zLoggManager User Guide

Release 012 – 11/26/2019

Table of Contents

1. Table of Contents

Table of Contents

Table of Contents

2. What's new:

2.1. Release 012 – 11/26/2019

- Reassessment
- User / Admin

3. Presentation and Installation:

3.1. Introduction to zLoggManager

zLoggManager is a multi-platform desktop application with smart interfaces, elegantly designed to work with the zLogg series data loggers.
This software facilitates fast creation of reports in formats such as PDF, CSV, and Text files including graph, histogram, summary, data, and more. This software is fully inclusive of data loggers configuration, viewer, alarm manager, and MKT (Mean Kinetic Temperature) and report creator.

3.2. Highlights

- ✓ Absolutely free
- ✓ Configure, Viewer, Report all in one
- ✓ Create mission templates
- ✓ Multi-platform: Windows, Mac OSX
- ✓ Auto upgrade
- ✓ Export data in various formats
- ✓ Analyze data
- ✓ Customizable reports
- ✓ Upgrade data logger's firmware

3.3. Download

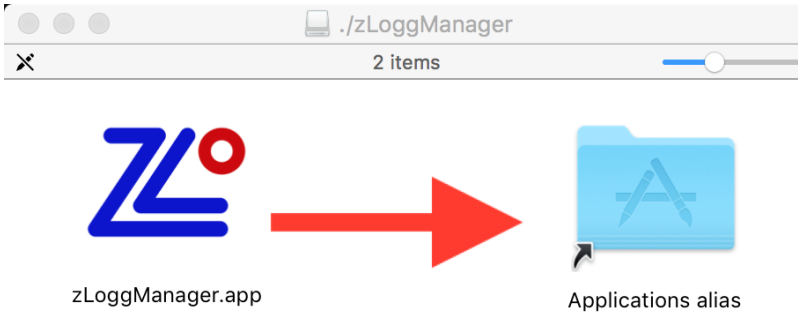
Click the link to download your copy of zLoggManager for free:
https://z-logg.com/index.php/productlogger/software

3.4. Installation for Windows:

Extract your copy of zLoggManagerSetup (*.exe) launch the installation wizard and follow the steps. This installation process will add a shortcut on the desktop.

3.5. Installation for Mac OSX:

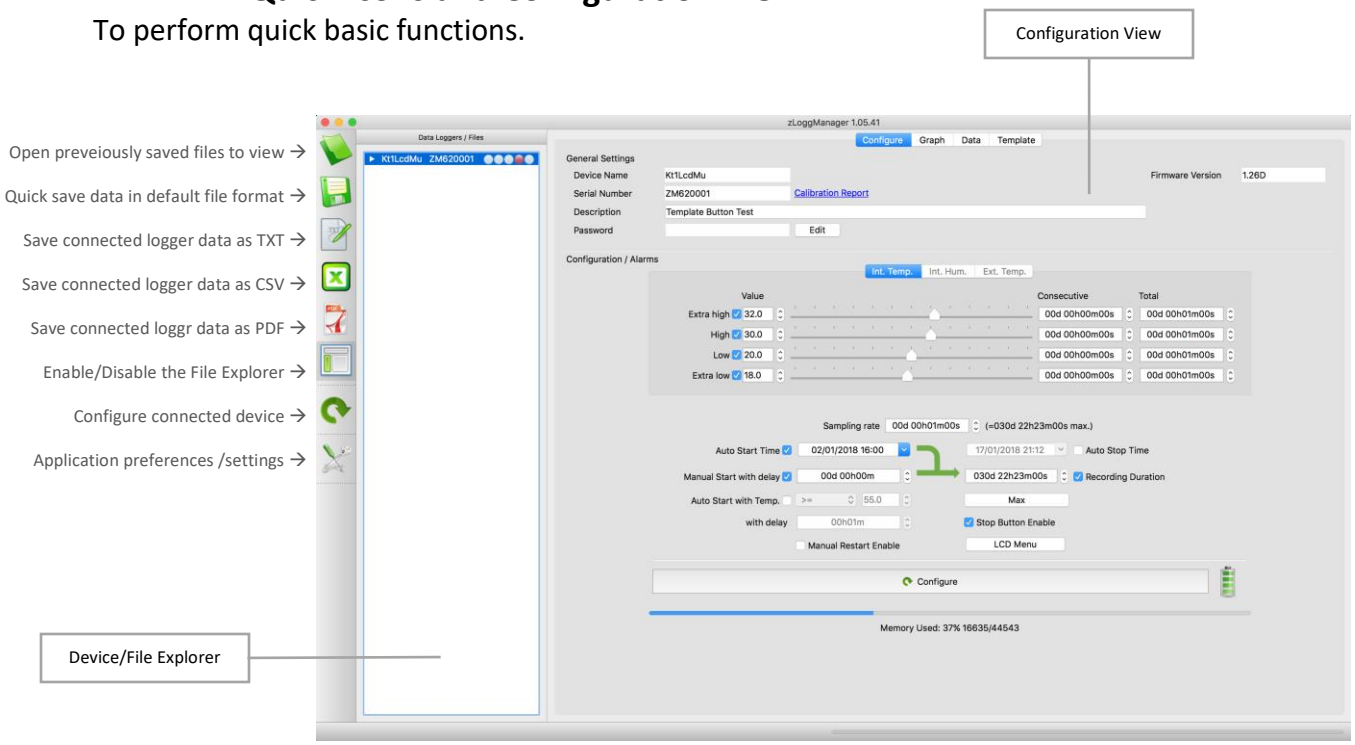
Double click on your copy of zLoggManager.dmg file. This will mount the file and open a window containing the zLoggManager application. Just move the application into the Application folder. The zLoggManager application can be launched directly from the Application folder.



4. Application View

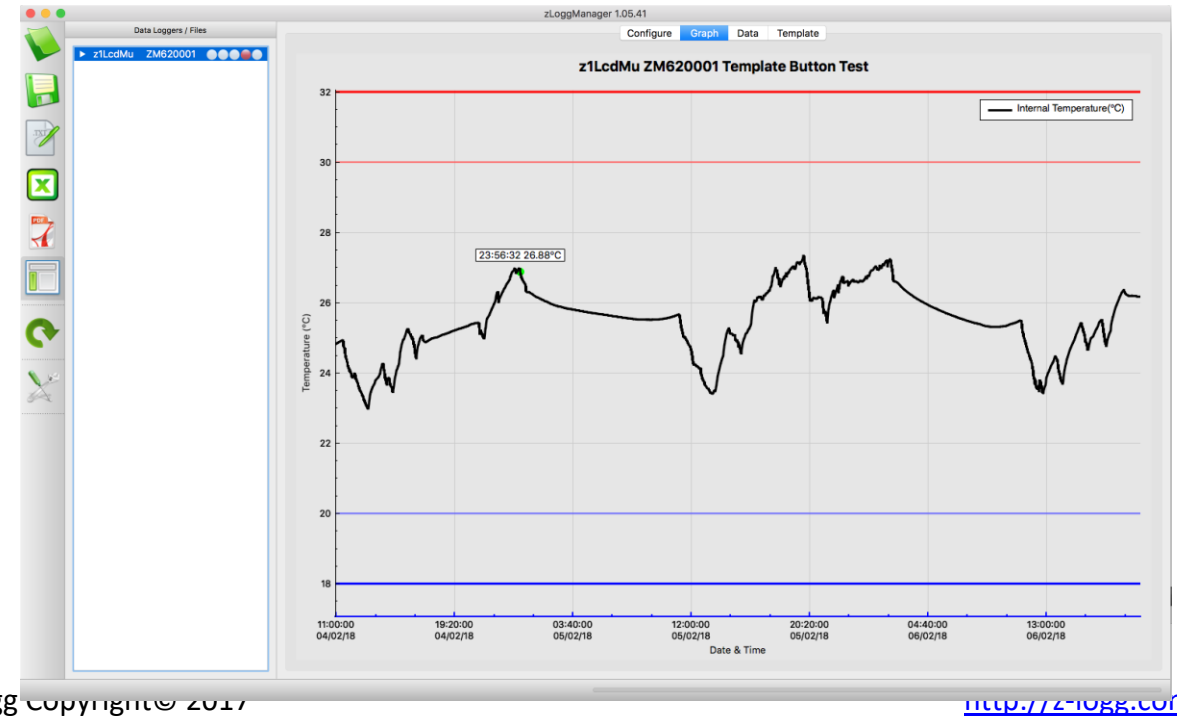
4.1. Quick Icons and Configuration View

To perform quick basic functions.



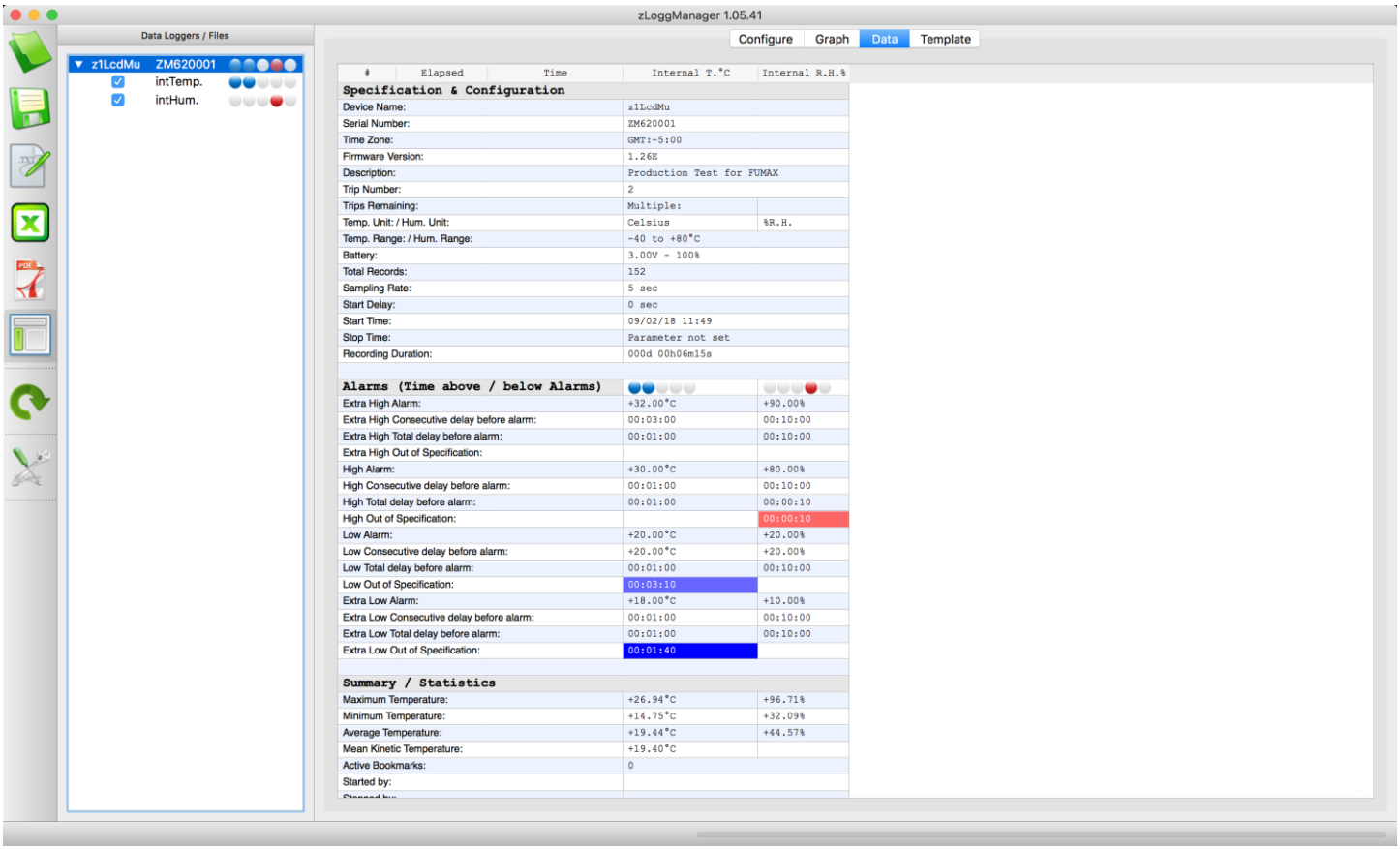
4.2. Graph View

Advanced graph viewer with zoom on both axes or each axes individually, themes…

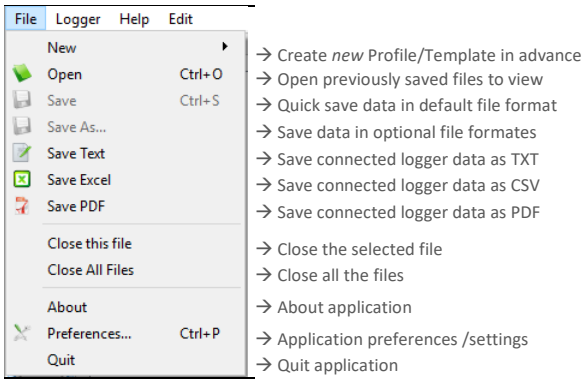


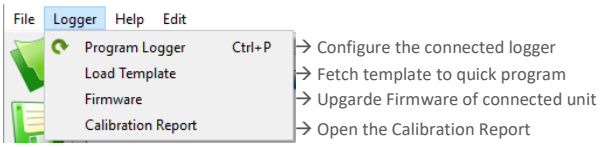
4.3. Data View

Fully customizable summary view of the data including the logger configuration, the alarms status, statistics and data.



4.4. Menu





4.5. Preferences General Tab

- **Home Path:** Select the default directory where files will be saved.
- **Create sub-folder by:** Files will be saved in the following folder:
  - **None:** Home Path.
  - **Date:** Named after the current date.
  - **Device Name**: Named logger's name.
  - **Serial Number:** Named after logger's serial.
  - **Description:** Named after logger's description.
  - **Date:** in a folder named after the current date.
- **Language:** Current language.
- **Time Zone:** Selection based on country/city or UTC format.
- **Temperature Units:** Selection Celsius/Fahrenheit
- **Excel CSV Separator:** Select the default separator character used in the CSV generation files.
- **Excel Decimal:** Select the default decimal character.
- **MKT Activation Energy:** Set the activation energy value:

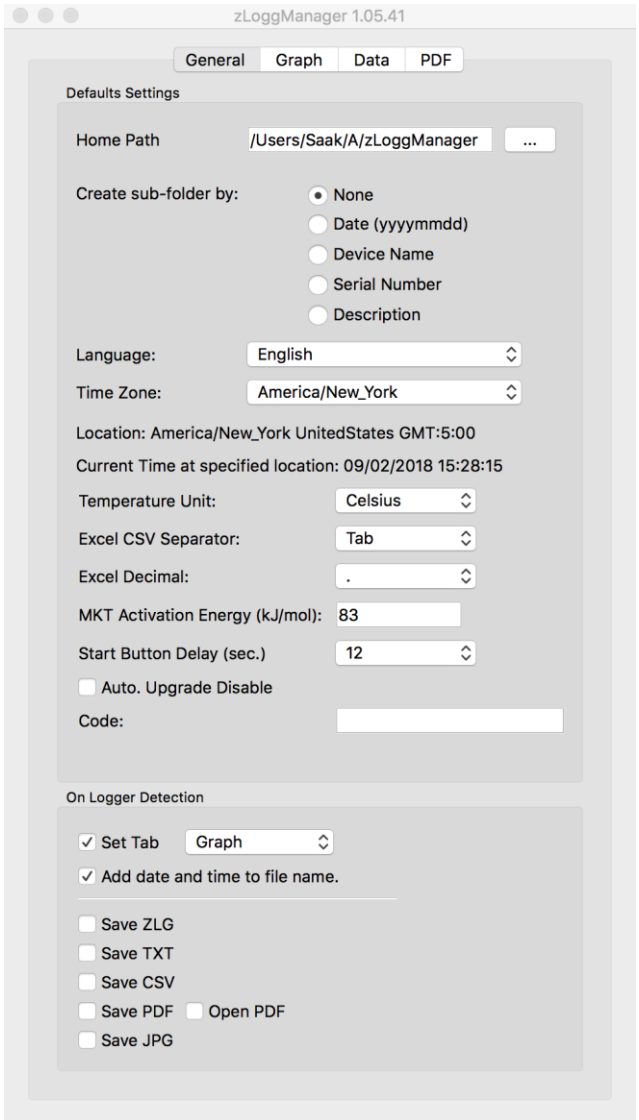
MKT is expressed as:

$$-ln\left(\frac{e^{\frac{-\Delta H}{RT1}} + e^{\frac{-\Delta H}{RT2}} + \ldots + e^{\frac{-\Delta H}{RTn}}}{n}\right)^{\frac{\Delta H}{R}}$$

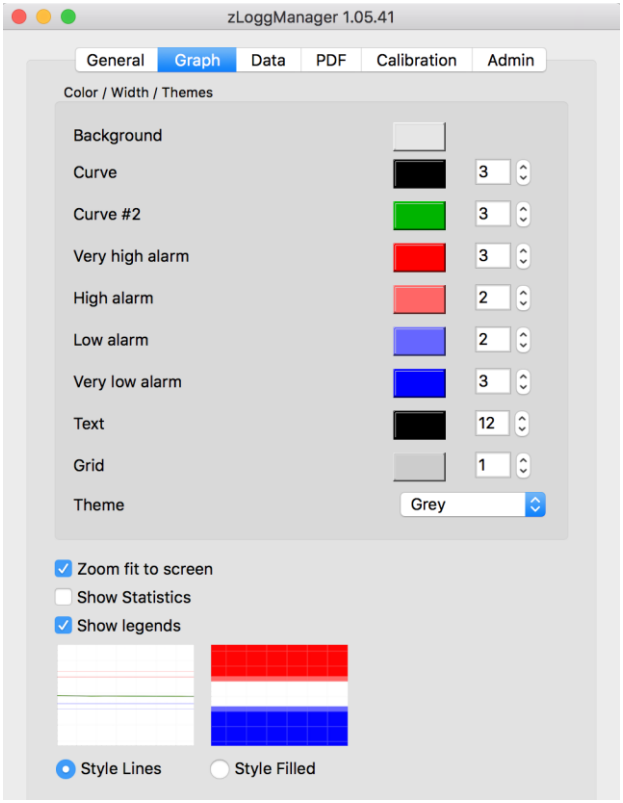
Where.
ΔH = activation energy (typically from 60 to 100 kJ/mol for solids and liquids)
R = 8.314472 J/mol-K (universal gas constant)
T = temperature in degrees K
n = the number of sample periods over which data is collected

Note : ln is the natural log and e_x is the natural log base.

- **Start Button Delay (sec):** This is the delay the Start button has to be pressed and held for the z1 series data loggers.
- **Auto. Upgrade Disable:** Prevent the communicate with zLogg's server to check the current version.
- **On Logger Detection:** Auto generate and save the desired file format in the default folder, as soon as the logger is connected.



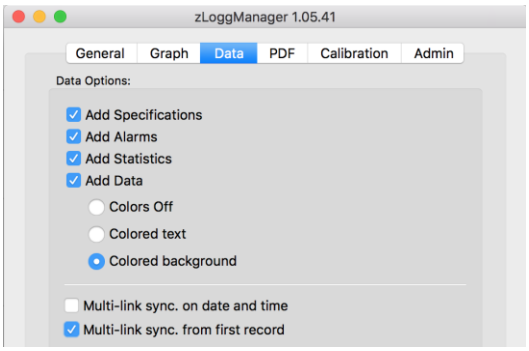
4.6. Preferences Graph Tab



- **Color/Width/Themes:** Customize all aspects of the graph such as background/traces color and thickness.
- **Theme:** Three preset themes to choose from. Options are: white, grey and black.
- **Zoom fit to screen:** Default zoom for the graph to fit all data onto one screen.
- **Show Statistics:** Show the basic statistics (max, average, min..) on the graph.
- **Show legends:** Show the name of each sensors in a legend at the top right of the graph.
- **Style Lines:** Select the alarm thresholds shown as lines for areas.

4.7. Preferences Data Tab

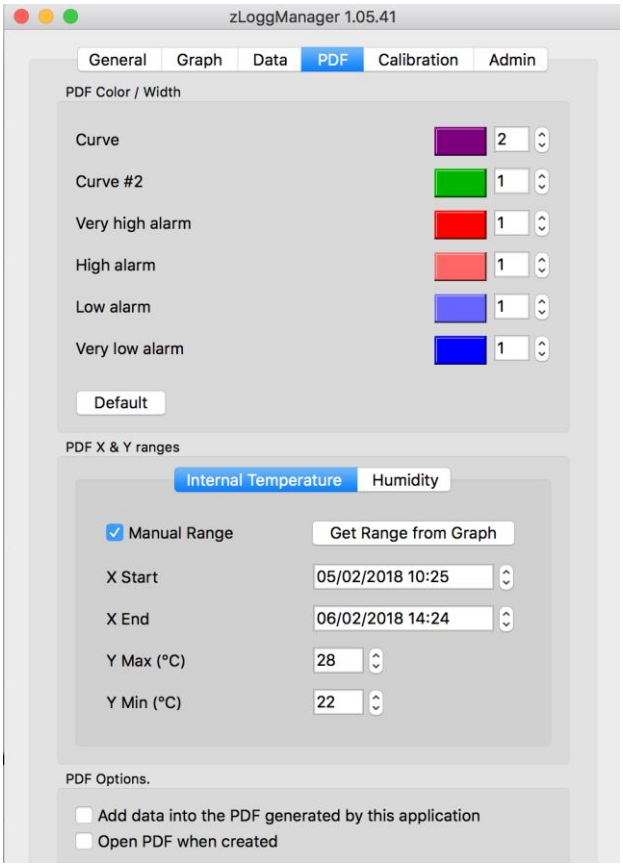
Select the information needed to be viewed in the data window.



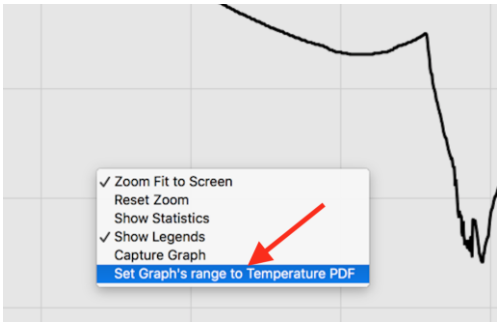
- **Add Specifications:** Add the device and configurations information.
- **Add Alarms:** Add the alarms settings such as thresholds, delays…
- **Add Statistics:** Add the basic statistics information such as min, average, max, MKT…
- **Add Data:** Add the recorded data using the following colors.
  - **Colors Off:** not colored
  - **Colored text:** foreground used the alarm's color
  - **Colored background:** background used the alarm's color
- **Multi-link sync. on date and time:** When multiple files are opened, the data are synchronized according the recording date and time.
- **Multi-link sync. from first record:** When multiple files are opened, the data are synchronized with their first record.

4.8. Preferences PDF Tab

Customize PDF generated by data logger and by zLoggManager according to requirement. Chose graph colors for alarms, curve and alarm lines thickness.



- **PDF Color/Width:** Customize the curve and alarm's thresholds color and thickness.
- **PDF X & Y ranges:** In this section, it is possible to set the PDF's graph limits by adjusting Start / Stop and Min / Max. The data can be entered manually or by a simple click on the button "Get Range from Graph" that will calculate the limits from the current graph's view.
  A right click from the graph will open a popup menu with: "Set Graph's range to Temperature PDF" that will also calculate the limites from the current graph's view.



- **PDF Options:** Select which data you would like to be added in the PDF generated by the application.

5. Configuration

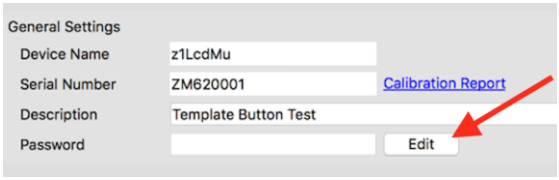
5.1. General Settings

Device Name: Data Logger's model. Read only.
Firmware Version: Logger'
Serial Number: Data Logger's unique serial number.
Calibration Report: If exist, it opens the online Calibration Certificate directly from the default web browser.
Firmware Version: Current logger's firmware version
Description: User read write description.
The length of this field is related to the connected device specifications.
Password: User read write description.

5.2. Password

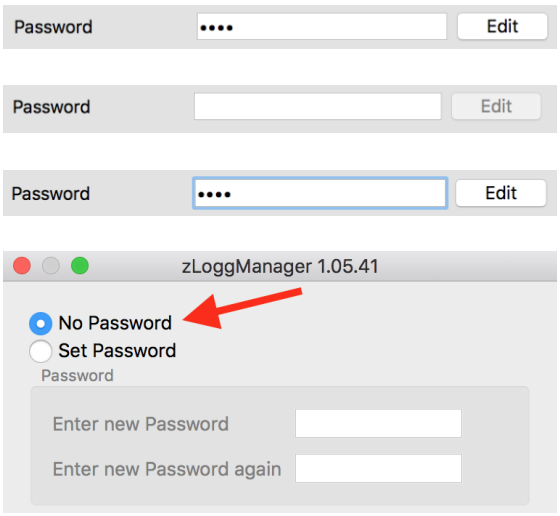
This password protection, if activated, prevent the connected logger to be configured.
To set a password protection on the connected logger:

- Click on the "Edit" button:



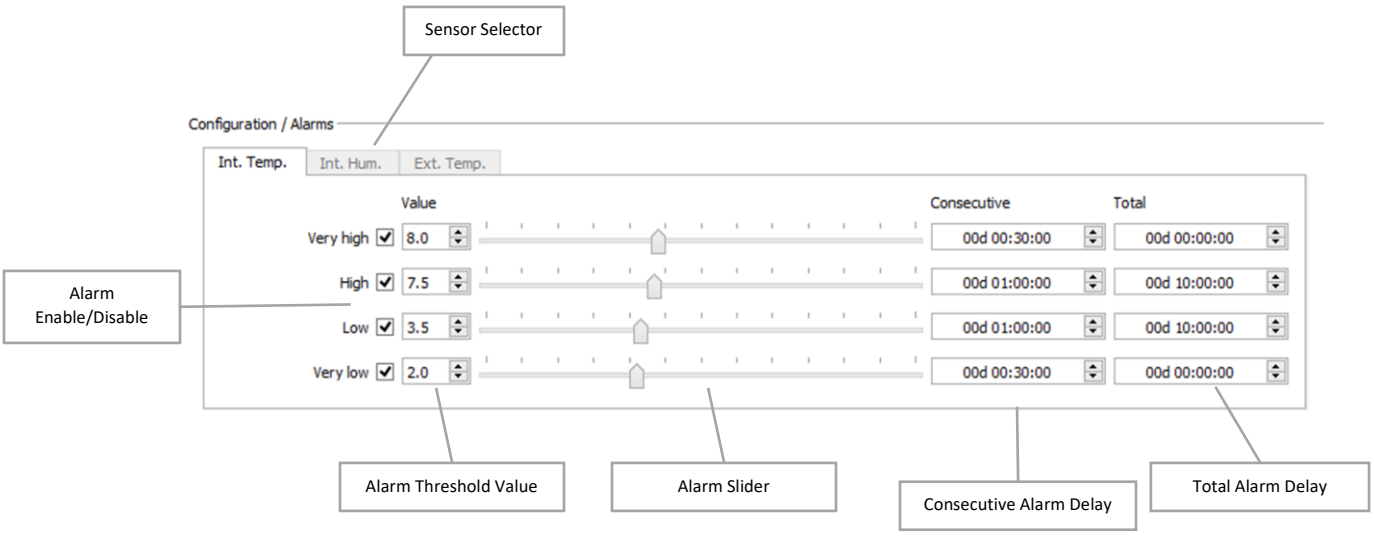
- Set the radio button: "SetPassword"
- Enter the new password twice, until the green check indicating that the new password is set.

- The new password is now set. The logger can be configured. This password will be written into the logger.
- When this logger with a password is reconnected, all the configuration controls are disabled including the configure button. Until the right password is entered.
- To remove the password protection, click the "Edit" button and set the radio button: "No Password", then configure the logger.



5.3. Alarms

- Up to four alarm thresholds with smart delay management.
- Each alarm threshold has a consecutive and/or a total delay before alarm.
- The resolution of the alarms thresholds is 0.1°C in the whole range of the connected data logger
- Alarms can be enabled or disabled using the checkbox button. Therefore it is possible to configure a data logger without any alarm, or with 1, 2, 3 or up to 4 alarms thresholds.
- The alarm thresholds are inclusive:
  ex: High Alarm Temperature >= 7.5°C is out of specification.
  ex: Low Alarm Temperature <= 3.5°C is out of specification.



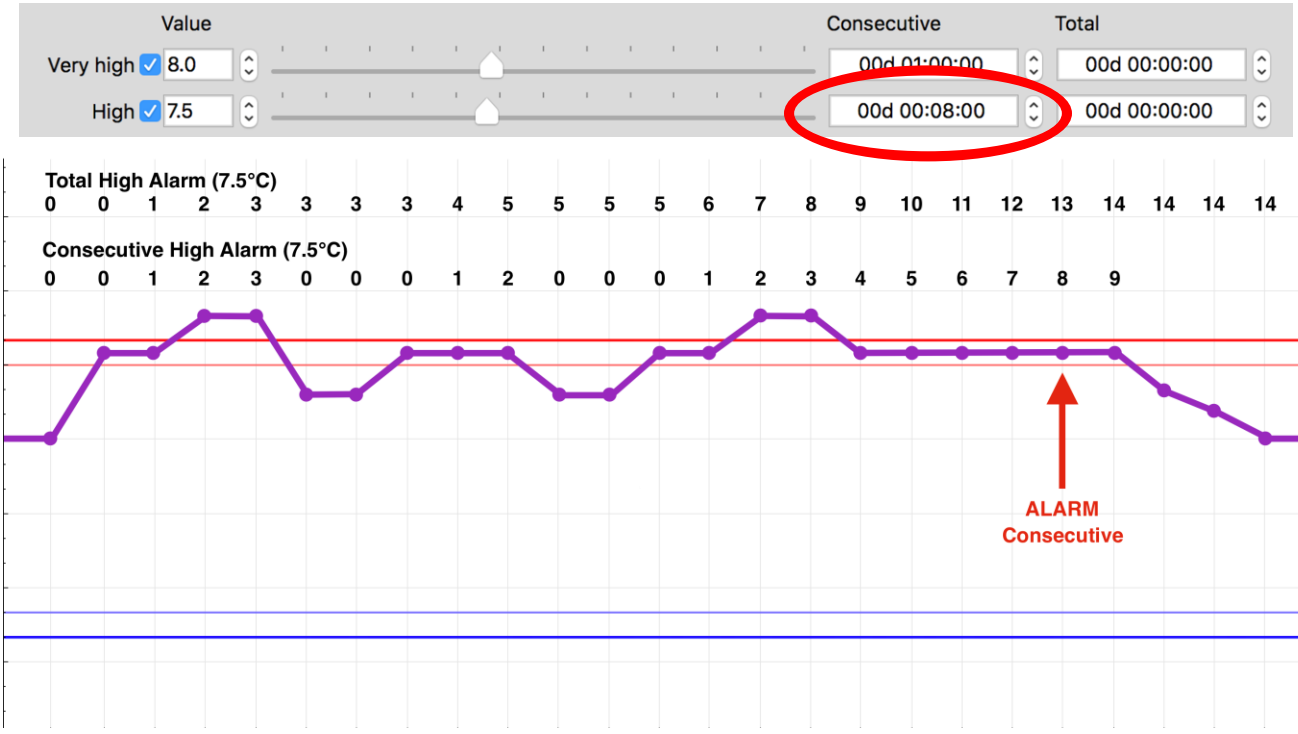
5.4. Delay before alarm

The delay before alarm is the mechanism that triggers the alarm according to the pre-set sensor value, the duration of “out of specification,” and the type of delay.

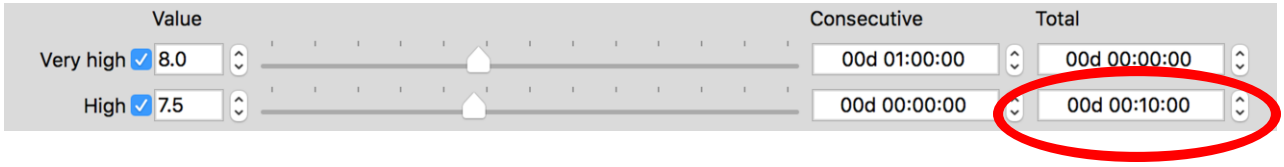
The consecutive alarm delay is a counter that tracks the duration between when the sensor value is above or below the alarm threshold (above for high and very high alarm, and below for low and very low). If the sensor value comes back to normal before it has reached the consecutive delay, this counter is reset to zero. This consecutive alarm delay will trigger an alarm if this one is out of specification for the set duration without going back to normal. If set to zero, this delay is disabled.

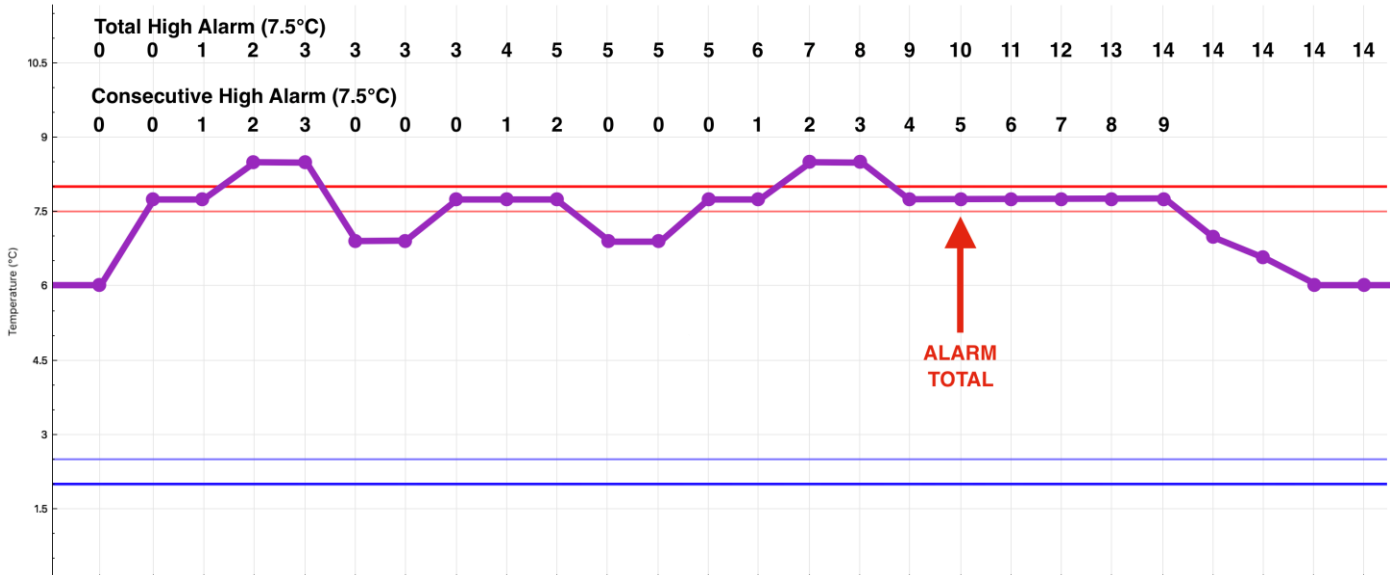
The total alarm delay is a counter that counts the duration of when the sensor value is above or below the alarm threshold (above for high and very high alarm, and below for low and very low). If the sensor value comes back to normal before it has reached the consecutive delay, this counter is not reset to zero. It will maintain the out of specification duration and restart counting when the sensor value will go again out of specification. This total alarm delay will trigger an alarm as soon as the expired time of all added violations has reached the set duration. If set to zero, this delay is disabled.

Example: High alarm threshold set to 7.5°C with a consecutive delay of 8 minutes and no total alarm. The sampling rate is 1 minute. The alarm is triggered when the consecutive delay reaches 8 minutes. As we can see in this example, the counter is reset to zero twice when the temperature goes below 7.5°C.

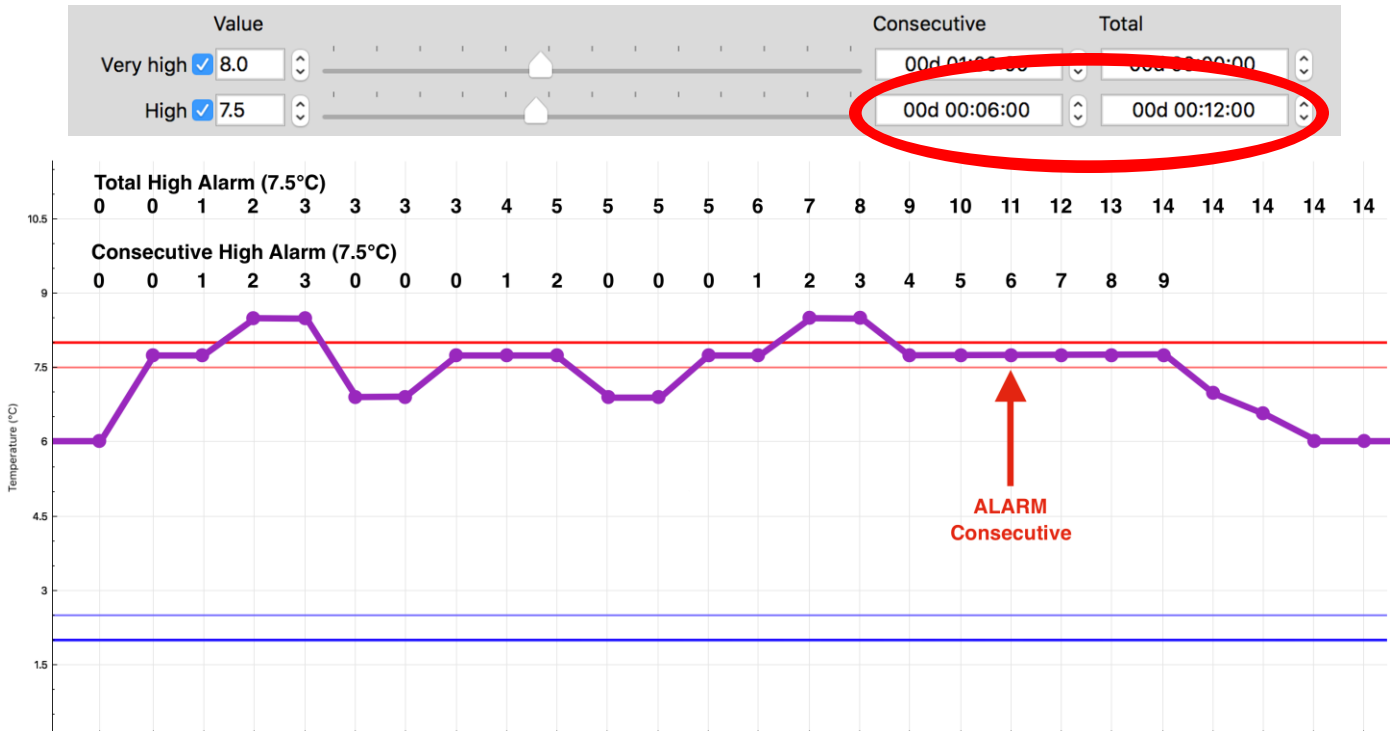


Example: High alarm threshold set to 7.5°C with a total delay of 10 minutes and no consecutive delay. The sampling rate is 1 minute. The alarm is triggered when the total delay reaches 10 minutes. As we can see in this example, the counter stopped counting when the temperature goes back below 7.5°C and continues when above 7.5°C.





Example: High alarm threshold set to 7.5°C with a consecutive delay of 6 minutes and a total delay of 12 minutes. The sampling rate is 1 minute. In this scenario we have both, the consecutive, and the total delay set respectively to 6 and 12 minutes. In that example, the alarm is triggered when the consecutive delay reaches 6 minutes.



5.5. Start, Stop and Sampling rate

The sampling rate is the record period. The delay between when each record is stored in memory. zLogg logger can start and stop in different ways:

- Manual start pressing the Start button; with or without delay.
- Automatic start at a preset date and time.
- Automatic start when a pre set temperature threshold is achieved with a consecutive delay.
- Automatic stop after a record duration
- Automatic stop at a desired time and date.

Manual and automatic start can be enabled at the same time. In this particular case the logger will start automatically at the desired time and date, but user can override this by pressing the start button manually.

Sampling rate: from 5 seconds to 24H

Manual Start + delay: enable/disable the manual start by pressing the start button with/without delay up to 99 days. The delay is a period of time where the logger is not yet recording, but waiting. This delay is commonly used when the device is placed in a cooler and it needs a certain time to cool down to the product's temperature. This will avoid false alarms.

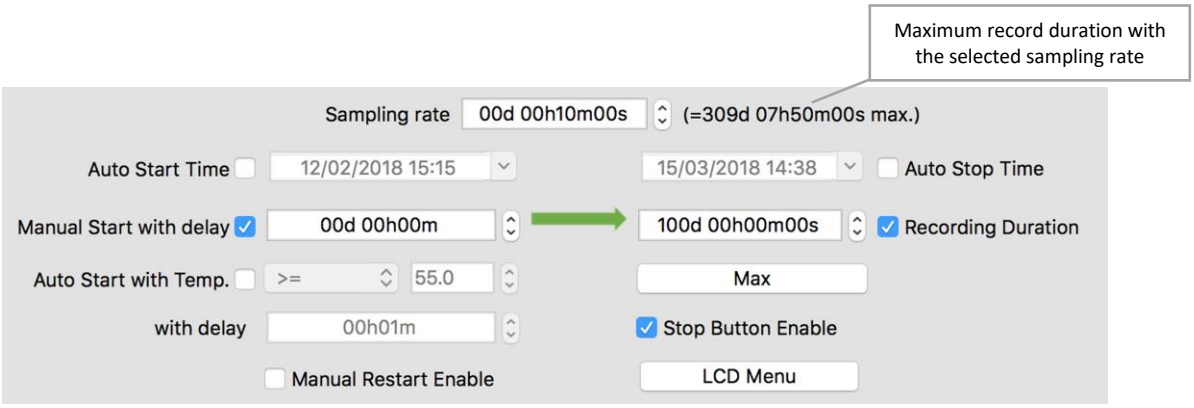
Auto Start Time: enable/disable the automatic start at a preset date and time.

Auto Stop Time: enable/disable the automatic stop at a preset date and time.

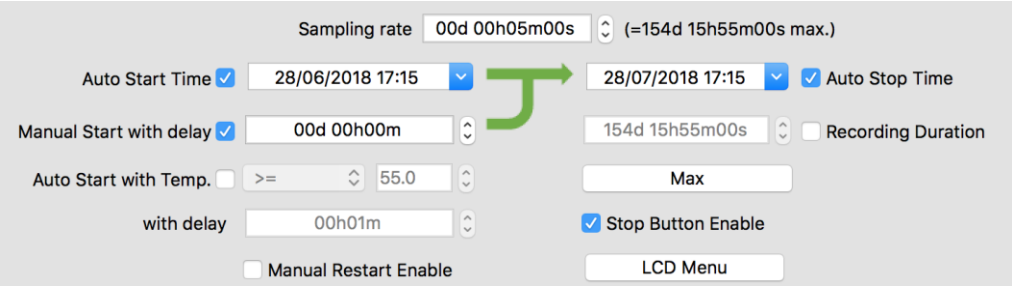
Auto Start Temp. + delay: enable/disable the automatic start with a temperature threshold with/without consecutive delay.

Record Duration: enable/disable the stop after a total record duration. From 5 seconds to 1 year.

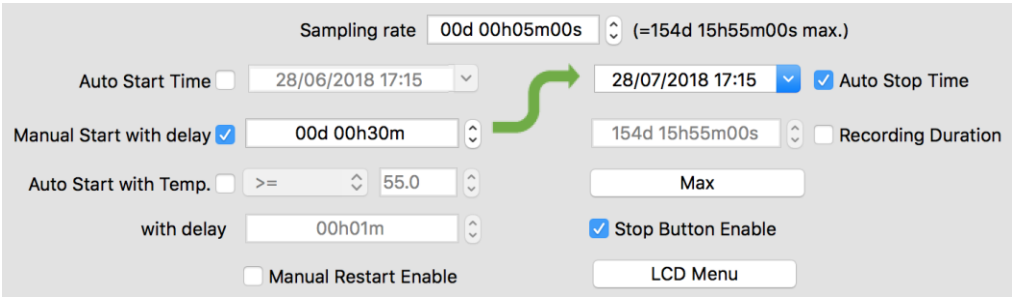
Max button: Automatically set the record duration to its maximum according to the connected device's memory capacity.



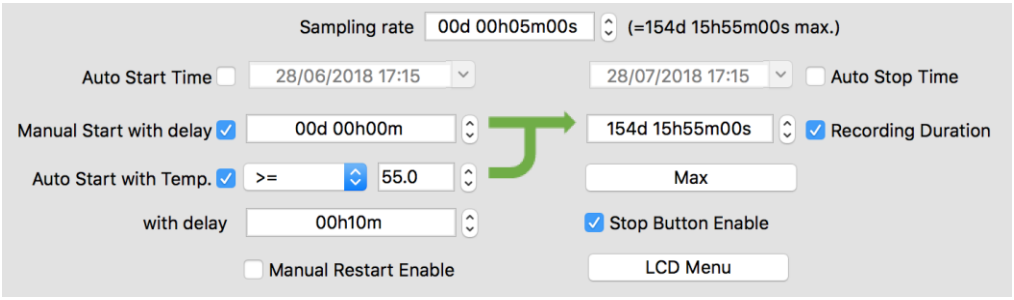
In this example, the logger will start manually by pressing the start button without any delay. The sampling rate is 10 minutes and the logger will stop automatically after 100 days.



In this example, the logger will start automatically at 17H15 on June 28th 2018.
It can also be started manually by pressing the start button without any delay.
The sampling rate is 5 minutes and the logger will stop automatically at 17H15 on July 28, 2018.



In this example, the logger will start manually by pressing the start button with a delay of 30 minutes. The sampling rate is 5 minutes and the logger will stop automatically at 17H15 on June 28, 2018.

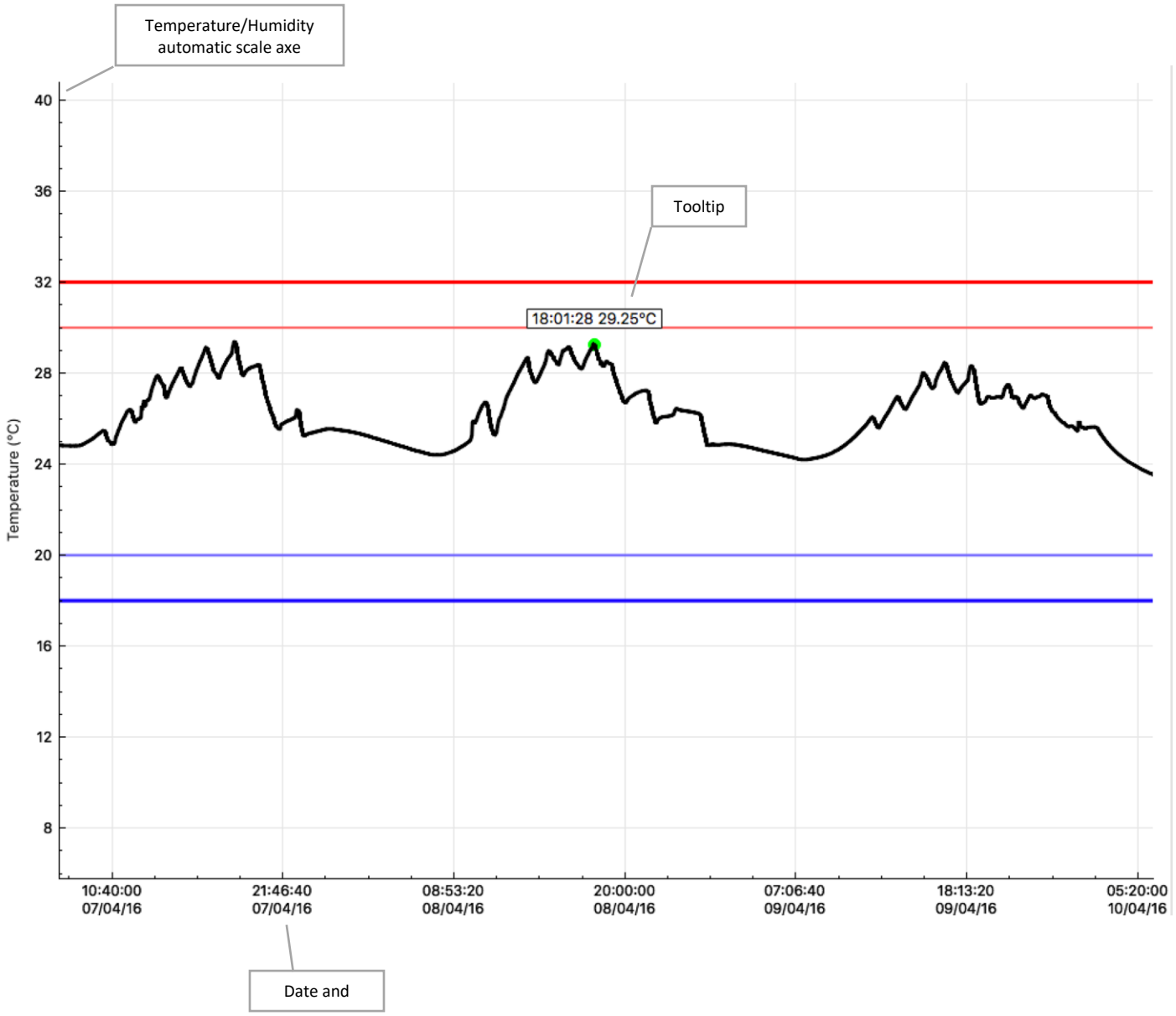


In this example, the logger will start manually by pressing the start button without any delay, or will start automatically if the temperature is greater or equal to 55°C for 10 minutes consecutive. The sampling rate is 5 minutes and the logger will stop automatically after 154 days, 15 hours and 55 minutes.

6. Graph

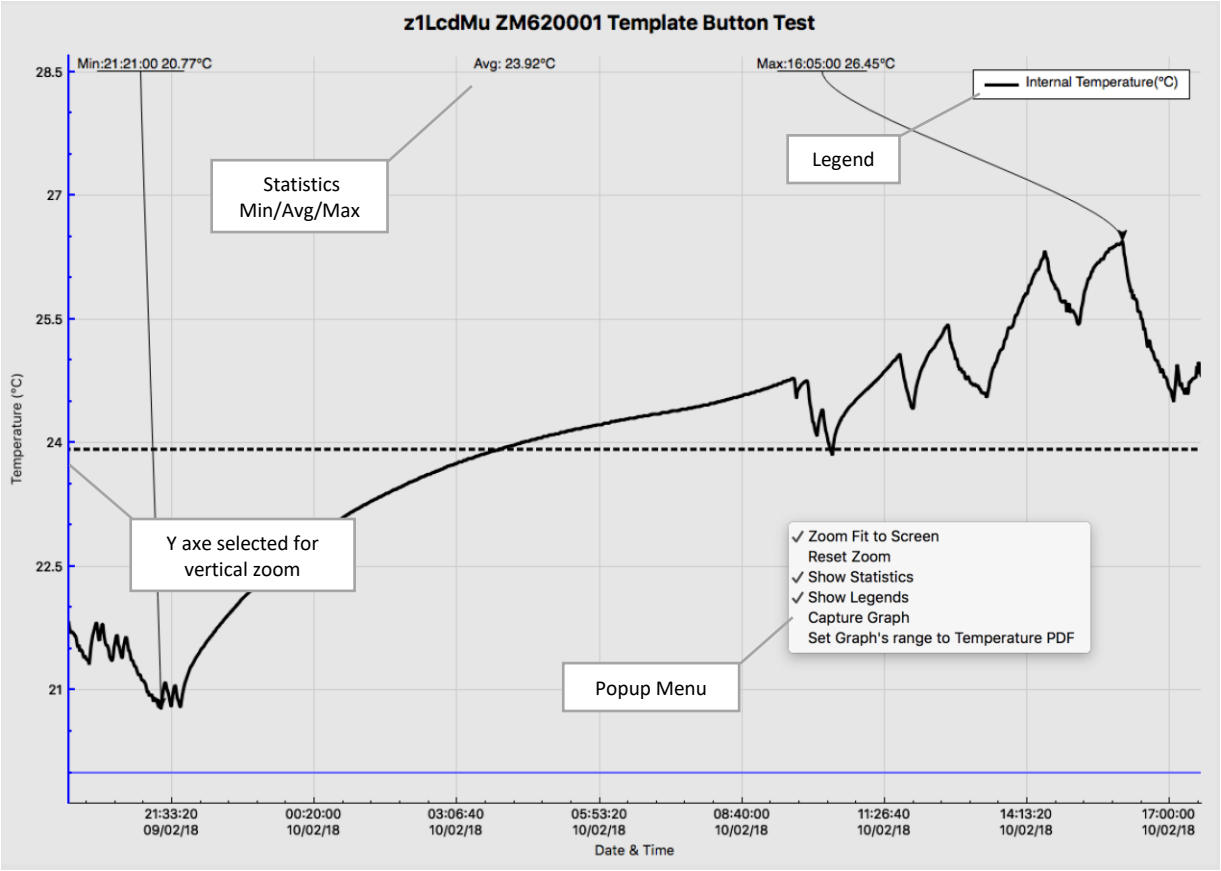
6.1. Presentation

The graph tool is a smart, fast, and smooth graphic interface to navigate, isolate, and view all the relevant information in the records. The appearance is also customizable from the Settings/ Graph section.



6.2. Navigation

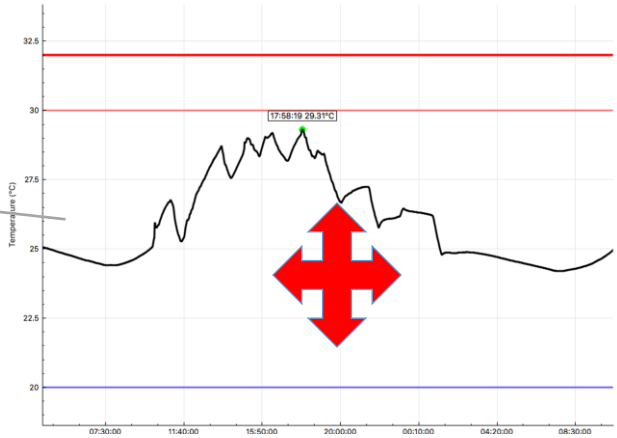
- Mouse left click and hold to move the graph.
- Mouse scroll wheel or two fingers slide for Mac users to zoom in and out.
- Select the X or Y axis to zoom vertically or horizontally.
- Mouse right click to open a quick pop-up menu.
    - **Zoom Fit to Screen:** Adjust the vertical axis to fit the graph or keep the full sensor range.
    - **Reset Zoom:** Go back to the initial zoom.
    - **Show Statistics:** Show the minimum, average, and maximum value pointed with arrows.
    - **Capture Graph:** Copy the graph into the clipboard.



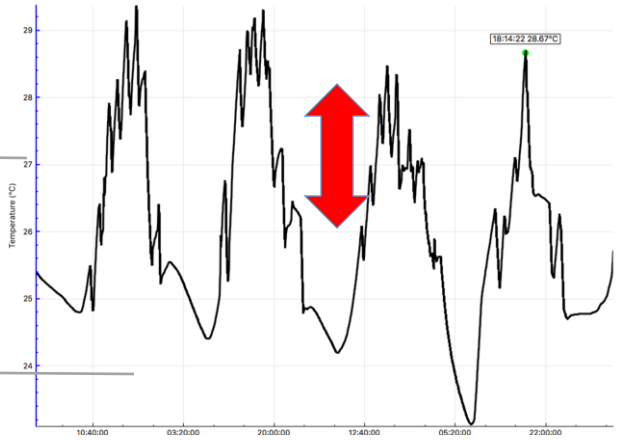
6.3. Zoom

This powerful zoom function allows zooming in and out on both X and Y axes, and also to select the desired axis for zooming only on one axis, X or Y.

The default zoom works on X and Y axes

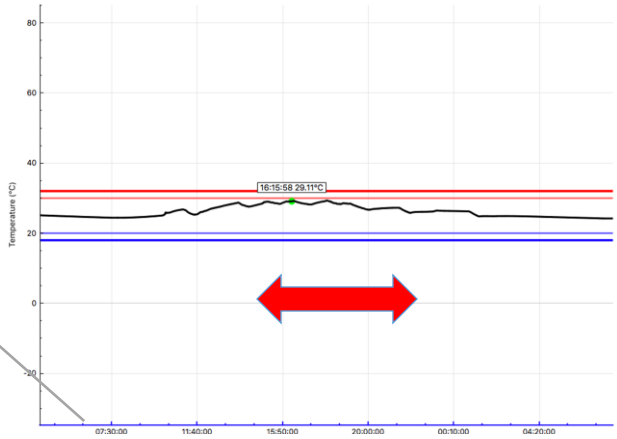


Select the Y axis to set the zoom mode only on the Y axis



Click anywhere inside the graph to deselect the X or Y zoom mode.

Select the X axis to set the zoom mode only on the X axis

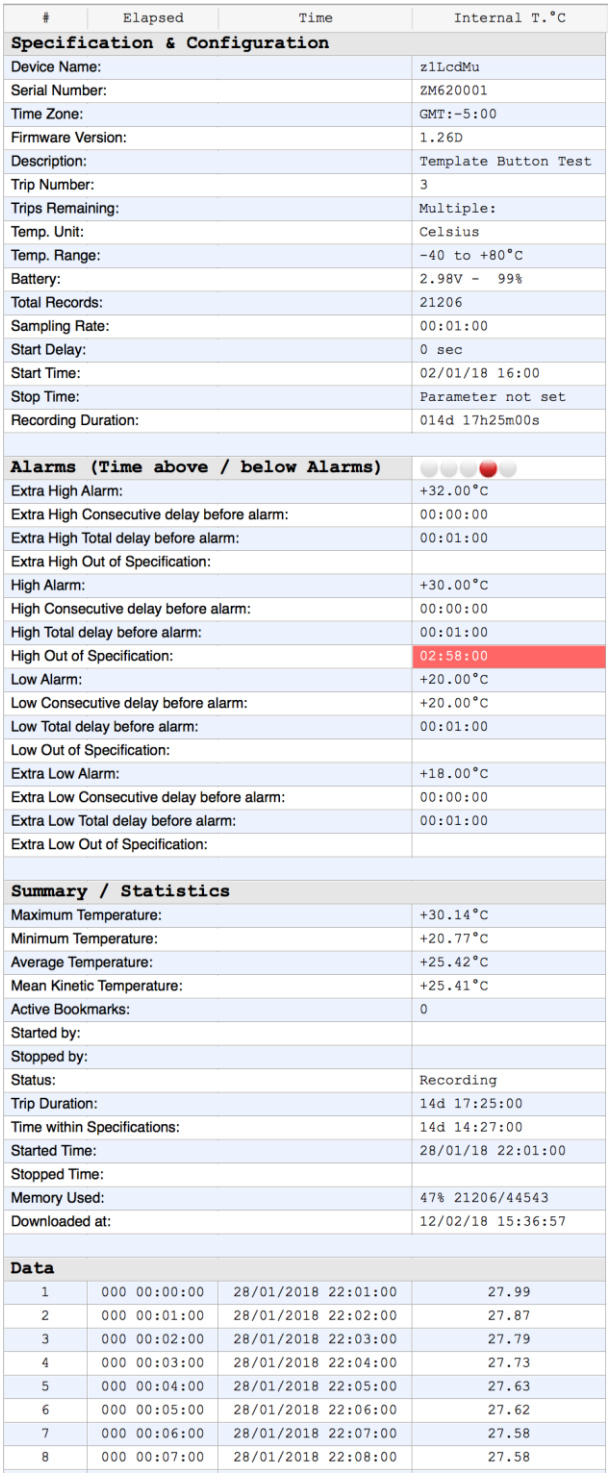


7. Data

7.1. Presentation

The data section is a customizable summary containing all the configuration, statistics, alarm status and recorded data. This summary is composed of four sections that can be enabled or disabled from the Settings/Data section:

1. Specification and Configuration
2. Alarms
3. Summary and Statistics
4. Data



#	Elapsed	Time	Internal T.°C
Specification & Configuration			
Device Name:			z1LcdMu
Serial Number:			ZM620001
Time Zone:			GMT:-5:00
Firmware Version:			1.26D
Description:			Template Button Test
Trip Number:			3
Trips Remaining:			Multiple:
Temp. Unit:			Celsius
Temp. Range:			-40 to +80°C
Battery:			2.98V - 99%
Total Records:			21206
Sampling Rate:			00:01:00
Start Delay:			0 sec
Start Time:			02/01/18 16:00
Stop Time:			Parameter not set
Recording Duration:			014d 17h25m00s
Alarms (Time above / below Alarms)			
Extra High Alarm:			+32.00°C
Extra High Consecutive delay before alarm:			00:00:00
Extra High Total delay before alarm:			00:01:00
Extra High Out of Specification:			
High Alarm:			+30.00°C
High Consecutive delay before alarm:			00:00:00
High Total delay before alarm:			00:01:00
High Out of Specification:			02:58:00
Low Alarm:			+20.00°C
Low Consecutive delay before alarm:			+20.00°C
Low Total delay before alarm:			00:01:00
Low Out of Specification:			
Extra Low Alarm:			+18.00°C
Extra Low Consecutive delay before alarm:			00:00:00
Extra Low Total delay before alarm:			00:01:00
Extra Low Out of Specification:			
Summary / Statistics			
Maximum Temperature:			+30.14°C
Minimum Temperature:			+20.77°C
Average Temperature:			+25.42°C
Mean Kinetic Temperature:			+25.41°C
Active Bookmarks:			0
Started by:			
Stopped by:			
Status:			Recording
Trip Duration:			14d 17:25:00
Time within Specifications:			14d 14:27:00
Started Time:			28/01/18 22:01:00
Stopped Time:			
Memory Used:			47% 21206/44543
Downloaded at:			12/02/18 15:36:57
Data			
1	000 00:00:00	28/01/2018 22:01:00	27.99
2	000 00:01:00	28/01/2018 22:02:00	27.87
3	000 00:02:00	28/01/2018 22:03:00	27.79
4	000 00:03:00	28/01/2018 22:04:00	27.73
5	000 00:04:00	28/01/2018 22:05:00	27.63
6	000 00:05:00	28/01/2018 22:06:00	27.62
7	000 00:06:00	28/01/2018 22:07:00	27.58
8	000 00:07:00	28/01/2018 22:08:00	27.58

7.2. Specification and Configuration

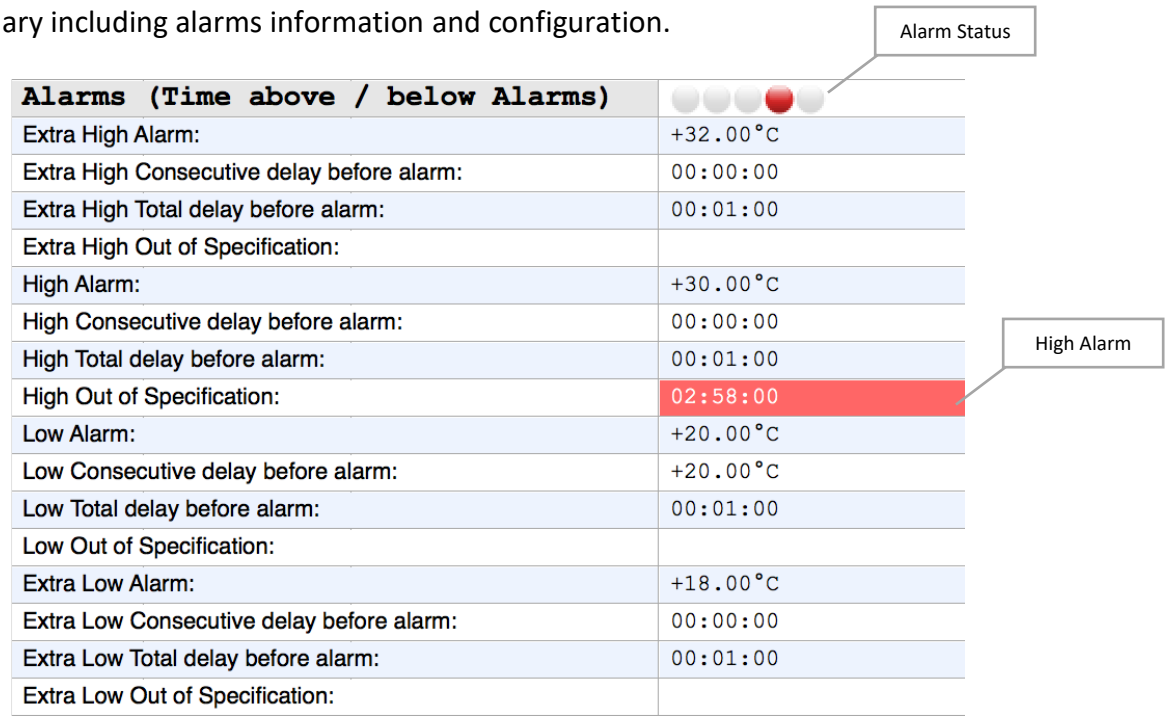
Full summary including device information and configuration.

#	Elapsed	Time	Internal T.°C
Specification & Configuration			
Device Name:			z1LcdMu
Serial Number:			ZM620001
Time Zone:			GMT:-5:00
Firmware Version:			1.26D
Description:			Template Button Test
Trip Number:			3
Trips Remaining:			Multiple:
Temp. Unit:			Celsius
Temp. Range:			-40 to +80°C
Battery:			2.98V - 99%
Total Records:			21206
Sampling Rate:			00:01:00
Start Delay:			0 sec
Start Time:			02/01/18 16:00
Stop Time:			Parameter not set
Recording Duration:			014d 17h25m00s

Device Name: Data Logger's model. Read only.
Serial Number: Data Logger's unique serial number.
Time Zone: Selected time zone during the configuration + DST (Daylight Saving Time).
Firmware Version: Current logger's firmware version.
Description: Data Logger's description.
Trip Number: This is the trip counter. Counted at each logger's Start. Read only.
Trips Remaining: Indicates the remaining number of trips available or Multiple for multi-use loggers.
Temp. Unit: Selected unit of measure for temperature (Celsius or Fahrenheit) during the configuration.
Temp. Range: This is the logger's sensor range. In this example this is a temperature sensor with a range from -40°C to +80°C.
Battery: Current battery voltage and power level indication in percentage.
Total Records: Current number of records stored in the logger's memory.
Sampling Rate: Configured time period between each record sampling.
Start Delay: Configured manual start delay.
Start Time: Automatic configuration start time and date.
Stop Time: Automatic configuration stop time and date.
Record Duration: Total configuration record duration.

7.3. Alarms

Full summary including alarms information and configuration.



Alarms (Time above / below Alarms)	
Extra High Alarm:	+32.00°C
Extra High Consecutive delay before alarm:	00:00:00
Extra High Total delay before alarm:	00:01:00
Extra High Out of Specification:	
High Alarm:	+30.00°C
High Consecutive delay before alarm:	00:00:00
High Total delay before alarm:	00:01:00
High Out of Specification:	02:58:00
Low Alarm:	+20.00°C
Low Consecutive delay before alarm:	+20.00°C
Low Total delay before alarm:	00:01:00
Low Out of Specification:	
Extra Low Alarm:	+18.00°C
Extra Low Consecutive delay before alarm:	00:00:00
Extra Low Total delay before alarm:	00:01:00
Extra Low Out of Specification:	

Very High Alarm: Configuration threshold for the very high alarm.
Very High Consecutive delay before alarm: Consecutive delay above the very high threshold before the very high alarm is triggered.
Very High Total delay before alarm: Cumulative delay above the very high threshold before the very high alarm is triggered.
Very High Out of Specification: Total duration above the very high threshold.

High Alarm: Configuration threshold for the high alarm.
High Consecutive delay before alarm: Consecutive delay above the high threshold before the high alarm is triggered.
High Total delay before alarm: Cumulative delay above the high threshold before the high alarm is triggered.
High Out of Specification: Total duration above the high threshold.

Low Alarm: Configuration threshold for the low alarm.
Low Consecutive delay before alarm: Consecutive delay below the low threshold before the low alarm is triggered.
Low Total delay before alarm: Cumulative delay below the low threshold before the low alarm is triggered.
Low Out of Specification: Total duration below the low threshold.

Very Low Alarm: Configuration threshold for the very low alarm.
Very Low Consecutive delay before alarm: Consecutive delay below the very low threshold before the very low alarm is triggered.
Very Low Total delay before alarm: Cumulative delay below the very low threshold before the very low alarm is triggered.
Very Low Out of Specification: Total duration below the very low threshold.

7.4. Summary and Statistics

Summary regarding the trip statistics, duration and times.

Summary / Statistics	
Maximum Temperature:	+37.03°C
Minimum Temperature:	+8.84°C
Average Temperature:	+25.54°C
Mean Kinetic Temperature:	+25.52°C
Active Bookmarks:	0
Started by:	Manual
Stopped by:	
Status:	Recording
Trip Duration:	9d 23:54:00
Time within Specifications:	09d 23:54:00
Started Time:	01/04/16 13:41:37
Stopped Time:	
Memory Used:	29% 14394/48632
Downloaded at:	17/04/16 14:25:00

Maximum Temperature: Maximum temperature during the whole trip.
Minimum Temperature: Minimum temperature during the whole trip.
Average Temperature: Average temperature during the whole trip.
Mean Kinetic Temperature: MKT of the whole trip using the activation energy set during the configuration.
Active Bookmarks: Number of marker, manually activated by the users.
Started by: How the logger has been started:

- Manual: by pressing the Start button
- Start Timer: by automatic start with time and date.
- Temperature: by automatic start on temperature threshold.

Stopped by: How the logger has been stopped:

- Manual: by pressing the Stop button
- Memory full: the logger reached it maximum memory capacity.
- Reset: the logger went to reset.
- Stop Timer: by automatic stop with time and date.

Status: Current status of the logger:

- Ready: Logger is configured and ready to be started.
- In Start Delay: Logger has been started and actually in started delay countdown.
- Recording: Logger is started in recording.
- Stopped: Logger is not recording anymore. This is end of the trip.

Trip Duration: Current trip duration from the first to the last record.
Time within Specifications: Total duration within the alarm thresholds. (No alarms).
Started Time: Date and Time of the first record
Stopped Time: Date and Time of the last record when the trip is finished.
Memory Used: Indicate the memory usage in % and the number of record in memory/memory size.
Downloaded at: Date and Time of the logger's download.

7.5. Data

The data table contains the records with time stamps.

#	Elapsed	Time	Internal T.°C
Data			
1	000 00:00:00	15/04/2016 22:28:39	28.59
2	000 00:00:05	15/04/2016 22:28:44	28.86
3	000 00:00:10	15/04/2016 22:28:49	28.89
4	000 00:00:15	15/04/2016 22:28:54	28.88
5	000 00:00:20	15/04/2016 22:28:59	28.89
6	000 00:00:25	15/04/2016 22:29:04	28.85
7	000 00:00:30	15/04/2016 22:29:09	28.81
8	000 00:00:35	15/04/2016 22:29:14	28.78
9	000 00:00:40	15/04/2016 22:29:19	28.73
10	000 00:00:45	15/04/2016 22:29:24	28.71

#: Record number starting from #1.

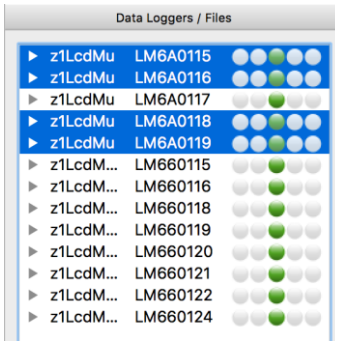
Elapsed: Elapsed time from the first record ddd HH:MM:SS

- ddd: days
- HH: hours
- MM: minutes
- SS: seconds

Time: Record's date and time based on the configuration's time zone.

Internal T.°C Sensor identification in preset temperature unit. (ex: Internal Temperature in degree Celsius).

7.6. Multi-link



When multiple files are selected simultaneously, the DATA Tab contains each selected loggers in columns next to each other's.
To select multiple file keep "Control" button pressed while the files are selected. Or the "Command" button for MAC.
Data are synchronized accordingly to the Multi-ling sync. in the Data Tab of the Settings: (See: ¶3.7)

#	Elapsed	Time	LM6A0115	LM6A0116	LM6A0117	LM6A0118
Specification & Configuration						
Device Name:			z1LcdMu	z1LcdMu	z1LcdMu	z1LcdMu
Serial Number:			LM6A0115	LM6A0116	LM6A0117	LM6A0118
Time Zone:			GMT:+1:00	GMT:+1:00	GMT:+1:00	GMT:+1:00
Firmware Version:			1.22D	1.22D	1.22D	1.22D
Description:						
Trip Number:			2	2	2	2
Trips Remaining:			Multiple:	Multiple:	Multiple:	Multiple:
Temp. Unit:			Celsius	Celsius	Celsius	Celsius
Temp. Range:			-40 to +80°C	-40 to +80°C	-40 to +80°C	-40 to +80°C
Battery:			3.00V - 100%	3.00V - 100%	3.00V - 100%	3.00V - 100%
Total Records:			1921	1921	1921	1921
Sampling Rate:			30 sec	30 sec	30 sec	30 sec
Start Delay:			0 sec	0 sec	0 sec	0 sec
Start Time:			Parameter not set	Parameter not set	Parameter not set	Parameter not set
Stop Time:			Parameter not set	Parameter not set	Parameter not set	Parameter not set
Recording Duration:			000d 16h00m00s	000d 16h00m00s	000d 16h00m00s	000d 16h00m00s
Alarms (Time above / below Alarms)						
Extra High Alarm:			not set	not set	not set	not set
Extra High Consecutive delay before alarm:			not set	not set	not set	not set
Extra High Total delay before alarm:			not set	not set	not set	not set
Extra High Out of Specification:						
High Alarm:			not set	not set	not set	not set
High Consecutive delay before alarm:			not set	not set	not set	not set
High Total delay before alarm:			not set	not set	not set	not set
High Out of Specification:						
Low Alarm:			not set	not set	not set	not set
Low Consecutive delay before alarm:			not set	not set	not set	not set
Low Total delay before alarm:			not set	not set	not set	not set
Low Out of Specification:						
Extra Low Alarm:			not set	not set	not set	not set
Extra Low Consecutive delay before alarm:			not set	not set	not set	not set
Extra Low Total delay before alarm:			not set	not set	not set	not set
Extra Low Out of Specification:						
Summary / Statistics						
Maximum Temperature:			+60.00°C	+59.92°C	+60.04°C	+60.07°C
Minimum Temperature:			-39.59°C	-39.54°C	-39.59°C	-39.54°C
Average Temperature:			+13.19°C	+13.16°C	+13.21°C	+13.20°C
Mean Kinetic Temperature:			+10.35°C	+10.33°C	+10.36°C	+10.35°C
Active Bookmarks:			0	0	0	0
Started by:						
Stopped by:			#Records reached	#Records reached	#Records reached	#Records reached
Status:			Stopped	Stopped	Stopped	Stopped
Trip Duration:			16:00:00	16:00:00	16:00:00	16:00:00
Time within Specifications:			16:00:00	16:00:00	16:00:00	16:00:00
Started Time:			14/02/17 17:14:01	14/02/17 17:14:01	14/02/17 17:14:01	14/02/17 17:14:01
Stopped Time:			15/02/17 09:14:01	15/02/17 09:14:01	15/02/17 09:14:01	15/02/17 09:14:01
Memory Used:			4% 1921/45567	4% 1921/45567	4% 1921/45567	4% 1921/45567
Downloaded at:			12/02/18 17:12:43	12/02/18 17:12:43	12/02/18 17:12:43	12/02/18 17:12:43
Data						
1	000 00:00:00	14/02/2017 17:14:01	57.48	57.06	56.96	56.77
2	000 00:00:30	14/02/2017 17:14:31	57.95	57.60	57.51	57.35
3	000 00:01:00	14/02/2017 17:15:01	58.37	58.05	57.97	57.83
4	000 00:01:30	14/02/2017 17:15:31	58.72	58.45	58.35	58.22
5	000 00:02:00	14/02/2017 17:16:01	59.02	58.80	58.69	58.59
6	000 00:02:30	14/02/2017 17:16:31	59.26	59.06	58.98	58.89
7	000 00:03:00	14/02/2017 17:17:01	59.45	59.29	59.21	59.14
8	000 00:03:30	14/02/2017 17:17:31	59.62	59.48	59.40	59.33

8. Reports Generation

8.1. ZLG Files

ZLG is zLogg's proprietary file format, which contains:

- The data logger information such as type, serial, firmware version…
- The configuration menus including the start and stop conditions, alarms settings…
- All the records.

This file can be saved manually or automatically when the logger is connected.
The data can be accessed after multiple generations/uses of the logger. All data is maintained until the maximum capacity is reached.
This allows the generation of reports without having the logger connected.

8.2. TXT Files

The generated TXT file is basic text file coded with standard ASCII characters and use a TAB character as a separator.
Contains in columns:

- **#:** Record number starting from #1.
- **Elapsed:** Elapsed time from the first record ddd HH:MM:SS
  - ddd: days
  - HH: hours
  - MM: minutes
  - SS: seconds
- **Time:** Records date and time based on the configuration's time zone.
- **Internal T.**°C Sensor identification and temperature unit. (ex: Internal Temperature in degree Celsius).

#	Elapsed	Date	Time	Internal T.°C
1	000 00:00:00	01/04/2016	13:41:37	29.10
2	000 00:01:00	01/04/2016	13:42:37	29.55
3	000 00:02:00	01/04/2016	13:43:37	29.97
4	000 00:03:00	01/04/2016	13:44:37	29.84
5	000 00:04:00	01/04/2016	13:45:37	29.69
6	000 00:05:00	01/04/2016	13:46:37	29.58
7	000 00:06:00	01/04/2016	13:47:37	29.50
8	000 00:07:00	01/04/2016	13:48:37	29.48

8.3. CSV Files

The generated CSV file is a standard Excel format coded with ASCII characters and using a specific character for the column separation. This separator character in accessible from the Settings/General. This is also the default separator if different in some countries.
Ex. Europe uses”**;**“semicolon while USA uses “**,**” comma

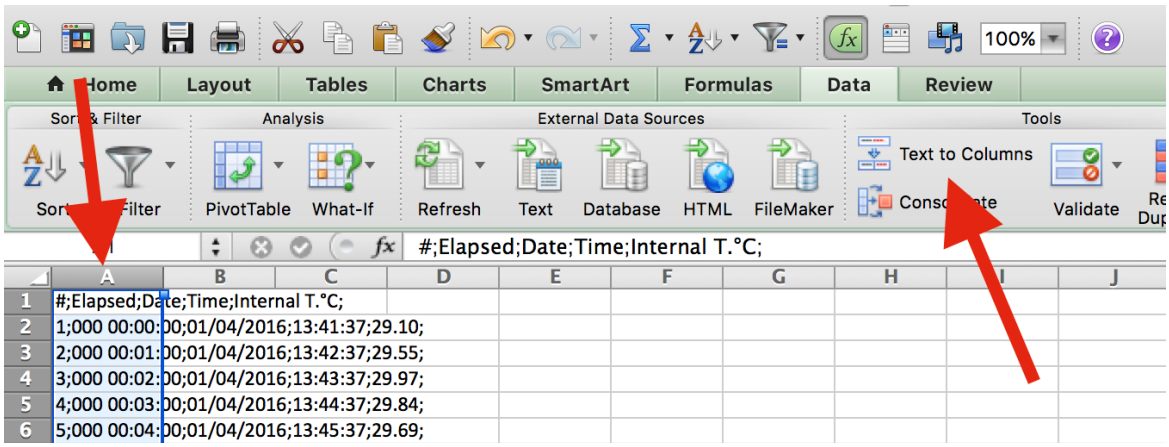
Contains in columns:

- **#:** Record number starting from #1.
- **Elapsed:** Elapsed time from the first record ddd HH:MM:SS
  - ddd: days
  - HH: hours
  - MM: minutes
  - SS: seconds
- **Time:** Records date and time based on the configuration’s time zone.
- **Internal T.**°C Sensor identification and temperature unit. (ex: Internal Temperature in degree Celsius).

	A	B	C	D	E
1	#	Elapsed	Date	Time	Internal T.°C
2	1	000 00:00:00	1/4/16	13:41:37	29.1
3	2	000 00:01:00	1/4/16	13:42:37	29.55
4	3	000 00:02:00	1/4/16	13:43:37	29.97
5	4	000 00:03:00	1/4/16	13:44:37	29.84
6	5	000 00:04:00	1/4/16	13:45:37	29.69
7	6	000 00:05:00	1/4/16	13:46:37	29.58
8	7	000 00:06:00	1/4/16	13:47:37	29.5

How to adjust columns in Excel with the wrong separator:

- Double click on the CSV file to open this file in Excel.
- If the wrong separator is used, all columns will appear to be packed into the first column.
  Select the first column and click on Text to Column in the DATA section.
  Then choose the correct separator.



8.4. PDF Files

The generated PDF file contains all the relevant information in regards to the configuration, alarms, statistics, graph, and histogram… This PDF can be customized from the Settings/PDF section, with one page PDF to multiple pages including the data.

z-Logg.com

Specification & Configuration	
Device Name:	zlLcdMu
Device Type:	Single use Int.Temp.
Serial Number:	ZM630001
Time Zone	GMT:-5 DST
Firmware Version:	1.14B
Trip Number:	9
Trips Remaining:	Multiple
Temp. Unit:	Celsius
Temp. Range:	-40 to +80°C
Battery:	2.95V - 98%
Total Records:	2077
Sampling Rate:	00:01:00
Start Delay:	00:30:00
Start Time:	Parameter not set
Stop Time:	Parameter not set

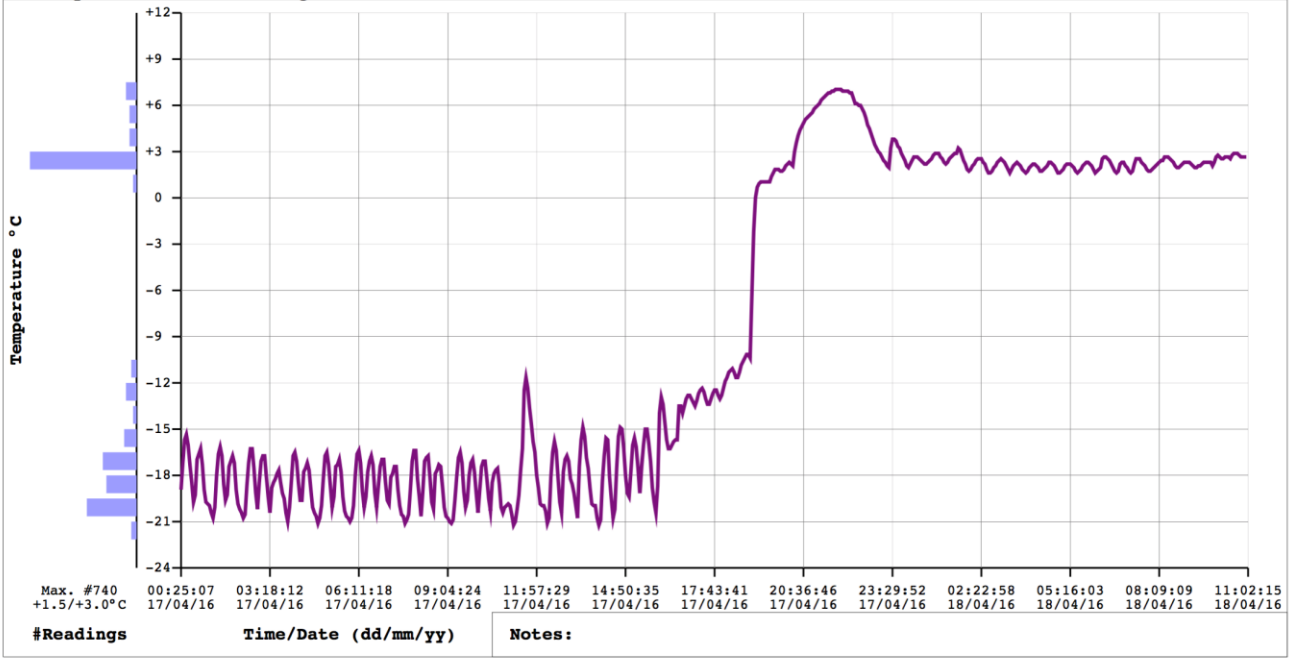
VL L N H VH

ALARM

Alarms (Time above / below Alarms)				
Type:	Temp.	Consecutive	Total	Out of Spec.
VH:	-14.00°C	00:00:00	00:01:00	18:41:00
H:	-16.00°C	00:00:00	00:01:00	19:44:00
L:	-20.00°C	00:00:00	00:01:00	04:45:00
VL:	-22.00°C	00:00:00	00:01:00	00:00:00

Summary / Statistics		File Created at: 18/04/16 13:11:50	
Maximum Temperature:	+7.14°C	Status:	Stopped
Minimum Temperature:	-21.38°C	Trip Duration:	01d 10:37:00
Average Temperature:	-8.27°C	Time within Spec:	10:08:00
Mean Kinetic Temp:	-8.67°C	Started Time:	17/04/16 00:25:07
Active Bookmarks:	0	Stopped Time:	18/04/16 11:02:15
Started by:	Manual	Memory Used:	4% 2077/48632
Stopped by:	Manual		

Description: default settings



#Readings Time/Date (dd/mm/yy) Notes:

This z1Lcd with an accuracy of +/-0.5°C at -40°C to -10°C, +/-0.3°C at -10°C to 80°C (+/-0.9°F at -40°F to 14°F, +/-0.6°F at 14°F to 176°F) and an resolution of 0.01°C (°F) has been calibrated for temperature in zLogg Recorders Calibration Chamber. The reference equipment used is traceable to National Institute of Standards and Technology. Device:#ZM630001

(p.1)

#	ELAPSED	Time	T°C
00001	000 00:00:00	17/04/2016 00:25:07	-20.32
00002	000 00:01:00	17/04/2016 00:26:07	-20.04
00003	000 00:02:00	17/04/2016 00:27:07	-19.53
00004	000 00:03:00	17/04/2016 00:28:07	-18.88
00005	000 00:04:00	17/04/2016 00:29:07	-18.26
00006	000 00:05:00	17/04/2016 00:30:07	-17.68
00007	000 00:06:00	17/04/2016 00:31:07	-17.18
00008	000 00:07:00	17/04/2016 00:32:07	-16.64
00009	000 00:08:00	17/04/2016 00:33:07	-16.14
00010	000 00:09:00	17/04/2016 00:34:07	-15.68
00011	000 00:10:00	17/04/2016 00:35:07	-15.34
00012	000 00:11:00	17/04/2016 00:36:07	-15.41
00013	000 00:12:00	17/04/2016 00:37:07	-15.70
00014	000 00:13:00	17/04/2016 00:38:07	-16.02
00015	000 00:14:00	17/04/2016 00:39:07	-16.32
00016	000 00:15:00	17/04/2016 00:40:07	-16.59
00017	000 00:16:00	17/04/2016 00:41:07	-16.91
00018	000 00:17:00	17/04/2016 00:42:07	-17.30
00019	000 00:18:00	17/04/2016 00:43:07	-17.69
00020	000 00:19:00	17/04/2016 00:44:07	-18.07
00021	000 00:20:00	17/04/2016 00:45:07	-18.43
00022	000 00:21:00	17/04/2016 00:46:07	-18.80
00023	000 00:22:00	17/04/2016 00:47:07	-19.12
00024	000 00:23:00	17/04/2016 00:48:07	-19.43
00025	000 00:24:00	17/04/2016 00:49:07	-19.71
00026	000 00:25:00	17/04/2016 00:50:07	-19.98
00027	000 00:26:00	17/04/2016 00:51:07	-20.27
00028	000 00:27:00	17/04/2016 00:52:07	-20.42
00093	000 01:32:00	17/04/2016 01:57:07	-19.80
00094	000 01:33:00	17/04/2016 01:58:07	-19.16
00095	000 01:34:00	17/04/2016 01:59:07	-18.51
00096	000 01:35:00	17/04/2016 02:00:07	-17.91
00097	000 01:36:00	17/04/2016 02:01:07	-17.42
00098	000 01:37:00	17/04/2016 02:02:07	-17.12
00099	000 01:38:00	17/04/2016 02:03:07	-17.09
00100	000 01:39:00	17/04/2016 02:04:07	-17.02
00101	000 01:40:00	17/04/2016 02:05:07	-16.98
00102	000 01:41:00	17/04/2016 02:06:07	-16.71
00103	000 01:42:00	17/04/2016 02:07:07	-16.79
00104	000 01:43:00	17/04/2016 02:08:07	-17.17
00105	000 01:44:00	17/04/2016 02:09:07	-17.60
00106	000 01:45:00	17/04/2016 02:10:07	-18.05
00107	000 01:46:00	17/04/2016 02:11:07	-18.48
00108	000 01:47:00	17/04/2016 02:12:07	-18.88
00109	000 01:48:00	17/04/2016 02:13:07	-19.23
00110	000 01:49:00	17/04/2016 02:14:07	-19.58
00111	000 01:50:00	17/04/2016 02:15:07	-19.79
00112	000 01:51:00	17/04/2016 02:16:07	-19.92
00113	000 01:52:00	17/04/2016 02:17:07	-20.01
00114	000 01:53:00	17/04/2016 02:18:07	-20.07
00115	000 01:54:00	17/04/2016 02:19:07	-20.10
00116	000 01:55:00	17/04/2016 02:20:07	-20.13
00117	000 01:56:00	17/04/2016 02:21:07	-20.19
00118	000 01:57:00	17/04/2016 02:22:07	-20.32
00119	000 01:58:00	17/04/2016 02:23:07	-20.50
00120	000 01:59:00	17/04/2016 02:24:07	-20.69
00185	000 03:04:00	17/04/2016 03:29:07	-18.34
00186	000 03:05:00	17/04/2016 03:30:07	-18.27
00187	000 03:06:00	17/04/2016 03:31:07	-18.22
00188	000 03:07:00	17/04/2016 03:32:07	-18.15
00189	000 03:08:00	17/04/2016 03:33:07	-18.09
00190	000 03:09:00	17/04/2016 03:34:07	-17.83
00191	000 03:10:00	17/04/2016 03:35:07	-17.61
00192	000 03:11:00	17/04/2016 03:36:07	-17.79
00193	000 03:12:00	17/04/2016 03:37:07	-18.14
00194	000 03:13:00	17/04/2016 03:38:07	-18.42
00195	000 03:14:00	17/04/2016 03:39:07	-18.66
00196	000 03:15:00	17/04/2016 03:40:07	-18.84
00197	000 03:16:00	17/04/2016 03:41:07	-18.98
00198	000 03:17:00	17/04/2016 03:42:07	-19.09
00199	000 03:18:00	17/04/2016 03:43:07	-19.20
00200	000 03:19:00	17/04/2016 03:44:07	-19.29
00201	000 03:20:00	17/04/2016 03:45:07	-19.46
00202	000 03:21:00	17/04/2016 03:46:07	-19.67
00203	000 03:22:00	17/04/2016 03:47:07	-19.91
00204	000 03:23:00	17/04/2016 03:48:07	-20.14
00205	000 03:24:00	17/04/2016 03:49:07	-20.42
00206	000 03:25:00	17/04/2016 03:50:07	-20.66
00207	000 03:26:00	17/04/2016 03:51:07	-20.88
00208	000 03:27:00	17/04/2016 03:52:07	-21.00
00209	000 03:28:00	17/04/2016 03:53:07	-21.00
00210	000 03:29:00	17/04/2016 03:54:07	-20.95
00211	000 03:30:00	17/04/2016 03:55:07	-20.90
00212	000 03:31:00	17/04/2016 03:56:07	-20.82
00277	000 04:36:00	17/04/2016 05:01:07	-19.85
00278	000 04:37:00	17/04/2016 05:02:07	-19.29
00279	000 04:38:00	17/04/2016 05:03:07	-18.77
00280	000 04:39:00	17/04/2016 05:04:07	-18.24
00281	000 04:40:00	17/04/2016 05:05:07	-17.80
00282	000 04:41:00	17/04/2016 05:06:07	-17.31
00283	000 04:42:00	17/04/2016 05:07:07	-16.89
00284	000 04:43:00	17/04/2016 05:08:07	-16.66
00285	000 04:44:00	17/04/2016 05:09:07	-16.51
00286	000 04:45:00	17/04/2016 05:10:07	-16.46
00287	000 04:46:00	17/04/2016 05:11:07	-16.79
00288	000 04:47:00	17/04/2016 05:12:07	-17.26
00289	000 04:48:00	17/04/2016 05:13:07	-17.74
00290	000 04:49:00	17/04/2016 05:14:07	-18.18
00291	000 04:50:00	17/04/2016 05:15:07	-18.65
00292	000 04:51:00	17/04/2016 05:16:07	-19.05
00293	000 04:52:00	17/04/2016 05:17:07	-19.40
00294	000 04:53:00	17/04/2016 05:18:07	-19.75
00295	000 04:54:00	17/04/2016 05:19:07	-20.05
00296	000 04:55:00	17/04/2016 05:20:07	-20.38
00297	000 04:56:00	17/04/2016 05:21:07	-20.67
00298	000 04:57:00	17/04/2016 05:22:07	-20.78
00299	000 04:58:00	17/04/2016 05:23:07	-20.52
00300	000 04:59:00	17/04/2016 05:24:07	-19.97
00301	000 05:00:00	17/04/2016 05:25:07	-19.34
00302	000 05:01:00	17/04/2016 05:26:07	-18.71
00303	000 05:02:00	17/04/2016 05:27:07	-18.11
00304	000 05:03:00	17/04/2016 05:28:07	-17.64

Specification & Configuration	
Device Name:	z1LcdMu
Device Type:	Single use Int.Temp.
Serial Number:	ZM630001
Time Zone	GMT:-5 DST
Firmware Version:	1.14B
Trip Number:	9
Trips Remaining:	Multiple
Temp. Unit:	Celsius
Temp. Range:	-40 to +80°C
Battery:	2.95V - 98%
Total Records:	2077
Sampling Rate:	00:01:00
Start Delay:	00:30:00
Start Time:	Parameter not set
Stop Time:	Parameter not set

Device Name: Data Logger's model. Read only.
Serial Number: Data Logger's unique serial number.
Time Zone: Selected time zone during the configuration + DST (Daylight Saving Time).
Firmware Version: Current logger's firmware version.
Trip Number: This is the trip counter. Counted at each logger's Start. Read only.
Trips Remaining: Indicates the remaining number of trips available or Multiple for multi-use loggers.
Temp. Unit: Selected temperature unit of measure (Celsius or Fahrenheit) during the configuration.
Temp. Range: This is the logger's sensor range. In this example this is a temperature sensor with a range from -40°C to +80°C.
Battery: Current battery voltage and power level indication in %.
Total Records: Current number of records stored in the logger's memory.
Sampling Rate: Configured period between each record sampled.
Start Delay: Configured manual start delay.
Start Time: Automatic configuration start time and date.
Stop Time: Automatic configuration stop time and date.

Alarms (Time above / below Alarms)				
Type:	**Temp.**	**Consecutive**	**Total**	**Out of Spec.**
VH:	-14.00°C	00:00:00	00:01:00	18:41:00
H:	-16.00°C	00:00:00	00:01:00	19:44:00
L:	-20.00°C	00:00:00	00:01:00	04:45:00
VL:	-22.00°C	00:00:00	00:01:00	00:00:00

Type: Very High, High, Low and Very Low.
Temp: Alarm threshold.
Consecutive: Consecutive delay (see detail in ¶6.3)
Total: Cumulative delay (see detail in ¶6.3)
Out of Specification: Total duration out of the alarm threshold.

Summary / Statistics		File Created at: 18/04/16 13:11:50	
Maximum Temperature:	+7.14°C	Status:	Stopped
Minimum Temperature:	-21.38°C	Trip Duration:	01d 10:37:00
Average Temperature:	-8.27°C	Time within Spec:	10:08:00
Mean Kinetic Temp:	-8.67°C	Started Time:	17/04/16 00:25:07
Active Bookmarks:	0	Stopped Time:	18/04/16 11:02:15
Started by:	Manual	Memory Used:	4% 2077/48632
Stopped by:	Manual		

Maximum Temperature: Maximum temperature during the whole trip.
Minimum Temperature: Minimum temperature during the whole trip.
Average Temperature: Average temperature during the whole trip.
Mean Kinetic Temperature: MKT of the whole trip using the activation energy set during the configuration.
Active Bookmarks: Number of marker, manually activated by the users.
Started by: How the logger has been started:

- Manual: by pressing the Start button
- Start Timer: by automatic start with time and date.
- Temperature: by automatic start on temperature threshold.

Stopped by: How the logger has been stopped:

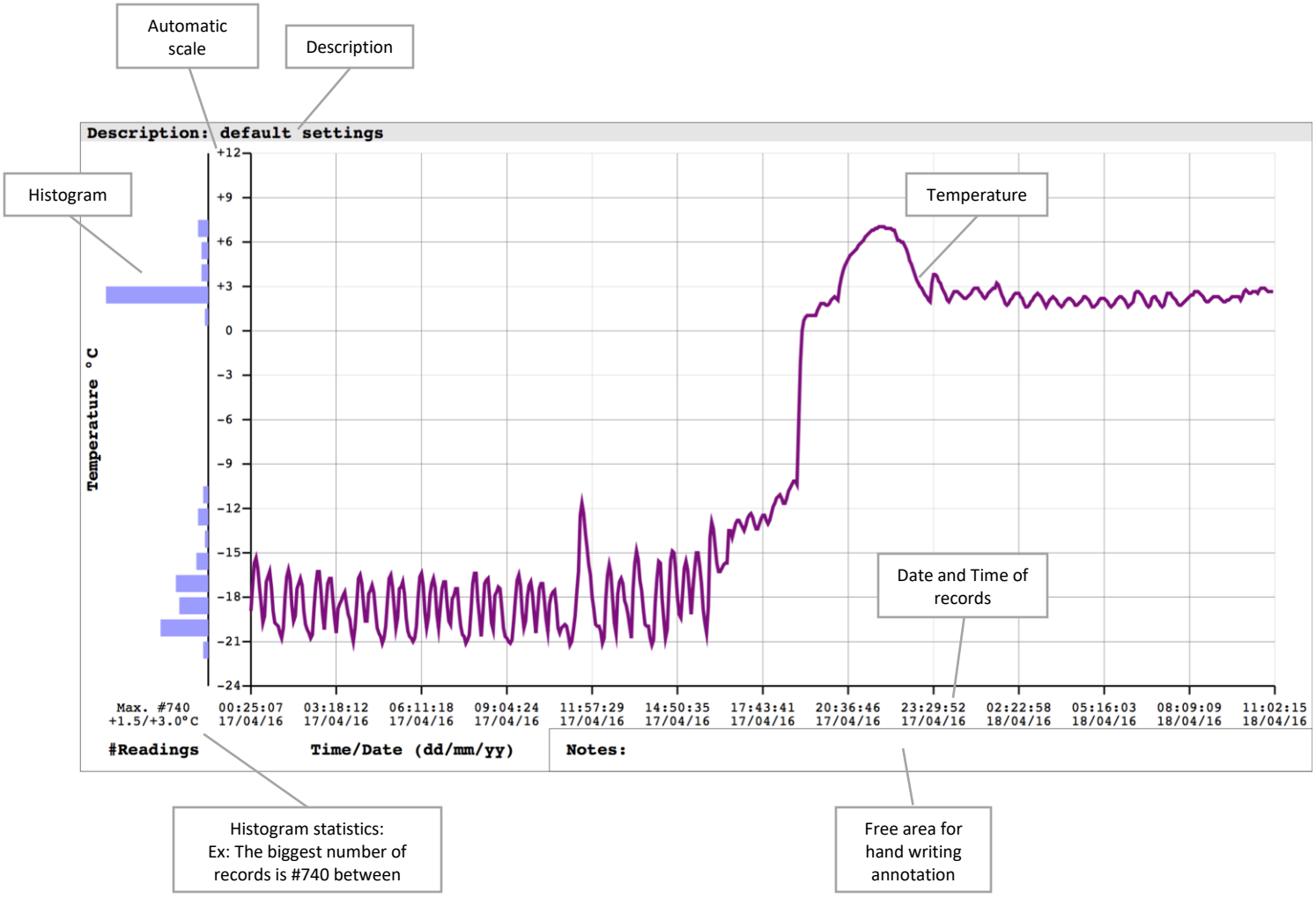
- Manual: by pressing the Stop button
- Memory full: the logger reached it maximum memory capacity.
- Reset: the logger went to reset.
- Stop Timer: by automatic stop with time and date.

Status: Current status of the logger:

- Ready: Logger is configured and ready to be started.
- In Start Delay: Logger has been started and actually in started delay countdown.
- Recording: Logger is started in recording.
- Stopped: Logger is not recording anymore. This is end of the trip.

Trip Duration: Current trip duration from the first to the last record.
Time within Specifications: Total duration within the alarm thresholds. No alarms.
Started Time: Date and Time of the first record
Stopped Time: Date and Time of the last record if the trip is finished.
Memory Used: Indicate the memory usage in percentage and the number of record in memory/memory size.
File Created at: Document creation Date and Time.

Reports Generation



#	ELAPSED	Time	T° C
00001	000 00:00:00	17/04/2016 00:25:07	-20.32
00002	000 00:01:00	17/04/2016 00:26:07	-20.04
00003	000 00:02:00	17/04/2016 00:27:07	-19.53
00004	000 00:03:00	17/04/2016 00:28:07	-18.88
00005	000 00:04:00	17/04/2016 00:29:07	-18.26
00006	000 00:05:00	17/04/2016 00:30:07	-17.68
00007	000 00:06:00	17/04/2016 00:31:07	-17.18
00008	000 00:07:00	17/04/2016 00:32:07	-16.64
00009	000 00:08:00	17/04/2016 00:33:07	-16.14
00010	000 00:09:00	17/04/2016 00:34:07	-15.68
00011	000 00:10:00	17/04/2016 00:35:07	-15.34
00012	000 00:11:00	17/04/2016 00:36:07	-15.41
00013	000 00:12:00	17/04/2016 00:37:07	-15.70
00014	000 00:13:00	17/04/2016 00:38:07	-16.02
00015	000 00:14:00	17/04/2016 00:39:07	-16.32
00016	000 00:15:00	17/04/2016 00:40:07	-16.59
00017	000 00:16:00	17/04/2016 00:41:07	-16.91
00018	000 00:17:00	17/04/2016 00:42:07	-17.30

#	ELAPSED	Time	T° C
00093	000 01:32:00	17/04/2016 01:57:07	-19.80
00094	000 01:33:00	17/04/2016 01:58:07	-19.16
00095	000 01:34:00	17/04/2016 01:59:07	-18.51
00096	000 01:35:00	17/04/2016 02:00:07	-17.91
00097	000 01:36:00	17/04/2016 02:01:07	-17.42
00098	000 01:37:00	17/04/2016 02:02:07	-17.12
00099	000 01:38:00	17/04/2016 02:03:07	-17.09
00100	000 01:39:00	17/04/2016 02:04:07	-17.02
00101	000 01:40:00	17/04/2016 02:05:07	-16.98
00102	000 01:41:00	17/04/2016 02:06:07	-16.71
00103	000 01:42:00	17/04/2016 02:07:07	-16.79
00104	000 01:43:00	17/04/2016 02:08:07	-17.17
00105	000 01:44:00	17/04/2016 02:09:07	-17.60
00106	000 01:45:00	17/04/2016 02:10:07	-18.05
00107	000 01:46:00	17/04/2016 02:11:07	-18.48
00108	000 01:47:00	17/04/2016 02:12:07	-18.88
00109	000 01:48:00	17/04/2016 02:13:07	-19.23
00110	000 01:49:00	17/04/2016 02:14:07	-19.58

#	ELAPSED	Time	T° C
00185	000 03:04:00	17/04/2016 03:29:07	-18.34
00186	000 03:05:00	17/04/2016 03:30:07	-18.27
00187	000 03:06:00	17/04/2016 03:31:07	-18.22
00188	000 03:07:00	17/04/2016 03:32:07	-18.15
00189	000 03:08:00	17/04/2016 03:33:07	-18.09
00190	000 03:09:00	17/04/2016 03:34:07	-17.83
00191	000 03:10:00	17/04/2016 03:35:07	-17.61
00192	000 03:11:00	17/04/2016 03:36:07	-17.79
00193	000 03:12:00	17/04/2016 03:37:07	-18.14
00194	000 03:13:00	17/04/2016 03:38:07	-18.42
00195	000 03:14:00	17/04/2016 03:39:07	-18.66
00196	000 03:15:00	17/04/2016 03:40:07	-18.84
00197	000 03:16:00	17/04/2016 03:41:07	-18.98
00198	000 03:17:00	17/04/2016 03:42:07	-19.09
00199	000 03:18:00	17/04/2016 03:43:07	-19.20
00200	000 03:19:00	17/04/2016 03:44:07	-19.29
00201	000 03:20:00	17/04/2016 03:45:07	-19.46
00202	000 03:21:00	17/04/2016 03:46:07	-19.67

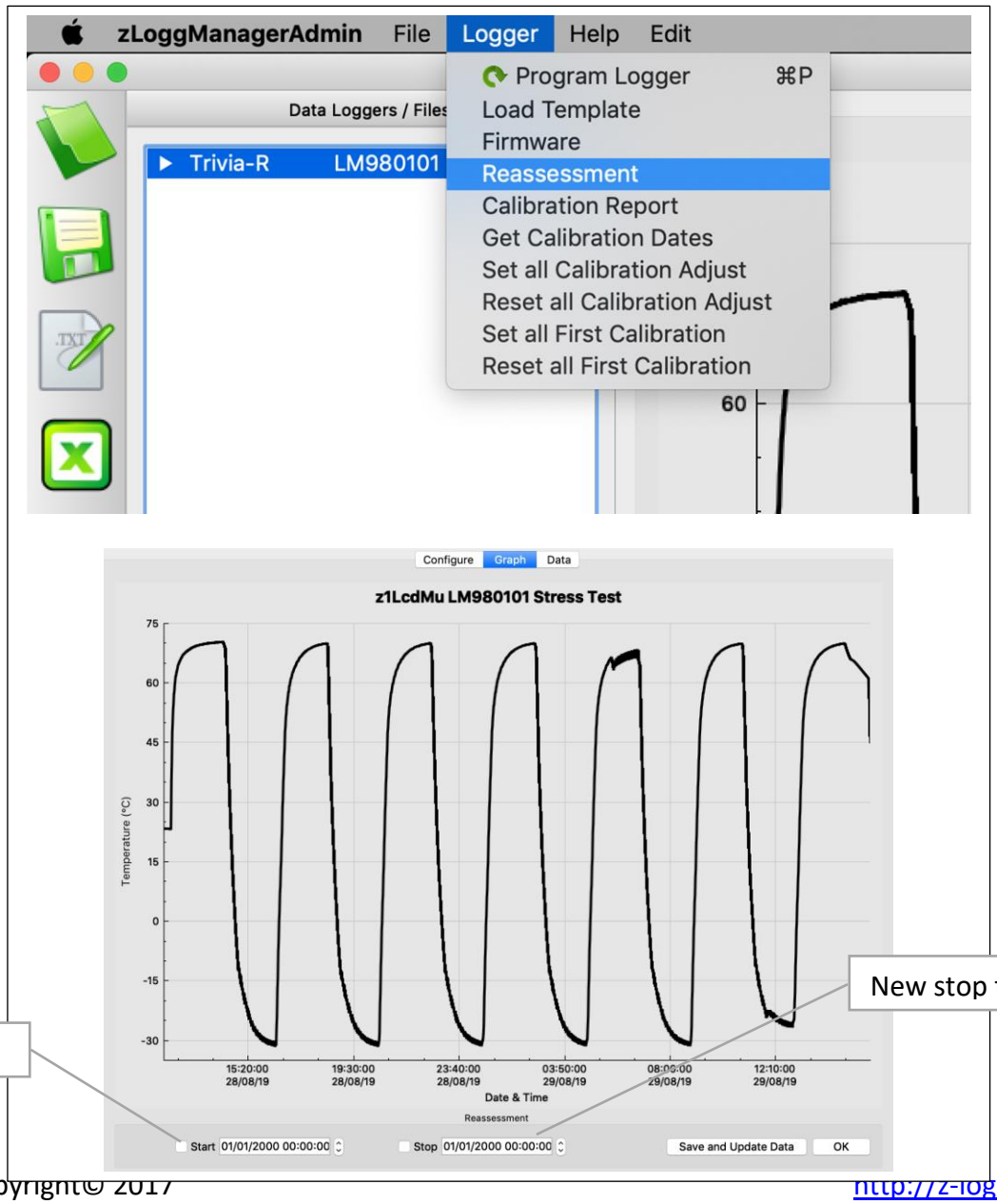
#	ELAPSED	Time	T° C
00277	000 04:36:00	17/04/2016 05:01:07	-19.85
00278	000 04:37:00	17/04/2016 05:02:07	-19.29
00279	000 04:38:00	17/04/2016 05:03:07	-18.77
00280	000 04:39:00	17/04/2016 05:04:07	-18.24
00281	000 04:40:00	17/04/2016 05:05:07	-17.80
00282	000 04:41:00	17/04/2016 05:06:07	-17.31
00283	000 04:42:00	17/04/2016 05:07:07	-16.89
00284	000 04:43:00	17/04/2016 05:08:07	-16.66
00285	000 04:44:00	17/04/2016 05:09:07	-16.51
00286	000 04:45:00	17/04/2016 05:10:07	-16.46
00287	000 04:46:00	17/04/2016 05:11:07	-16.79
00288	000 04:47:00	17/04/2016 05:12:07	-17.26
00289	000 04:48:00	17/04/2016 05:13:07	-17.74
00290	000 04:49:00	17/04/2016 05:14:07	-18.18
00291	000 04:50:00	17/04/2016 05:15:07	-18.65
00292	000 04:51:00	17/04/2016 05:16:07	-19.05
00293	000 04:52:00	17/04/2016 05:17:07	-19.40
00294	000 04:53:00	17/04/2016 05:18:07	-19.75

- **#:** Record number starting from #1.
- **Elapsed:** Elapsed time from the first record ddd HH:MM:SS
  - ddd: days
  - HH: hours
  - MM: minutes
  - SS: seconds
- **Time:** Record's date and time based on the configuration's time zone.
- **T.°C** Sensor identification a& temperature unit. (ex: Temperature in degrees Celsius).

8.5. Reassessment

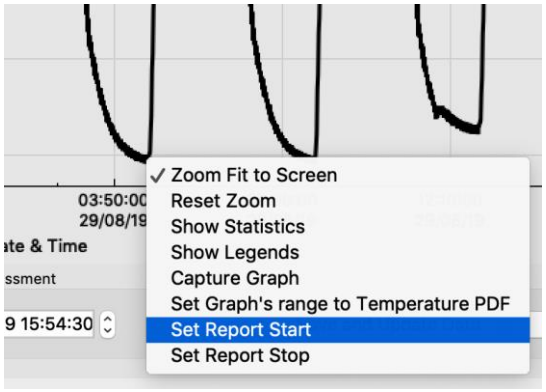
The reassessment function allows the user to select the start and stop time of an existing file. Also, the alarm settings such as the thresholds and alarm delays. Then save this new file and generate a new report (PDF, CSV, TXT) base on these new start and stop.
The data are not lost, and the user can at any time remove these new start and stop or change it. However, the originals alarm settings are lost and overwritten with the new ones, they are maintained in the original ZLG file.

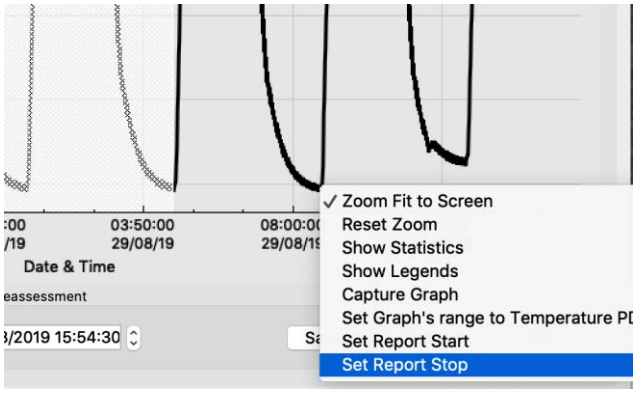
- Open an existing ZLG file. (Menu File Open or Drag and Drop the file)
- Menu Logger Reassessment.

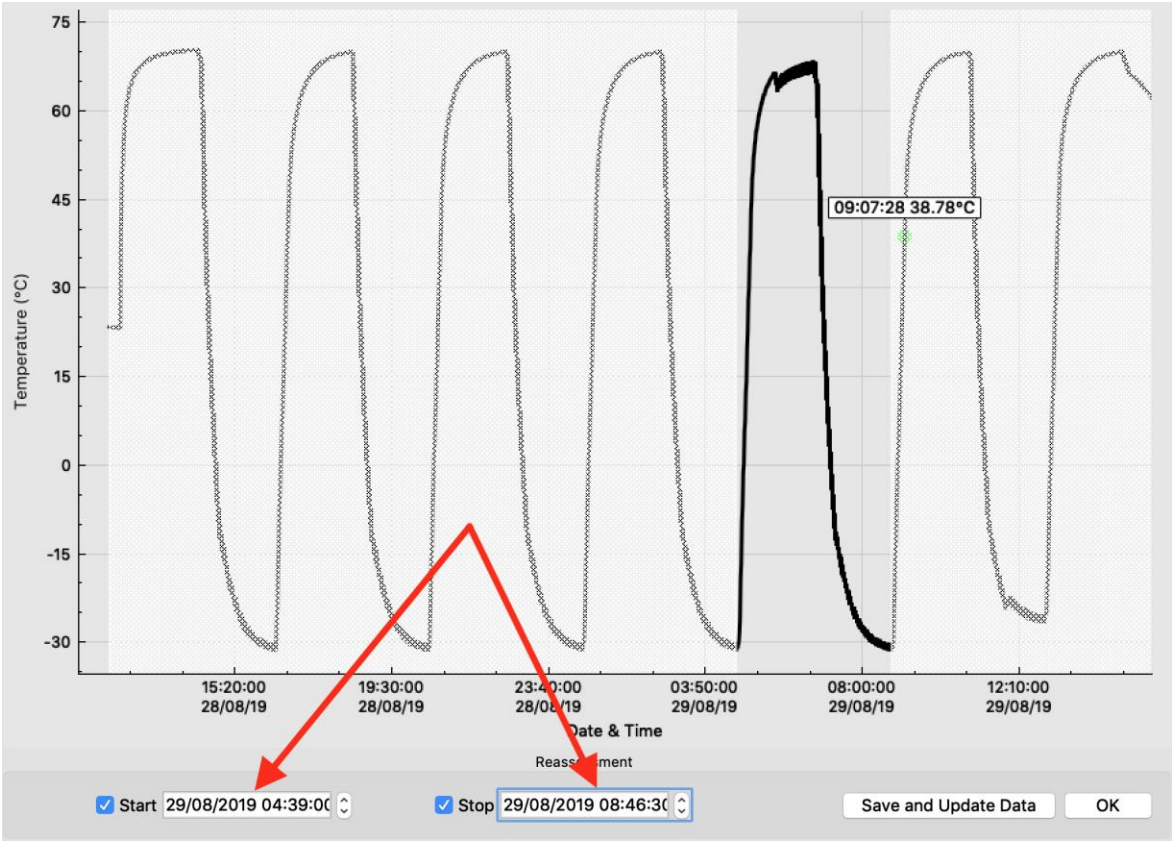


Reports Generation

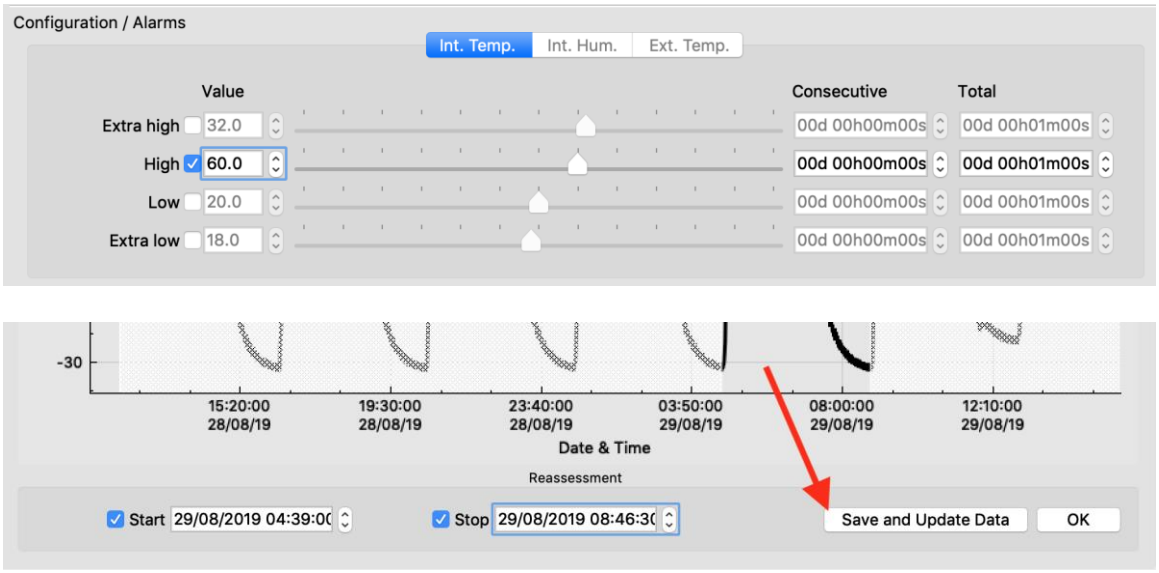
- Right click on the graph to open the popup menu, and select “Set Report Start”
- Then right click on the graph to open the popup menu, and select “Set Report Stop”
- Start and Stop time can also be adjusted directly from the controls.

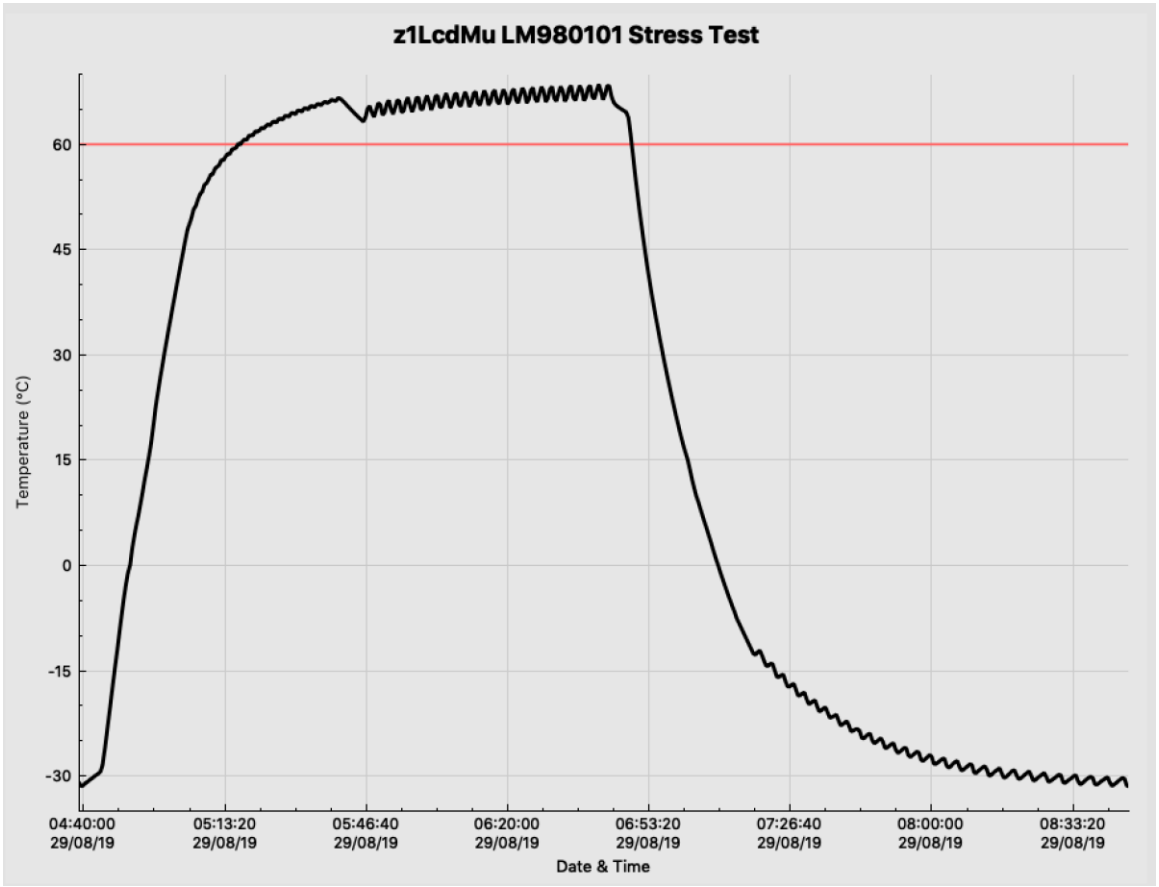






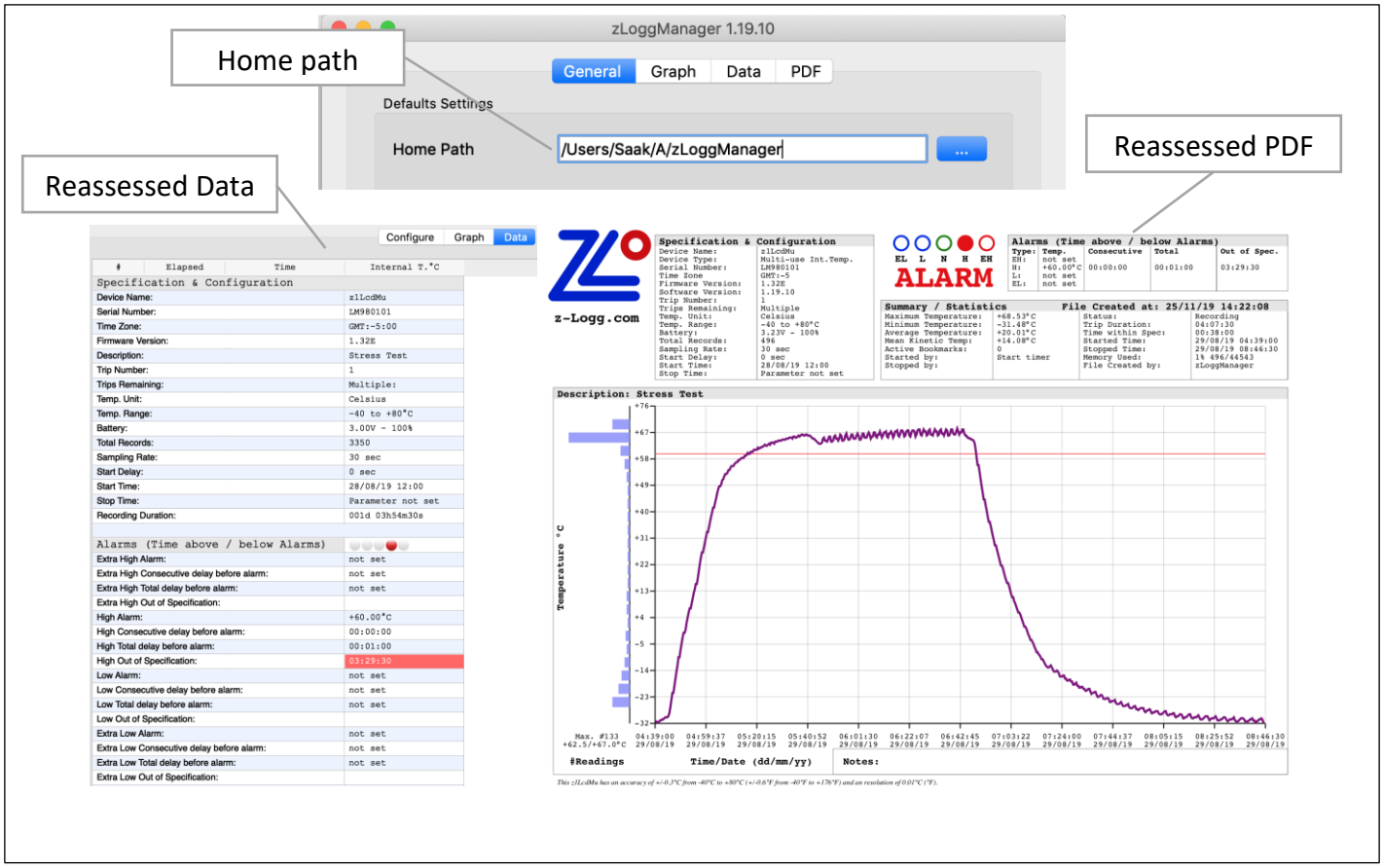
- Alarms can be enabled, disabled or changed too.
  In the current example the high alarm is enabled and set to 60°C with 1 min. of total delay.
- To validate and start the reassessment, click on the “Save and Update Data” button from the graph tab.





Reports Generation

- The new ZLG file including the reassessment is created and saved in the home path set in the Settings.
- Once the reassessment is applied, the data are automatically updated accordingly with the new Start and Stop and alarms settings. PDF, CSV and Text file can also be generated.



To change or cancel the reassessment:

- Open the reassessed ZLG file.
- Menu Logger Reassessment.
- Apply the changes or disable the reassessed Start and Stop time.
- Click on the “Save and Update Data” button to save the modifications.

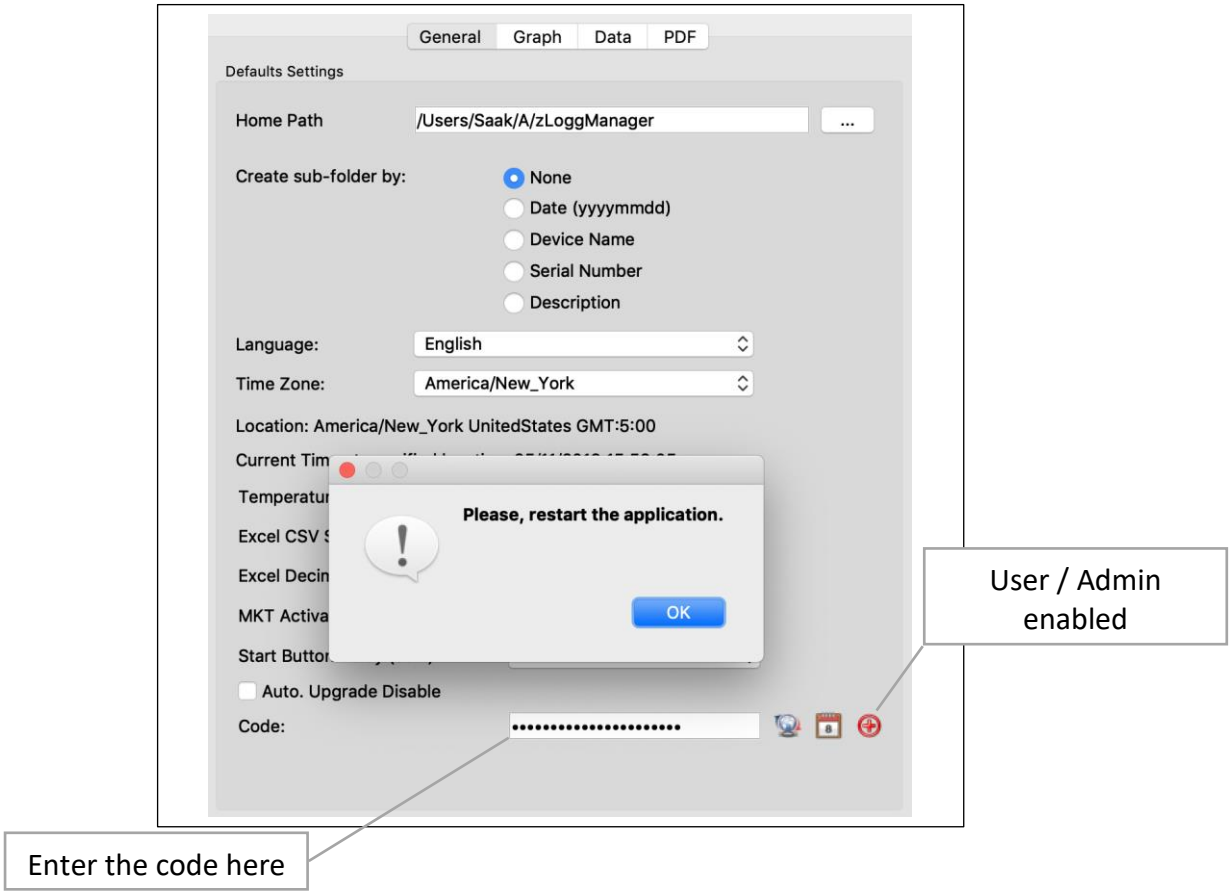
9. User / Admin

9.1. Presentation

The User / Admin module enables login and securities options running on a local computer.
Once activated, the application asks for a user authentication to enable authorized functions related to the current user's privileges. The administrator can create, delete, enable, disable users.
Each user has privileges such as Admin., Configure, Download, View.
All actions are saved and accessible from an audit trail.
A backup and restore function is available that includes all the existing users and audit trails.

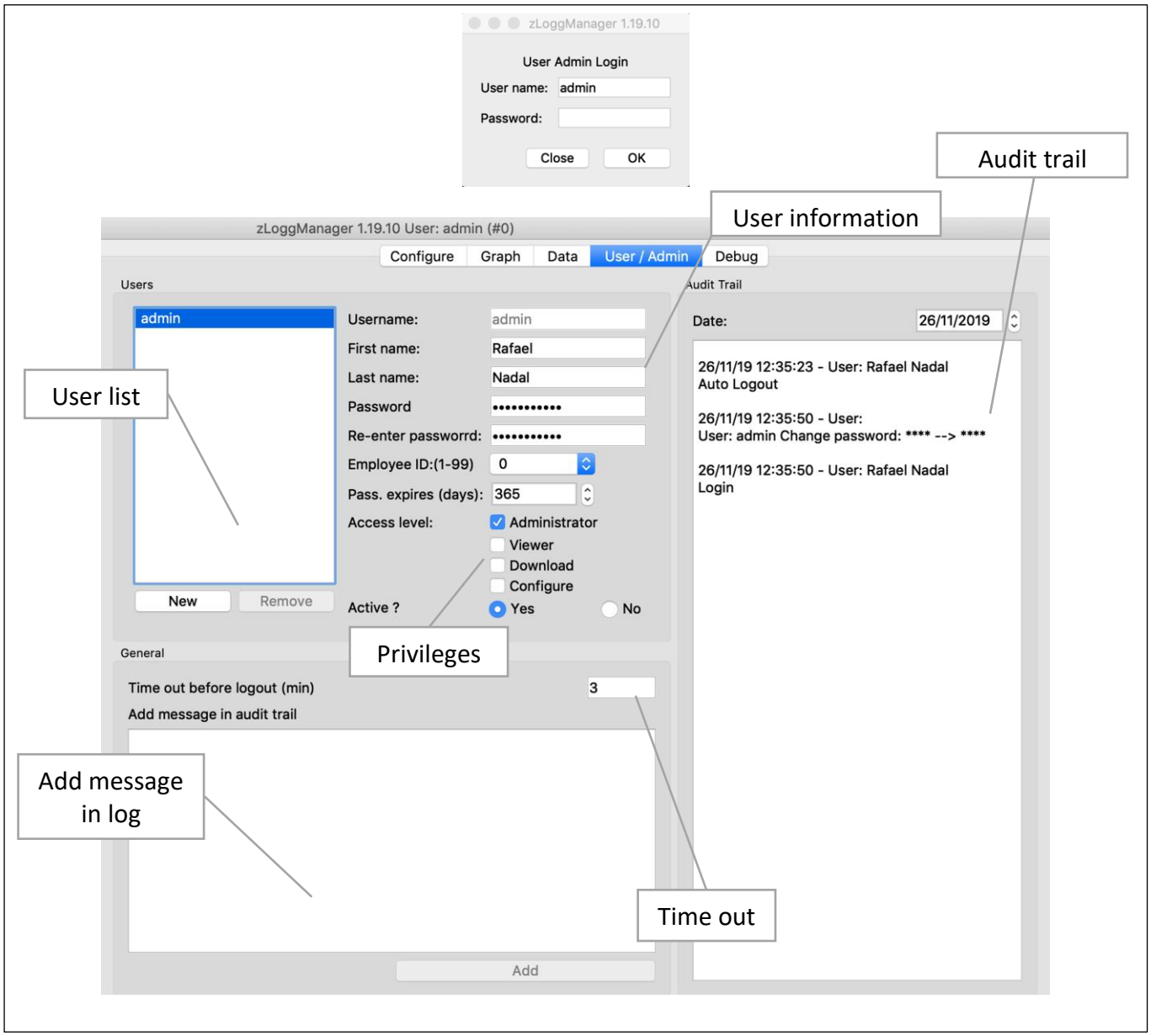
9.2. Activation / Deactivation

To activate the User / Admin module, zLoggManager needs an activation code provided by zLogg (sales@z-logg.com). This code has to be entered in the Code section of the Settings window.
Once the code is recognized, the User / Admin module is enabled. This icon indicates that the module is actually enable.
To deactivate the module, enter the same code and the module will be deactivated.
After activation and deactivation, the application must be restarted.



9.4. First run

When launched, zLoggManager will ask for a user and password.
For the first time, the user is: “admin” and there is no password.



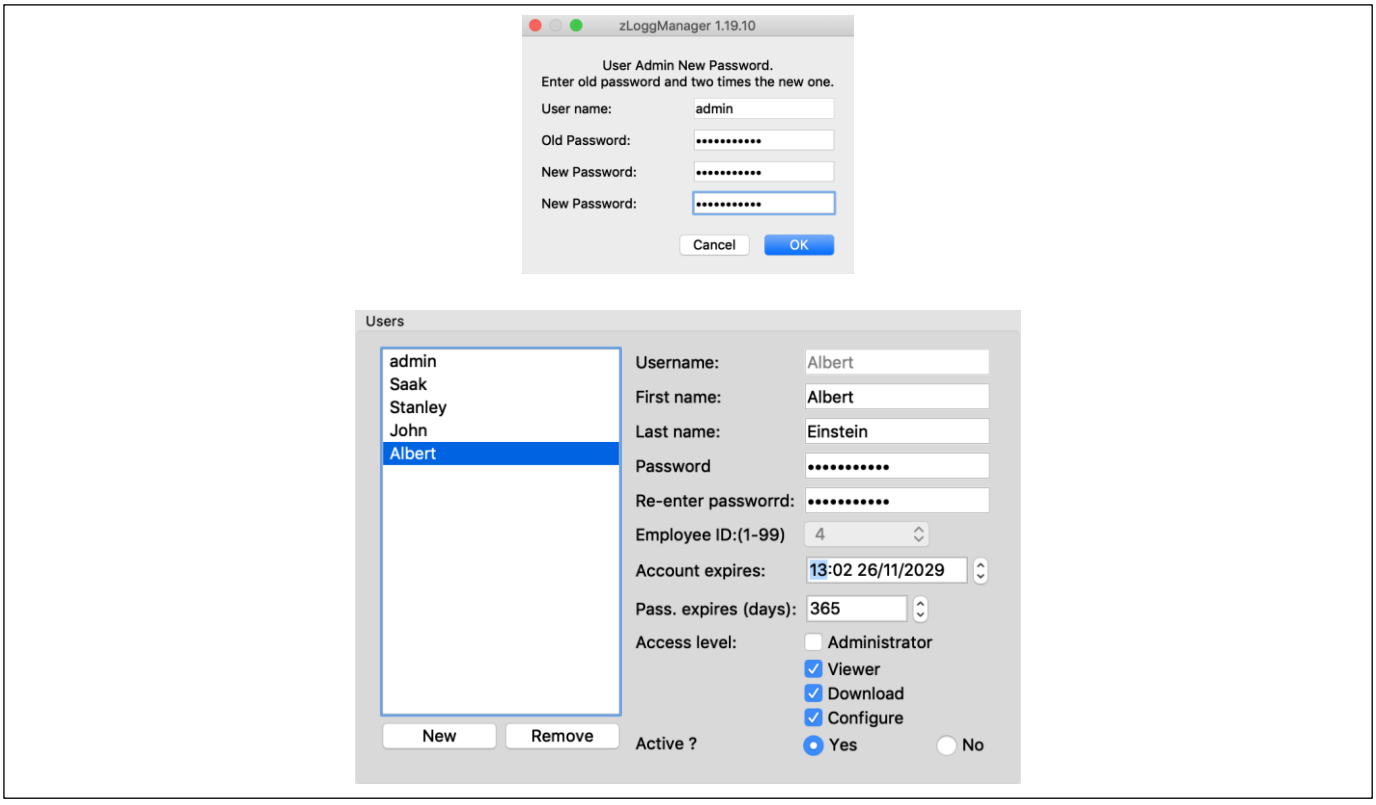
For the first run, the admin user information should be entered.
All entered information are automatically saved.
The User / Admin tab contains a user list with the contact information and the privileges.
A message edition control to insert a message in the audit trail.
A view of the audit trail with date selector.

9.5. User management

Only the admin and users with admin privilege can create, modify and remove other users.
The admin is the only one who can remove other admin users.
Passwords should have at least 6 characters, including minimum one-digit capital letter.
When users log for the first time, the application asks for a new password.
To create a new user, the admin or a user with admin privilege can add by clicking on the “New” button. After a new user logs for the first time entering its new password, the application automatically set the password expiring date to one year later. This date can be changed by an admin at any time.
A user can be set as inactive by an admin user and replaced as active.
Only admin users can have access to the User / Admin tab.
Each user can have one or more of the following privileges:

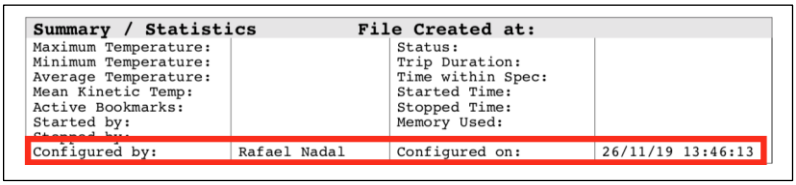
- Admin: all rights, including create and remove other users
- Viewer: can only open a ZLG file or view a connected logger
- Download: can only save the ZLG file of a connected logger
- Configure: can only configure a connected logger.

When done, the current user can logout using this tool bar shortcut: 
If not, the application will automatically logout the current user after the specified inactive time in the “Time out before logout (min)”.



9.6. PDF

When configured in User / Admin mode, the PDF generated by the logger or generated by zLoggManager contains the name of the current user and the date and time of the configuration.

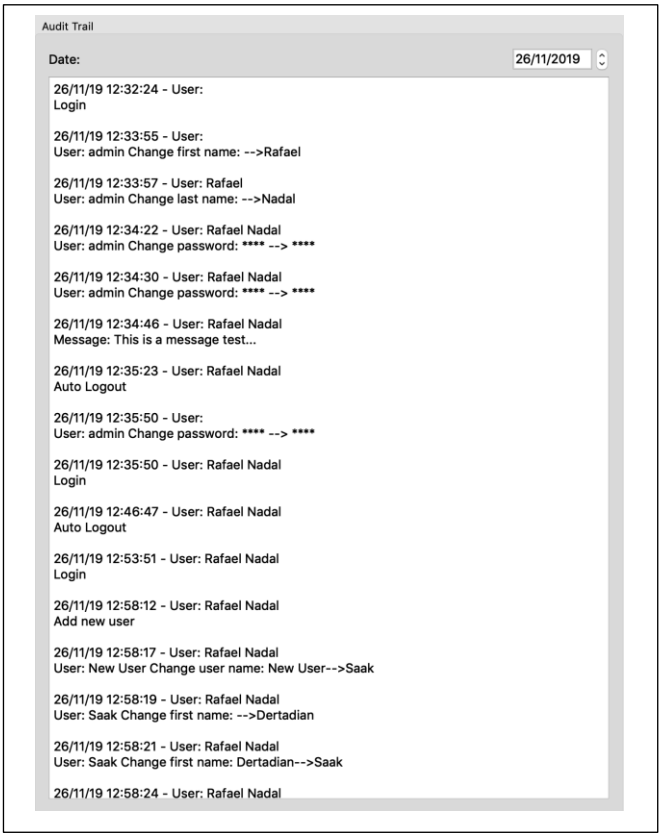


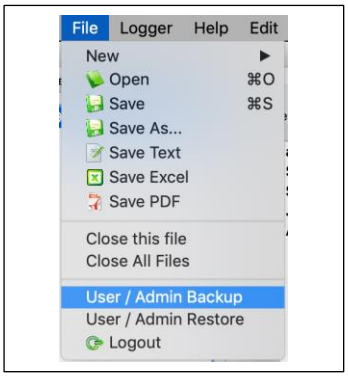
Summary / Statistics		File Created at:	
Maximum Temperature:		Status:	
Minimum Temperature:		Trip Duration:	
Average Temperature:		Time within Spec:	
Mean Kinetic Temp:		Started Time:	
Active Bookmarks:		Stopped Time:	
Started by:		Memory Used:	
Configured by:	Rafael Nadal	Configured on:	26/11/19 13:46:13

9.7. Audit trail

Each action such as login, logout, save, load, change user information, add message… are logged into the audit trail. The audit trail is visible in the audit trail list, which shows the content of the selected date. Each entry in the audit trail contains two lines:

1. Date and time of the entry with the current user name.
2. The action



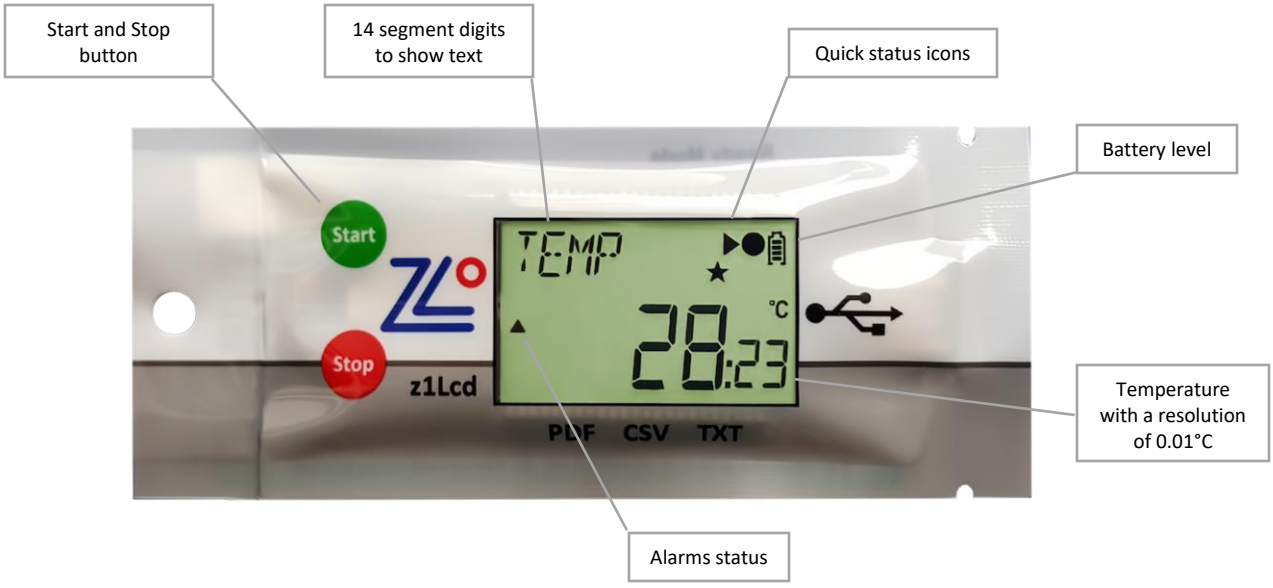


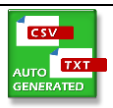
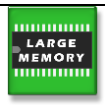
The audit trail can be saved and restored on the local computer.
When saved, “Menu/ User /Admin Backup”
the audit trail destination folder contains user’s specifications and a text file for each day of the audit trail. And a checksum file to prevent any change of the audit trail files.
To restore the audit trail, “Menu/User / Admin Restore” select the folder which contains the saved files, and then restart zLoggManager.

10. z1LcdSu

10.1. Presentation

z1LcdSu is a single use temperature data logger with a rich LCD.
This data logger has all the smart features seen above in the zLoggManager sections.
Manual and Automatic Start and Stop on Date/Time/Temperature threshold…



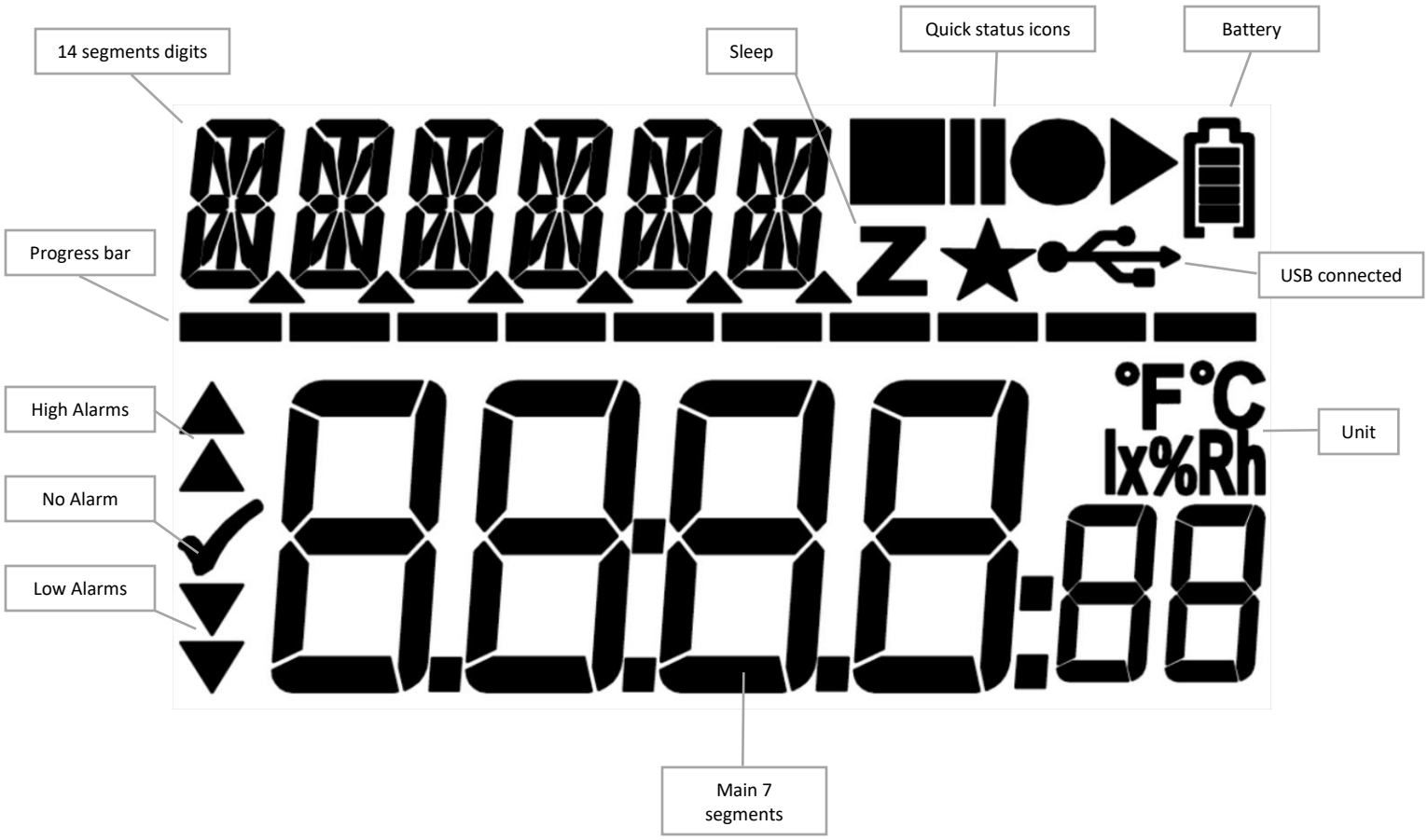
	USB on-board (No strings attached!): Tear the sleeve and slide to expose the USB port, plug and view the data.
	Built in PDF (Auto-generated): When connected to computer, z1Lcd auto - generates detailed pdf report.
	Customize PDF report (tailored contents): Control, manage and customize generated pdf report, enable/disable fields, contents.
	CSV and TXT reports (auto-generated): Easiest way to view data, in the event if PDF reader software is not available.
	Multi-functional LCD (1 click information): Smart display designed to view most of the mission info. With just a press of a button.
	Extra large memory: Able to take over 20,000 records.
	Protected (waterproof): With the IP rating of IP67, packed and sealed in durable plastic. Completely food safe.
	Extended battery life: Ultra low current consumption to last more than 2 years on shelf and monitoring.
	Bookmark: Easily mark multiple records and review them when downloaded.
	Multi-alarms (visual): Four alarms configurations, two for high thresholds and two for low thresholds.
	Firmware Upgrade: Continuously improving and adding the features
	Multi operating systems support: z1Lcd is supported by Windows (XP, Vista, 7, 8 and 10), Mac OS, Linux and Android devices.

10.2. Specifications

Logger Type	Single Use Temperature Data Logger
Sensor	Thermistor (Internal)
Memory Capacity	20,000 records
Measurement Range	-40°C to +80°C
Accuracy	±0.3°C from -40°C to +80°C
Resolution	0.01°C
Time Accuracy	±15 minutes/year
Button	2
Start Option	Manual Start with/without delay Start with Time and Date Start at temperature threshold with/without delay
Stop Option	Stop after a period Stop with date and time Manual stop
Marked Readings	x8 Markers
Log Interval	From 5 Sec to 24 Hours
Total Alarms	4
Alarm Type	Consecutives and/or Total Alarm
Sensor Response Time	< 1 minute
Battery	3V, CR2032
Display	LCD reflective 30x17mm with 14 digits segments
Connection/Interface	USB Mass Storage Device Direct Plug in to PC
Auto Generated File Types	ZLG, TXT, CSV, PDF
Export File Types	ZLG, TXT, CSV, PDF
Software Support	zLoggManager
Compatibility	Windows, Mac OSX, Linux
Calibration	Yes
Certificates	RoHS
Dimensions	44x107x7mm
Weight	17g
Packaging/Material	Polycarbonate ABS, FDA 21 CFR 177.1520
Protection Class	IP 67, Waterproof

10.3. LCD Display

z1Lcd series data logger uses a reflective LCD display with high contrast and wide angle view. The 14 digits segment allows the flexibility to display dynamic words using up to six characters.



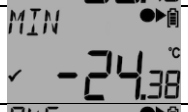
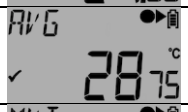
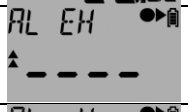
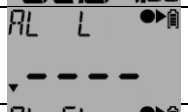
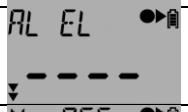
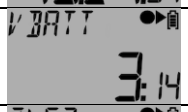
10.4. LCD Quick Status Icons

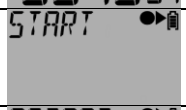
z1Lcd LCD contains icons to quickly inform about the current state.

	**READY:**Configured and ready to start. Press Start button.
	**RECORD:** Started, in record mode.
	**STOPPED:** End of the mission. Doesn't record anymore.

10.5. LCD Display Modes

z1Lcd series data logger offers various menu on the LCD display with Start and Stop button to navigate up and down into the different screen.

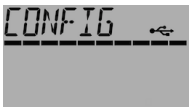
		Standard display when recording Temperature at 2 decimal places, record, battery status and alarm status.
		Displaying maximum temperature.
		Displaying minimum temperature.
		Displaying average temperature.
		Displaying MKT (Mean Kinetic Temperature)
		Extremely HIGH Alarm status. There is no EH alarm so information is blank. Indicate the EH alarm threshold when the logger is in READY mode.
		High Alarm status. Total duration above the high threshold is 2h34m50s. Indicate the H alarm threshold when the logger is in READY mode.
		LOW Alarm status. There is no L alarm so information is blank. Indicate the L alarm threshold when the logger is in READY mode.
		Extremely LOW Alarm status. There is no VL alarm so information is blank. Indicate the EL alarm threshold when the logger is in READY mode.
		Number of records Total number records stored in memory. Ex: 20000
		Current Date With the format: dd/mm/yy
		Current Time With the 24H format: HH:MM:SS
		Battery Voltage Status Displaying real-time battery voltage: Low batt.<2.50V
		Serial Number This is a unique serial number.
		Firmware Version (Ex: 1.14a) Press and hold the STOP button to reset the logger.

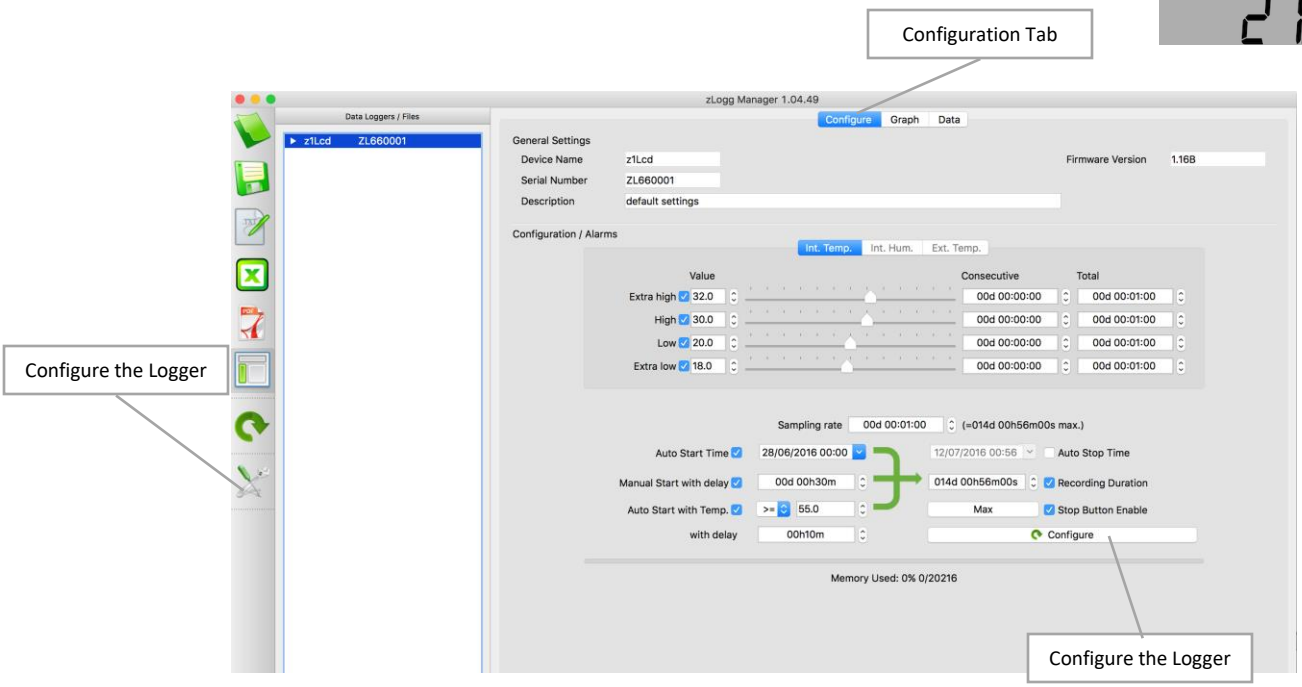
		Sampling Rate. HH:MM:SS (Ex: 00 hours, 5 minutes, 0 seconds)
		Stop Conditions Header. The enabled stop conditions will be scrolling every 2 seconds.
		Auto Stop Date. dd:mm:yy
		Auto Stop Time. HH:MM:SS
		Recording Duration. The logger will Stop after this duration. (Ex: 1 day, 4 hours)
		Stat Conditions Header. The enabled start conditions will be scrolling every 2 seconds.
		Auto Start Date. dd:mm:yy
		Auto Start Time. HH:MM:SS
		Manual Start with Delay. HH:MM:SS (or ex: 001d23, 1 day and 23 hours)
		Auto Start with Temperature and delay. Ex: The logger will start if the temperature is >= 55°C
		Auto Start with Temperature and delay. HH:MM:SS Ex: The logger will start if the temperature is >= 55°C for 10 minutes.
		Firmware Version (Ex: 1.14a) Press and hold the STOP button to reset the logger.

10.6. How to configure the z1LcdSu

Step by step process to configure the z1LcdSu Data Logger.

- On the computer: Launch the zLoggManager application.
- Make sure that the default settings (from the Settings section) are correct.
  - Language
  - Time zone
  - Temperature Units
  - Excel CSV separator
  - MKT Activation Energy (default: 83kJ/mol)
- Connect the z1LcdSu to the computer using the USB connection.
- The logger is detected and visible in the Data Loggers/Files section.
- Select the configuration Tab
- Enter the description
- Enable the alarm check boxes required in the mission
  - Set the alarm threshold
  - Set the consecutive alarm delay if needed or set to zero to disable
  - Set the total alarm delay if needed or set to zero to disable
- Set the sampling rate.
- Set the Start condition(s):
  - Auto Start Time
  - Manual Start + Delay
  - Auto Start with Temperature + Delay
- Set the Stop condition
  - Auto Stop Time
  - Recording Duration (Press the Max button to auto set the maximum duration)
- Click on the Configuration button.
  The following Configuration message will appear on the logger's LCD.
- The logger is configured and ready to be started.
  You can now disconnect the logger





10.7. How to Start the z1LcdSu

Step by step process to start the z1LcdSu Data Logger.

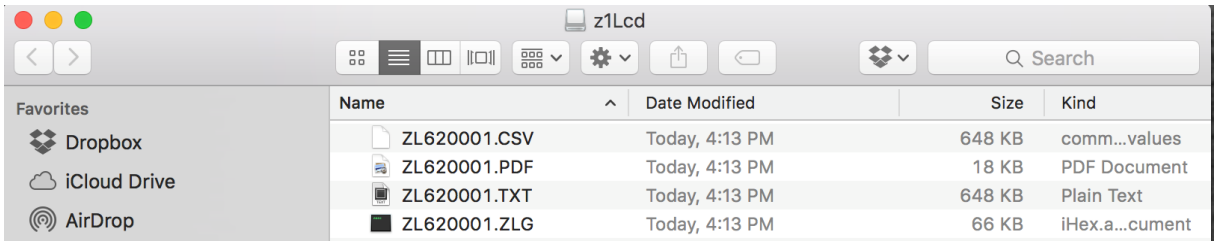
		Make sure the logger has been configured and in Ready mode.
		If the logger has been configured with the Auto Start Time, the LCD display will show TIMER instead of READY.
		Press and hold the Start button for 8 seconds until the loggers switches to Record mode. A progress bar will appear during this process.
		If the logger has been configured with a start delay. This count down will run until the end and then the logger will start .
		The logger is now in record mode.

10.8. How to Read the z1LcdSu

Relevant information is always available on the LCD display in real time.
Use the Start and Stop button to navigate in the menu. (see ¶8.5)

To download the report on the computer, just connect the logger and check for an external mass storage device in the explorer (for Windows) or directly mounted and visible on the desktop (for Mac). The following files are available:

- *.ZLG: zLogg format, needs zLoggManager. (See: ¶7.1)
- *.CSV: Excel CSV File (See: ¶7.2)
- *.TXT: Text file (See: ¶7.3)
- *.PDF: PDF File (See: ¶7.4)



The alternative way is to use zLoggManager. (see ¶5, ¶6 and ¶7)

10.9. How to Stop the z1LcdSu

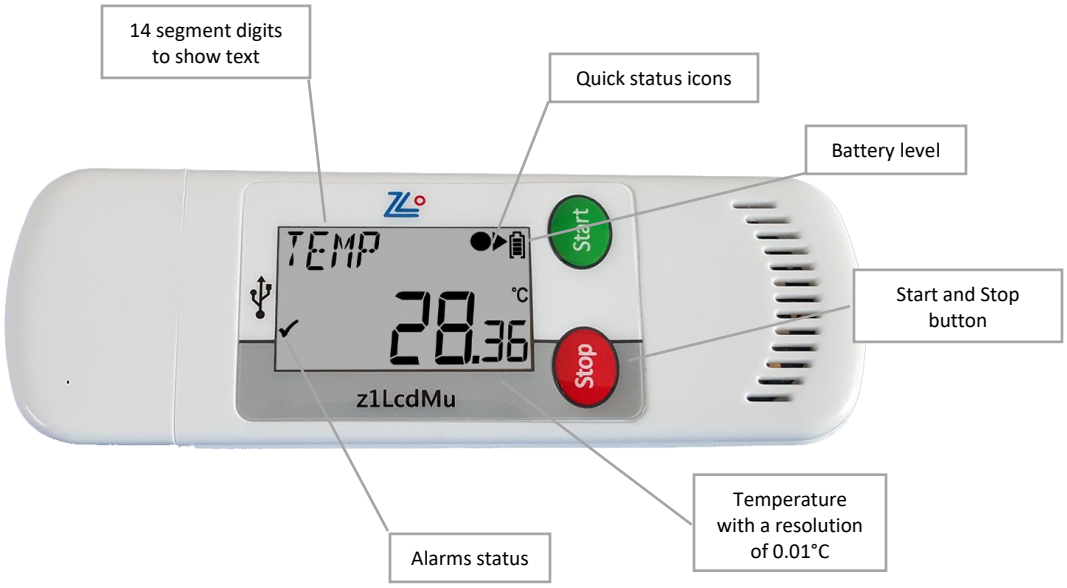
Step by step process to stop the z1LcdSu Data Logger.

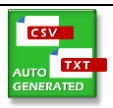
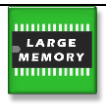
		The logger is in record mode.
		Press and hold the Stop button for 8 seconds until the loggers switch to the Stop mode. A progress bar will appear during this process.
		The logger is now in stopped mode and doesn't record anymore.

11. z1LcdMu, z1LcdMuH, z1LcdMuE

11.1. Presentation

The zLogg z1LcdMu/H/E is an extremely accurate multi-use data logger for internal and external temperature and humidity, with a detailed, multi-screen display. In addition to things like current date and time, serial number, firmware version, battery power, etc... the display also shows you information on logging interval, how it starts (manual, time, temperature) and stops (period, time or manual), start delay, running or stopped state, various alarm levels and alarm states, minimum, maximum, average and Mean Kinetic Temperature, etc — all by a simple click of the button.
Once plugged into the USB port, the logger works like a USB stick that holds the automatically generated ZLG, TXT, CSV and PDF files. No zLogg software needed.
Where other suppliers choose to accompany their loggers with a basic manufacturers certificate, mentioning specifications based on theoretical calculations and prefabrication tests, every zLogg z1 will be individually calibrated before it leaves our lab. Its unique, traceable calibration certificate can be found 'in the cloud' by clicking a link on the PDF generated by the logger.



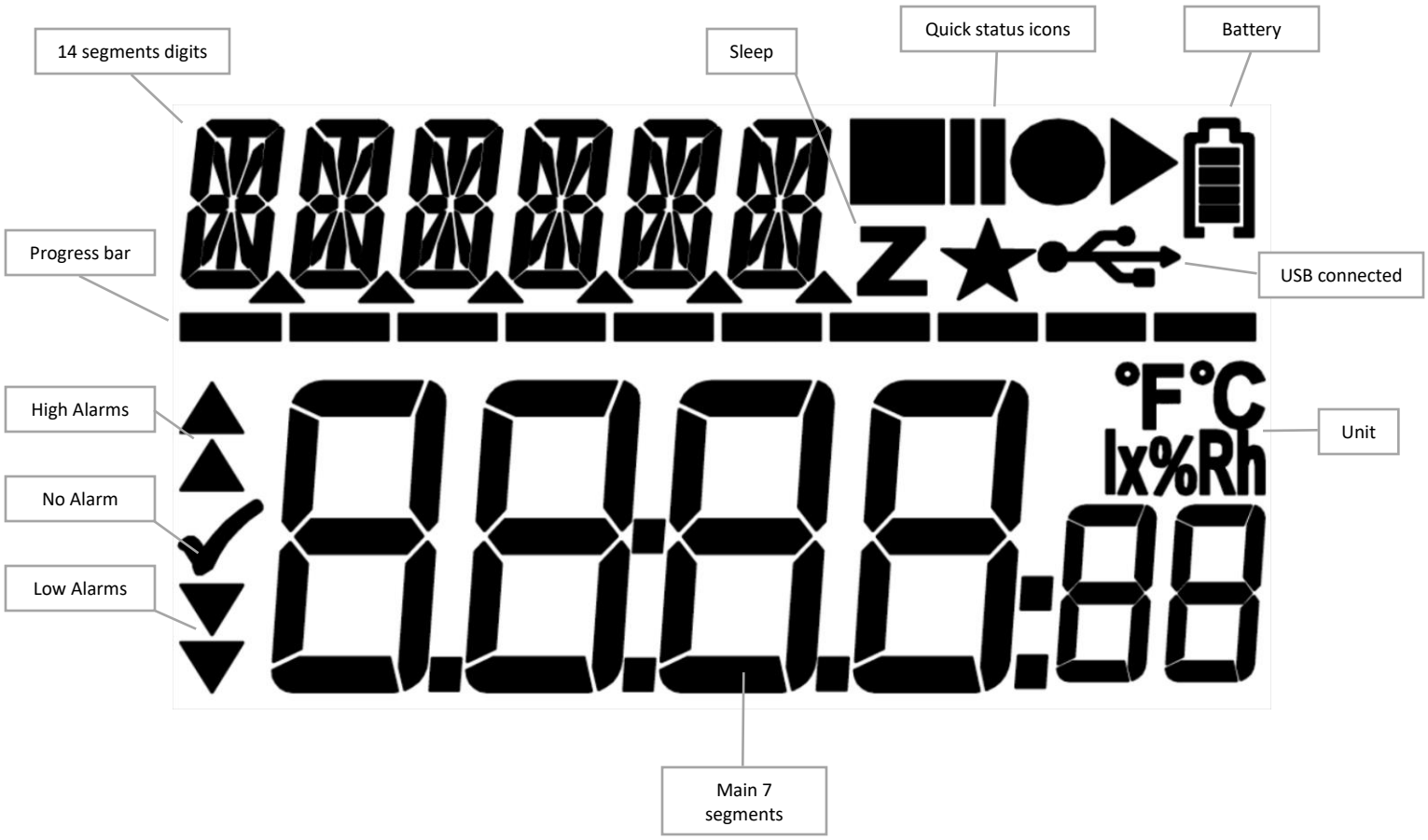
	USB on-board (No strings attached!): Direct connection to USB port, plug and view the data.
	Built in PDF (Auto-generated): When connected to computer, z1LcdMu auto generates a detailed PDF report.
	Customize PDF report (tailored contents): Control, manage and customize generated PDF report, enable/disable fields, contents.
	CSV and TXT reports (auto-generated): Easiest way to view data, in the event if PDF reader software is not available.
	Multi-functional LCD (1 click information): Smart display designed to view most of the mission info. With just a press of a button.
	Extra large memory: Able to take over 48,000 records.
	Replaceable standard battery CR2032: Ultra low current consumption to last more than 2 years on shelf and monitoring.
	Bookmark: Easily mark multiple records and review them when downloaded.
	Multi-alarms (visual): Four alarm configurations, two for high thresholds and two for low thresholds.
	Firmware Upgrade: Continuously improving and adding the features
	Multi operating systems support: z1LcdMu is supported by Windows (XP, Vista, 7, 8 and 10), Mac OS, Linux and Android devices.

11.2. Specifications

Logger Type	Multi-use Temperature Data Logger
Sensor	Temperature/Humidity/Light/3D Accelerometer (Shocks)
Memory Capacity	48,000 records
Measurement Range	-40°C to +80°C
Accuracy	±0.3°C from -40°C to +80°C
Resolution	0.01°C
Time Accuracy	15 minutes/year
Button	2
Start Option	Manual Start with/without delay Start with Time and Date Start at temperature threshold with/without delay
Stop Option	Stop after a period Stop with date and time Manual stop
Marked Readings	Yes, 8x Markers
Log Interval	From 5 Sec to 24 Hours
Total Alarms	4
Alarm Type	Consecutives and/or Total Alarm
Sensor Response Time	< 1 minute
Battery	Replaceable 3V, CR2032
Display	LCD reflective 30x17mm with 14 digits segments
Connection/Interface	USB Mass Storage Device Direct Plug in to PC
Auto Generated File Types	ZLG, TXT, CSV, PDF
Export File Types	ZLG, TXT, CSV, PDF
Software Support	zLoggManager
Compatibility	Windows, Mac OSX, Linux
Calibration	Yes
Certificates	RoHS
Dimensions	35x103x11mm
Weight	28g
Packaging/Material	Polycarbonate ABS, FDA 21 CFR 177.1520
Protection Class	IP 65

11.3. LCD Display

z1Lcd series data logger uses a reflective LCD display with high contrast and wide view angle. The 14 digit segment allows the flexibility to display dynamic words using up to six characters.



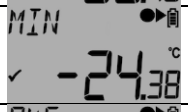
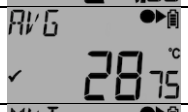
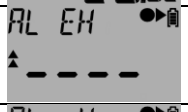
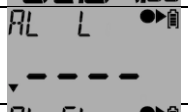
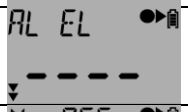
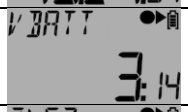
11.4. LCD Quick Status Icons

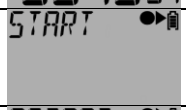
z1Lcd LCD contains icons to quickly inform about the current state.

	**READY:**Configured and ready to start. Press Start button.
	**RECORD:** Started, in record mode.
	**STOPPED:** End of the mission. Doesn't record anymore.

11.5. LCD Display Modes

z1Lcd series data logger offers various menus on the LCD display with start and stop button to navigate up and down into the different screens.

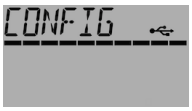
		Standard display when recording Temperature at 2 decimal places, record, battery status and alarm status.
		Displaying Maximum temperature.
		Displaying Minimum temperature.
		Displaying Average temperature.
		Displaying MKT (Mean Kinetic Temperature)
		Extremely HIGH Alarm status. There is no EH alarm so information is blank. Indicate the EH alarm threshold when the logger is in READY mode.
		High Alarm status. Total duration above the high threshold is 2h34m50s. Indicate the H alarm threshold when the logger is in READY mode.
		LOW Alarm status. There is no L alarm so information is blank. Indicate the L alarm threshold when the logger is in READY mode.
		Extremely LOW Alarm status. There is no VL alarm so information is blank. Indicate the EL alarm threshold when the logger is in READY mode.
		Number of Records Total number of records stored in memory. Ex: 20000
		Current Date With the format: dd/mm/yy
		Current Time With the 24H format: HH:MM:SS
		Battery Voltage Status Displaying real-time battery voltage: Low batt.<2.50V
		Serial Number This is a unique serial number.
		Firmware Version (Ex: 1.14a) Press and hold the STOP button to reset the logger.

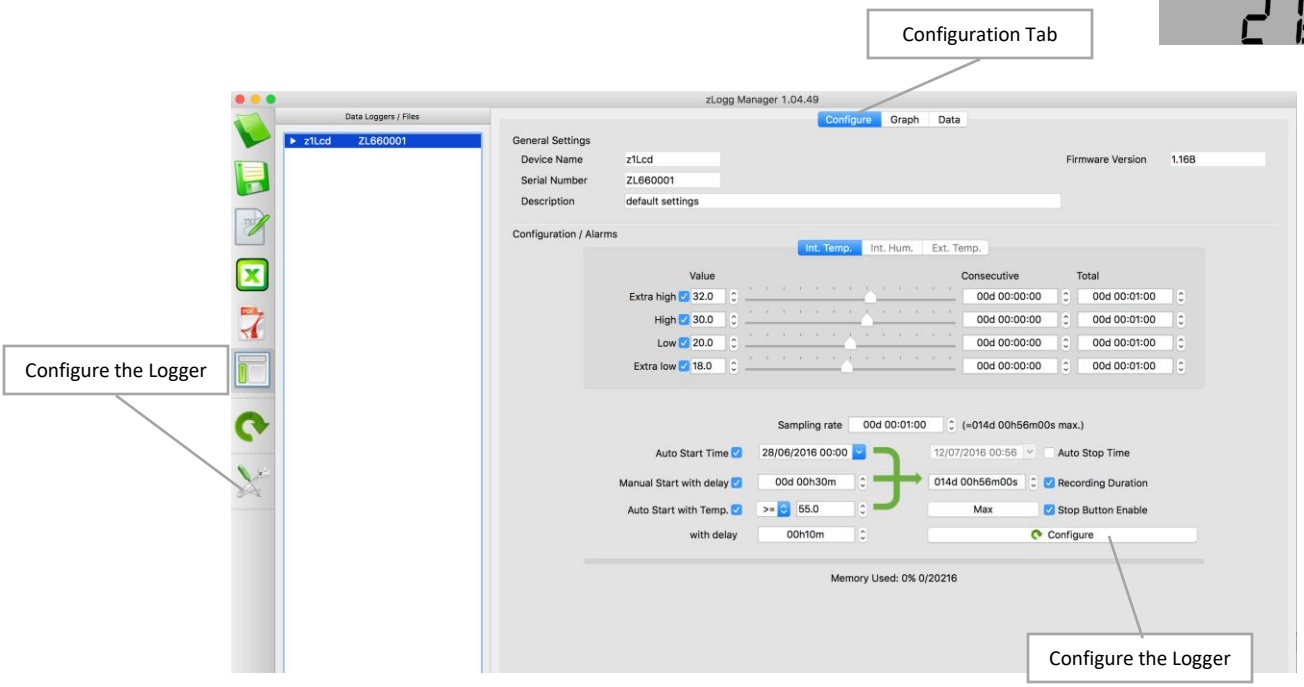
		Sampling rate. HH:MM:SS (Ex: 00 hours, 5 minutes, 0 seconds)
		Stop Conditions Header. The enabled stop conditions will be scrolling every 2 seconds.
		Auto Stop Date. dd:mm:yy
		Auto Stop Time. HH:MM:SS
		Recording duration. The logger will stop after this duration. (Ex: 1 day, 4 hours)
		Start Conditions Header. The enabled start conditions will be scrolling every 2 seconds.
		Auto Start Date. dd:mm:yy
		Auto Start Time. HH:MM:SS
		Manual Start with Delay. HH:MM:SS (or ex: 001d23, 1 day and 23 hours)
		Auto Start with Temperature and Delay. Ex: The logger will start if the temperature is >= 55°C
		Auto Start with Temperature and Delay. HH:MM:SS Ex: The logger will start if the temperature is >= 55°C for 10 minutes.
		Firmware version (Ex: 1.14a) Press and hold the STOP button to reset the logger.

11.6. How to configure the z1LcdMu

Step by step process to configure the z1LcdMu Data Logger.

- On the computer: Launch the zLoggManager application.
- Make sure that the default settings (from the Settings section) are correct.
  - Language
  - Time zone
  - Temperature Units
  - Excel CSV separator
  - MKT Activation Energy (default: 83kJ/mol)
- Connect the z1LcdMu to the computer using the USB connection.
- The logger is detected and visible in the Data Loggers/Files section.
- Select the configuration Tab
- Enter the description
- Enable the alarm check boxes required in the mission
  - Set the alarm threshold
  - Set the consecutive alarm delay if needed or set to zero to disable
  - Set the total alarm delay if needed or set to zero to disable
- Set the sampling rate.
- Set the Start condition(s):
  - Auto Start Time
  - Manual Start + Delay
  - Auto Start with Temperature + Delay
- Set the Stop condition
  - Auto Stop Time
  - Recording Duration (Press the Max button to auto set the maximum duration)
- Click on the Configuration button.
  The following Configuration message will appear on the logger's LCD.
- The logger is configured and ready to be started.
  You can now disconnect the logger





11.7. How to Start the z1LcdMu

Step by step process to start the z1LcdMu Data Logger.

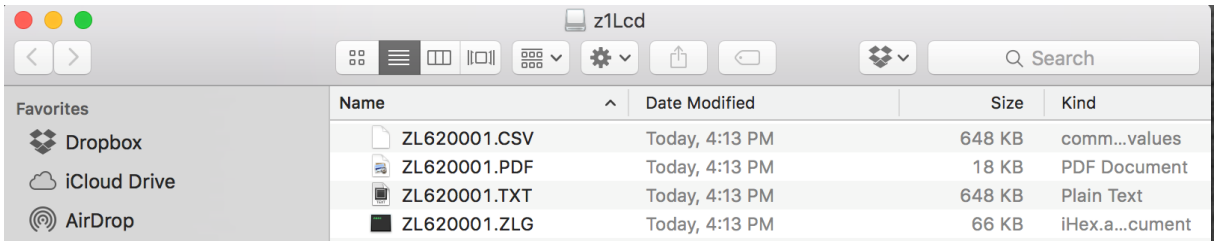
		Make sure the logger has been configured and is in Ready mode.
		If the logger has been configured with the Auto Start Time, the LCD display will show TIMER instead of READY.
		Press and hold the Start button for 8 seconds until the loggers switch to the Record mode. A progress bar will appear during this process.
		If the logger has been configured with a start delay, this count down will run until the end and then the logger will start .
		The logger is now in record mode.

11.8. How to Read the z1LcdMu

Relevant information is always available on the LCD display in real time.
Use the Start and Stop button to navigate through the menu. (see ¶9.5)

To download the report on the computer, just connect the logger and check for an external mass storage device in the explorer (for Windows) or directly mounted and visible on the desktop (for Mac). The following files are available:

- *.ZLG: zLogg format, needs zLoggManager. (See: ¶7.1)
- *.CSV: Excel CSV File (See: ¶7.2)
- *.TXT: Text file (See: ¶7.3)
- *.PDF: PDF File (See: ¶7.4)



The alternative way is to use zLoggManager. (see ¶5, ¶6 and ¶7)

11.9. How to Stop the z1LcdMu

Step by step process to stop the z1LcdMu Data Logger.

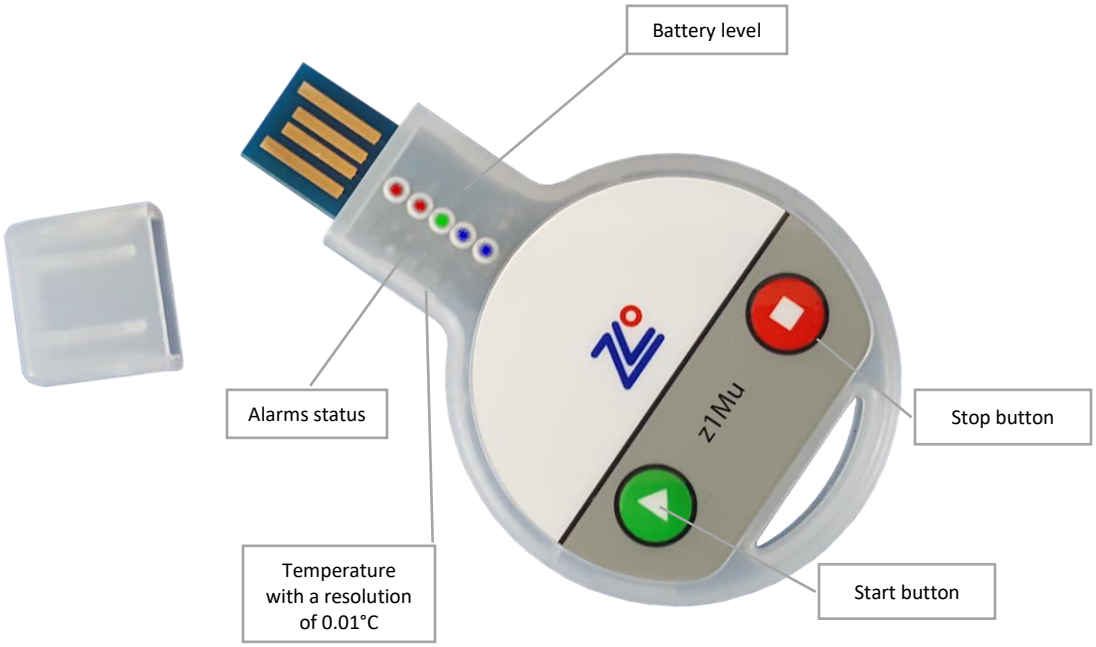
		The logger is in record mode.
		Press and hold the Stop button for 8 seconds until the loggers switch to the Stop mode. A progress bar will appear during this process.
		The logger is now in stopped mode and doesn't record anymore.

12. z1Mu, z1MuH

12.1. Presentation

z1Mu/H is an extremely accurate and low cost multi-use data logger for temperature and humidity, with 5X LED — blue for low alarms, green for no alarm and red for high alarms, visual indication of the current status (recording, stopped, battery level). The battery (non-replaceable) has a shelf life of 1 to 2 years for regular usage. When not in use, the logger is automatically placed in sleep mode to save the battery.

Once plugged into the USB port, the logger works like a USB stick that holds the automatically generated ZLG, TXT, CSV and PDF files. No zLogg software needed.
Where other suppliers choose to accompany their loggers with a basic manufacturers certificate, mentioning specifications based on theoretical calculations and prefabrication tests, every zLogg z1 will be individually calibrated before it leaves our lab. Its unique, traceable calibration certificate can be found 'in the cloud' by clicking a link on the PDF generated by the logger.



12.1. Specifications

Logger Type	Multi-use Temperature and Humidity Data Logger
Sensor	Temperature/Humidity
Memory Capacity	13,000 records
Measurement Range	-40°C to +80°C
Accuracy	±0.3°C over the complete measuring range
Resolution	0.01°C
Time Accuracy	15 minutes/year
Button	2
Start Option	Manual start with or without delay Auto Start on date and time Auto Start on set temperature with or without delay
Stop Option	Auto Stop after a set period Auto Stop on date and time Manual Stop
Marked Readings	Yes, 8x Markers
Log Interval	From 5 Sec to 24 Hours
Total Alarms	4
Alarm Type	Consecutives and/or Total Alarm
Sensor Response Time	< 1 minute
Battery	Not replaceable
Battery life:	1 to 2 years for a normal usage
Display	5X LED — blue, green, red
Connection/Interface	USB Mass Storage Device Direct Plug in to PC
Auto Generated File Types	ZLG, TXT, CSV, PDF
Export File Types	ZLG, TXT, CSV, PDF
Software Support	zLoggManager
Compatibility	Windows, Mac OSX, Linux
Calibration	Individual calibration certificate per logger
Certificates	RoHS
Dimensions	78 x 48 x 9 mm
Weight	16g
Packaging/Material	ABS, FDA 21 CFR 177.1520
Protection Class	IP 30

12.2. LED Display

z1Mu series data logger uses 5 x LED to indicate:

- Alarms
- Current state
- Battery level

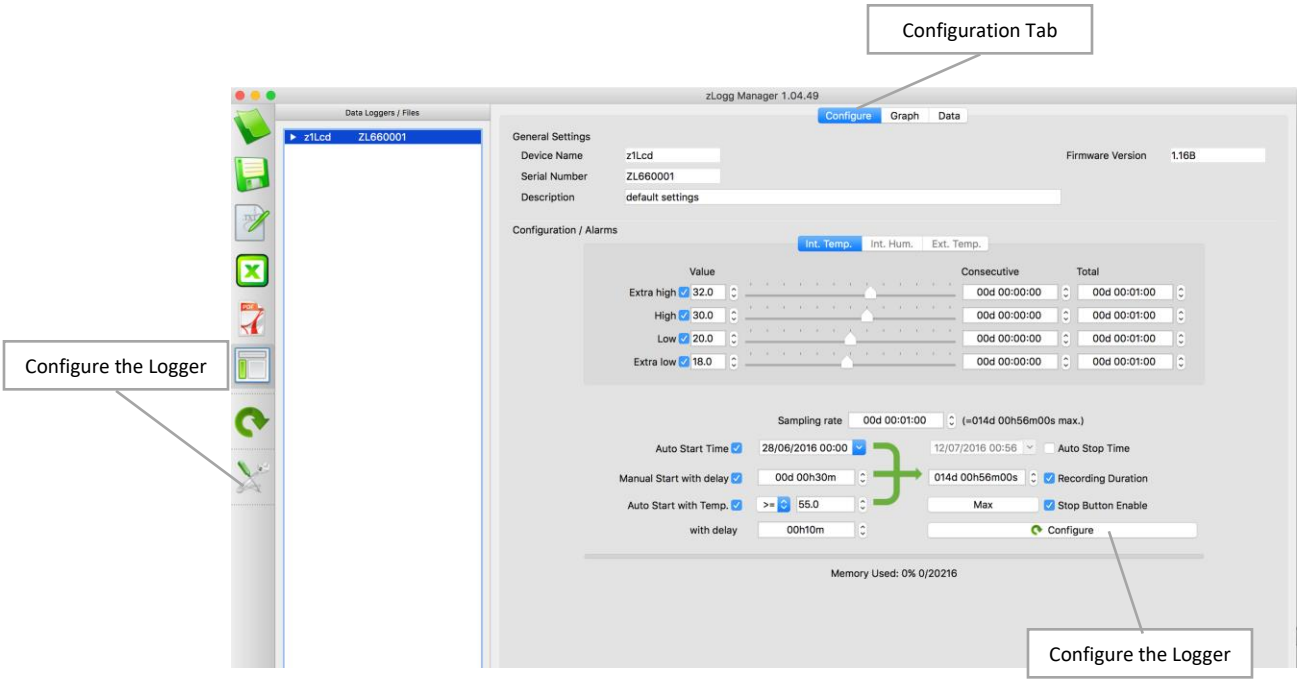
	Alarms	**Battery Level** **Press and hold the two buttons**
	Very High alarm	Medium
	High alarm	
	No alarm	High
	Low alarm	
	Very Low alarm	Low

Led	**State**
No blink	Press any button to awake the LEDs. After a period of 2 minutes, LED goes back to sleep mode.
1 flash/10 sec.	The LED indicate the alarm status. Logger is Ready or Stopped.
2 flashes/5 sec	The LED indicate the alarm status. Logger is in Record mode.

12.3. How to configure the z1Mu

Step by step process to configure the z1Mu Data Logger.

- On the computer: Launch the zLoggManager application.
- Make sure that the default settings (from the Settings section) are correct.
  - Language
  - Time zone
  - Temperature Units
  - Excel CSV separator
  - MKT Activation Energy (default: 83kJ/mol)
- Connect the z1Mu to the computer using the USB connection.
  Quick press any button to awake the logger if necessary.
- The logger is detected and visible in the Data Loggers/Files section.
- Select the configuration Tab
- Enter the description
- Enable the alarm check boxes required in the mission
  - Set the alarm threshold
  - Set the consecutive alarm delay if needed or set to zero to disable
  - Set the total alarm delay if needed or set to zero to disable
- Set the sampling rate.
- Set the Start condition(s):
  - Auto Start Time
  - Manual Start + Delay
  - Auto Start with Temperature + Delay
- Set the Stop condition
  - Auto Stop Time
  - Recording Duration (Press the Max button to auto set the maximum duration)
- Click on the Configuration button.
  The following Configuration message will appear on the logger's LCD.
- The logger is configured and ready to be started.
  You can now disconnect the logger



12.4. How to Start the z1Mu

Step by step process to start the z1Mu Data Logger.

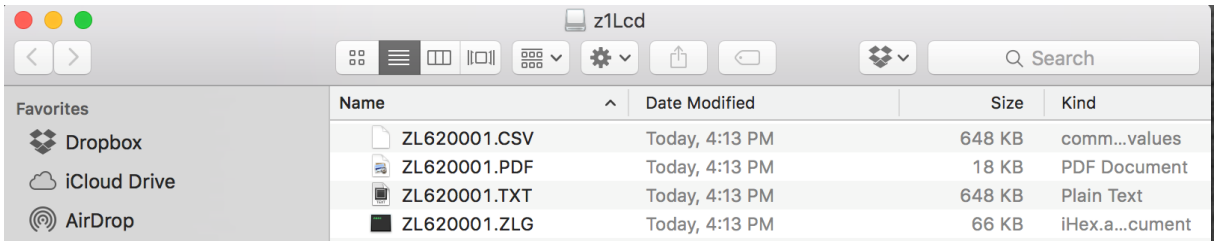
Green LED: 1 flash/8 sec	Quickly press any button to awake the logger if necessary. Make sure the logger has been configured and in “Ready Mode”.
LED scroll up from blue to red	Press and hold the Start button for 8 seconds until the loggers switch to the Record mode. A visual progress will appear during this process.
2 flashes/5 sec	The logger is now in “Record Mode.”

12.5. How to Read the z1Mu

Quick press any button to awake the logger if necessary.
LED indicate the current state . (see ¶10.2)

To download the report on the computer, just connect the logger and check for an external mass storage device in the explorer (for Windows) or directly mounted and visible on the desktop (for Mac). The following files are available:

- *.ZLG: zLogg format, needs zLoggManager. (See: ¶7.1)
- *.CSV: Excel CSV File (See: ¶7.2)
- *.TXT: Text file (See: ¶7.3)
- *.PDF: PDF File (See: ¶7.4)



The alternative way is to use zLoggManager. (see ¶5, ¶6 and ¶7)

12.6. How to Stop the z1Mu

Step by step process to stop the z1LcdMu Data Logger.

2 flashes/5 sec	Quickly press any button to awake the logger if necessary.
LED scroll down from red to blue	Press and hold the Stop button for 8 seconds until the loggers switch to the “Stop Mode”. A visual progress will appear during this process.
1 flash/8 sec	The logger is now in “Stop Mode.”