUMINA transmitters:

PV	PV (process value)
mA	output current
%-range	percent of range
ST	ST (sensor temperature)
ET	ET (electronics temperature)
AFlags	alarm flags
EFlags	error flags

LUMINA transmitters:

Value2	value 2 (second loop)
mA2	output current 2 (second loop)
ET2	ET2 (electronics temperature 2)
Recipe	active recipe index (1...4)
PS	process status (obsolete)
DI/DO	digital input and output states (bit 0= DI1 , bit 1= DI2 , bit 2= DI3 , bit 3= DO1 , bit 4= DO2 , bit 5= DO3)
D1i	D1 (as integer value)
D1Ri	D1R (as integer value)
D2i	D2 (as integer value)
D2Ri	D2R (as integer value)
Raw	calculated raw value
Averaged	averaged value
CV	compensated value
FTV	factory trimmed value
UTV	user trimmed value
FU	factory unit value
RawA .. RawD	raw values A .. D
FuA .. FuD	Fu -values A .. D
FTV2	factory trimmed value 2
PV2	process value 2 (second loop) (fw O161116A or later required)
FTV3	factory trimmed value 3 (fw O161116A or later required)
Recipe2	active recipe index 2 (5..6, second loop) (fw O161116A or later required)
D1R .. D6R	D1..D6 raw value (step R, LED OFF)
D1 .. D6	D1..D6 raw value (step A, LED ON)
D1Z .. D6Z	D1..D6 zeroed value ("-")
D1F .. D6F	D1..D6 filtered value ("-")
D1B .. D6B	D1..D6 raw value (step B, LED ON)
D1BZ .. D6BZ	D1..D6 zeroed value ("-")
D1BF .. D6BF	D1..D6 filtered value ("-")
D1C .. D6C	D1..D6 raw value (step C, LED ON)
D1CZ .. D6CZ	D1..D6 zeroed value ("-")
D1CF .. D6CF	D1..D6 filtered value ("-")
D1D .. D6D	D1..D6 raw value (step D, LED ON)
D1DZ .. D6DZ	D1..D6 zeroed value ("-")
D1DF .. D6DF	D1..D6 filtered value ("-")

PREON (model M4) and LUMINA (model M3) transmitters:

VLoop	loop voltage
AVDD	diagnostics voltage
IOVDD	--
ALDO	--
DLDO	--
V20MV	--

PREON (model M4) transmitters:

P	P (pressure)
P1	P1 (pressure 1)
P2	P2 (pressure 2)
ST2	ST2 (sensor 2 temperature)
HT	HT (housing temperature)
P1R, P1A, P1C	P1 intermediate values
P2R, P2A, P2C	P2 intermediate values
PUF	P intermediate value
ST1R, ST1C, ST1UF	ST1 intermediate values
ST2R, ST2C, ST2UF	ST2 intermediate values
ETR, ETC, ETT	ET intermediate values
V9V	diagnostics voltage

LUMINA (model M3) transmitters:

VLoop2	loop 2 voltage
V6V	diagnostics voltage
V24V	--
V24 R	diagnostics voltage (RDU)
VAna R	--
VDig R	--
I R	--
VCCI R	--
VDDI R	--

3.3.4 Other options

Show all ports

- No (default): show only **COM**-ports of type **Serial** and **VCP**
- Yes: show all **COM**-ports (e.g. **BlueTooth** and **STLINK-V3MINIE**)

USB poll mode

- No: no attempt to automatically identify **Satron** devices
- Dynamic: attempt to identify **Satron** device only when new **COM** port is added (faster option than **Full**)
- Full (default): attempt to identify all **Satron** devices at start-up

RTC automatic update from PC

- No (default): no updating of **RTC** (except by **File../Set real-time clock**)
- Prompt: when connection to a device is made (**Connect**), the time of **RTC** of the device is read, and if it differs by more than **60 s** from **PC** time, the user is asked, if the **RTC** should be updated
- Always: the same as above except that updating is done automatically

FW update mode

- LUMINA M1/M2 only: only update **LUMINA** transmitter models M1 and M2
- All models (default): update **PREON** transmitters (model number **M4**) and **LUMINA** transmitters (all models)

Hex dump

- No (default): communication data between **SILogAdvisor** and the device is not stored to hard disk
- Continuous: communication is stored as hex text format to file **DUMP.txt**
- Session: communication is stored to file **DUMP_<YYYYMMDD>_<HHMMSS>.txt** (a new file is created at every start-up of **SILogAdvisor**)
- Connection: same as above, except that a new file is created at every new connection (**Connect**)

3.4. Reading events and data from the device

On the **Events & Data** area of the **Log** page, the settings with which the data from the device will be read, can be changed, and the reading of data can be started.

Read

- reads either events or data, or both

Events and Data

- read either events or data, or both (at least one has to be selected)
- Note: it is recommended that events should always be read (e.g. the **RTC** calculation does not work without reading the **RTC** events)
- usage gauges show the amount (as percent) of events and data flash memory that is currently in use
 - 0 % = memory empty (or less than 1 % in use)
 - 99 % = all memory in use (oldest items have been erased)
 - value 100 % is never reached because there is always room for new items

Read range

- specifies the starting time after which the events/data are read

Last minute

events/data during the last minute

Last hour

events/data during the last hour

Last day

events/data during the last 24 hours

Last month

events/data during the last 31 days

Runtime from

events/data after specified runtime

(runtime is the time in days, hours, minutes, seconds and tenths of a second, which the device has been operational)

Date & time from

events/data after the specified date and time

(if real-time-clock is active, then **RTC** events are used to calculate the time, otherwise, the date and time is an approximation which assumes that the device has been operational without interruption)

All

all events/data

3.5. Erasing logged data from the device

- logged data can be erased from the device with **Erase data** button
- Note: logged **events** can only be erased at the factory

3.6. Writing/reading events and data to/from files

- the log data can be saved/read to/from files with the following functions using the **Files..** button

Open SI file (*.sif)	opens previously stored log data file (*.sif)
Save SI file (*.sif)	stores log data to file (*.sif = Satron Instruments file format)
Export data to text file	writes data to text file in CSV format (comma-separated values)
Export events to text file	writes events to text file in CSV format
Export data/events to text file	writes data and events to text file in CSV format

- with the **Export** functions the log data can be exported for later analysis with other tools (e.g. **Excel**)
 - the same decimal symbol (“,” or “.”) will be automatically used as in **Windows**
 - semicolon (“;”) will be used as a separator
- Note: it is recommended that after the events/data has been read from a device, it should be stored using the **Save SI file (*.sif)** function.
This enables opening the stored events/data for later viewing in **SILogAdvisor** as well as exporting it later to a text file (a text file can not be opened in **SILogAdvisor**).

3.7. Viewing events and data as a list

On the left-hand side of the **Log** page, the events and data are shown as a list with the following columns:

Runtime	the time in days, hours, minutes and seconds (and hundreds of a second), which the device has been operational at the time of the logging
D&T (approx)	date and time (calculated using Runtime and RTC events) <ul style="list-style-type: none"> - if real-time clock is active, then RTC events are used to calculate this time - otherwise, the date and time is an approximation which assumes that the device has been operational without interruption - Note: if the date and time is an approximation, it is shown in parentheses
Type Item	Event or Data event/data item information as text

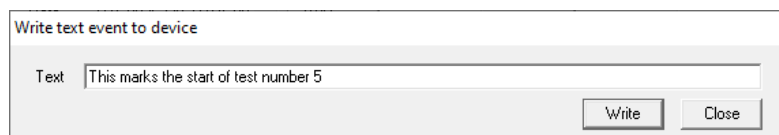
Note: activating an event/data on the **Log** page (by clicking the **Runtime** field) will place cursor on the **Preview** page to the time of that particular event/data item

3.8. Other functions

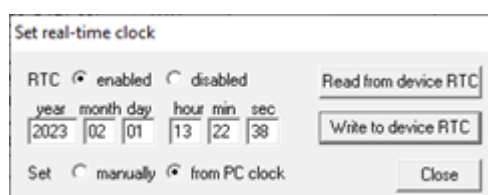
- other functions using the **Files..** button include

Write text event to device writes any text to the event log of the device (max **64** characters per event)
Set real-time clock sets the time of the real-time clock (**RTC**) of the device

- by writing a text event to the device, the user can write additional information to event log (e.g. information about tests or service operations, etc.), which can later be useful, when the log is read



- **RTC** time can be set either manually or from **PC** clock



3.9. Monitor

The **Monitor** area of the **Log** page can be used to monitor values of the following variables:

PV process variable
PV2 2nd process variable (if applicable)
ST sensor temperature
mA1 1st loop current

In addition, the user can select maximum of **10** other variables from the data item list in the **Details** page.

Monitoring is started by button **Start** and stopped with the same button (**Stop**).

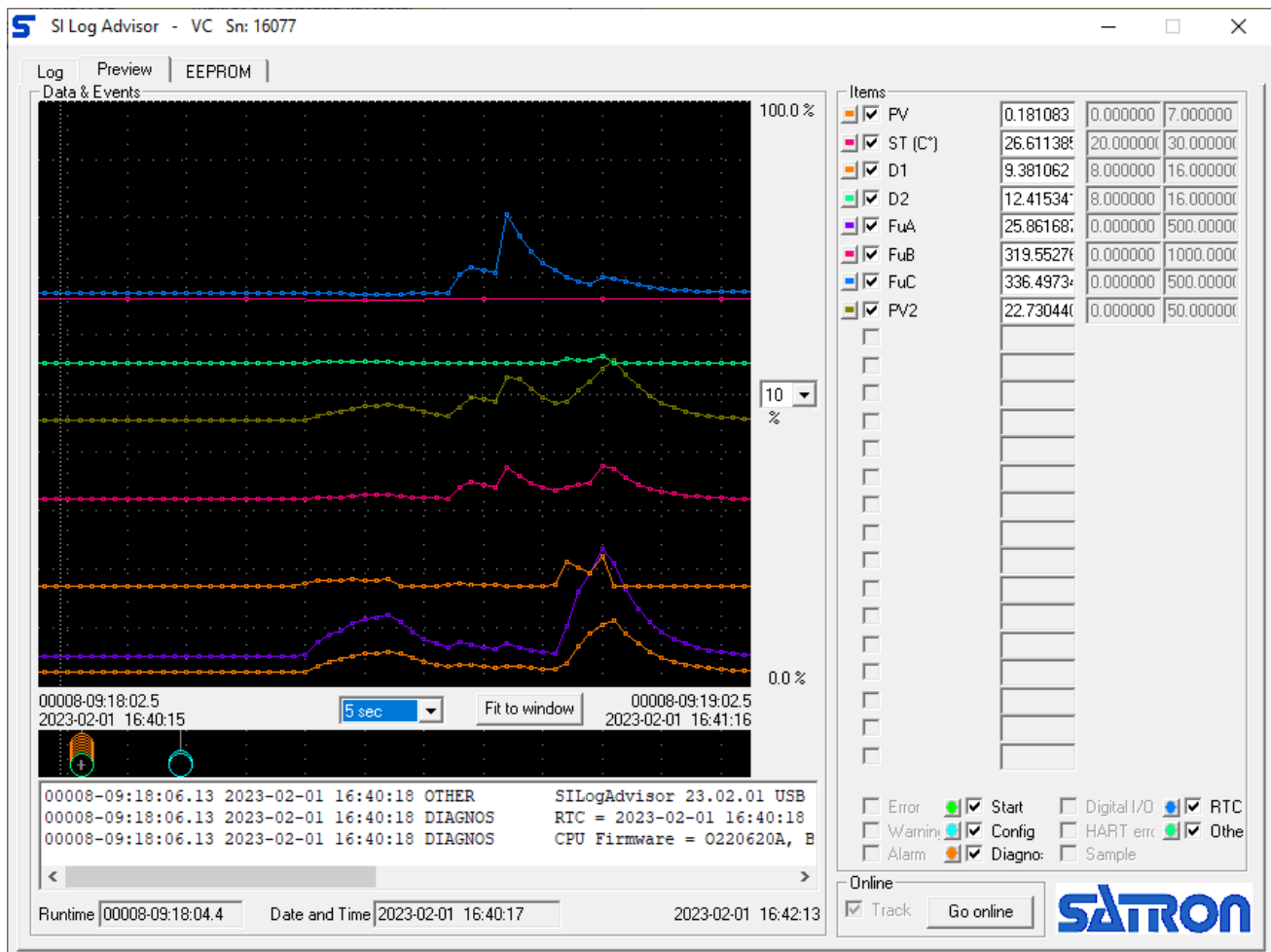
Wait is shown for a few seconds after monitoring is starting up, and also, if the connection to the device is lost while monitoring.

Blinking dot in the upper left corner of the **PV** display indicates that monitoring is active.

Options../Select.. opens the **Details** page, and **Options../PV decimals** and **Options../PV2 decimals** can be used to select the number of decimals for **PV** and **PV2**, respectively.

The units are shown the same way as they appear on device's display.
 If **PV2** is not used, **N/A** is shown as its value.

4. Preview page



4.1. Data items

- data item values are shown in the upper left window as lines (**0 %** to **100 %** range), with various colors
- when zoomed in enough, individual measurement points are represented with tiny squares
- the upper right-hand side of the page shows the numerical values of the items at the cursor position, with their respective colors (items that are not present in the log data are disabled, i.e. gray)
- items that are present in the log data can be hidden by unchecking the visibility checkbox for the item
- the **0 %** and **100 %** values for each item can be modified only when the checkbox is unchecked
- the active window can be moved up or down (with **10 %** steps of the range)
- range box selects the height of a grid square (**not** total height of the window) from the following values
 - **10 %** (default), **5 %**, **2 %**, **1 %**, **0.5 %**, **0.2 %**, **0.1 %**, **0.05 %**, **0.02 %**, **0.01 %**
- with **Fit to window** button the timescale can be adjusted automatically so that all events/data fits to the window

4.1.1. Data item ranges

- the range of each data item can be modified automatically with the following functions (press the color symbol to the left of the item name)

Fit range	fit the item data to 5.. 95 % of the preview window
Zoom range in	zoom the item data range in
Zoom range out	zoom the item data range out
Move diagram up	move diagram up on the display
Move diagram down	move diagram down on the display
Stack ALL diagrams	organize all data ranges so that they are displayed stacked one on top of the other
Save range	save automatically modified range
Save ALL ranges	save all automatically modified ranges
Change color	change color of diagram

4.2. Events

- all event types (except Digital I/O events) are always logged

Error	error
Warning	warning
Alarm	alarm
Start	start event (several Start events will be logged with every boot)
Config	configuration change
Diagnostic	diagnostic event
Digital I/O	change in digital I/O states
HART error	HART error (invalid HART message received)
Sample	sample event
RTC	real-time-clock event
Other	other event

- events are shown in the lower left graphical window as circles, with various colors
- events at the same position are stacked one above another ('+' sign on an event indicates that there are more events on that position than is possible to show on the window)
- the lower right-hand side of the page shows the event types that can be selected to be visible, with their respective colors
- the event types that are not present in the log data are disabled (gray)
- text window below the graphical window shows textual information of the event(s) at cursor position

4.3. Data items and Events

- the active windows can be moved with mouse left or right
- time box selects the width of a grid square (**not** total width of the windows) from the following values
 - 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 30 min, 1 hour, 2 hour, 6 hour, 12 hour, 1 day, 2 days, 1 week
- Note: when time box is active, the time can be zoomed in and out with mouse wheel (time box can be activated also by clicking on the graphical window)

4.4. Other functions

- **Runtime** shows the operating time of the device at the cursor position
- **Date and Time** shows the real-time-clock time at the cursor position
- Note: double-clicking on either of the graphical windows activates the **Log** page and displays the event or data item, which is closest to that cursor position
- current time is shown on the bottom of the screen

4.5. Online mode

Online mode can be entered with **Go online** button.

In the online mode the event and data log items that the device is logging to the internal flash memory, are simultaneously written to the connected **PC** (via **USB**).

Online mode can be exited **Go offline** button.

When **Track** is enabled, the preview window and cursor are automatically moved to show the last log item (oscilloscope-like function).

When **Track** is disabled, the user can move freely within the time space.

Note: Online mode is available only with **USB** (not **HART**).