USER GUIDE

# USRIC-4

LogTag

Distributed by AKRIBIS

# USRIC-4

## USB Temperature Recorder

## Product User Guide

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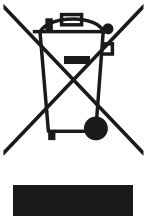
# Safety Information

The USRIC-4 USB temperature logger contains a non-replaceable Lithium Battery. When the battery indicates “LOW”, the logger should be replaced, and the battery recycled or disposed of according to your local regulations.
Do not expose the logger to extreme temperatures as it may lead to the destruction of the battery and may cause injuries.
Keep out of the reach of children.



# Liability

LogTag Recorders’ standard warranty terms apply. A copy can be requested by emailing support@logtagrecorders.com. In addition, LogTag Recorders shall not be held liable:

- If the device was used beyond LogTag Recorders’ stated limitations.
- For any claims due to the improper storage and use of the device.
- For any problems with refrigeration units.
- For the bad quality of the monitored goods, if any.
- For incorrect readings if the device was used with a low battery.
- For consequential loss.

# Useful Life

The operational life of the USRIC-4 is approx. 6 months after first configuration, provided ...

… the device was not stored for more than 2 years prior to activation,
… the device is not downloaded excessively (more than once a week) to a PC,
… The recording interval is no shorter than 5 minutes,
… the device is stored and operated according to LogTag Recorders’ recommendations.

# Disclaimer

The USRIC-4 monitors temperature exposure and not the quality of the goods it accompanies. Its purpose is to signal if product quality evaluation/testing is required.

# Typographical Conventions

Text **in this font** refers to buttons on the USRIC-4.
Text in this font refers to option settings, dialogue boxes or actions to be taken in LogTag® Analyzer.
Text in this font describes features of the product.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# Introduction

LogTag's USRIC-4 is a fully configurable, single-use USB temperature logger that can be downloaded without the need for additional hardware at the destination. The logger can be ordered with pre-set profiles ready to start, or configured using LogTag® Analyzer, and is then placed with the goods to be monitored. At the destination the USRIC-4 can be plugged straight into a computer's USB port to be downloaded to LogTag® Analyzer, the free companion software from LogTag Recorders.

# Required Equipment

- LogTag® USRIC-4 temperature logger. It is recommended that you connect each USRIC-4 via a permanently plugged in USB extension cable to protect your computer's USB socket.
- For configuration and download - a PC running Windows 7 or later and LogTag® Analyzer installed.

# Features

The USRIC-4 USB temperature logger features the familiar LogTag case layout with an additional USB plug at the bottom.

## Case

- Mounting lug for secure fastening of logger to fixtures
- USB plug with potective cap - shields USB connector from moisture and dirt
- Temperature sensor located inside case
- Durable polycarbonate case, IP64

## Button

- **START/Mark** button; can be used to start the unit or place an inspection mark in the data listing

## Indicator LEDs

- Green **OK** indicator
  Blinks if the unit is operating without alerts being present.
- Red **ALERT** indicator
  Blinks if an alarm condition has occurred during the trip.

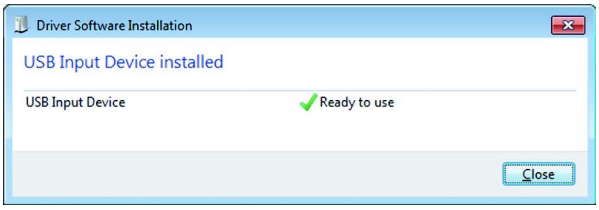
# Software Requirements

The USRIC-4 is the only product in the LogTag® USB Temperature Logger range that cannot generate its own files. To configure the USRIC-4 for recording and to access the recorded data you will need to download the LogTag® Analyzer software from the LogTag® Software download page. Follow the instruction to install and start the software.

# Configuring the USRIC-4

USRIC-4 products can be ordered pre-configured, ready to start. Different profiles are available; if none of these suit or the USRIC-4 needs different configuration settings to those already installed, the unit can be configured using LogTag® Analyzer.

- Start the LogTag® Analyzer software.
- Remove the protective cap and insert the USRIC-4 into a USB port. You will receive a message that a new USB device has been found, and a generic driver will be installed[1].




- Once the driver is installed and the USRIC-4 is ready (shown by the green **OK** indicator blinking), it can receive configuration data. Click **LogTag - Configure**; LogTag® Analyzer will scan all USB ports and display the configuration options for connected USRIC-4's. Although you can configure many devices at the same time, it is practical to limit the number of devices to about 10, using a powered USB hub. It is not possible to configure different models at the same time.

[1] Depending on the factory configuration additional drivers may be installed at this time.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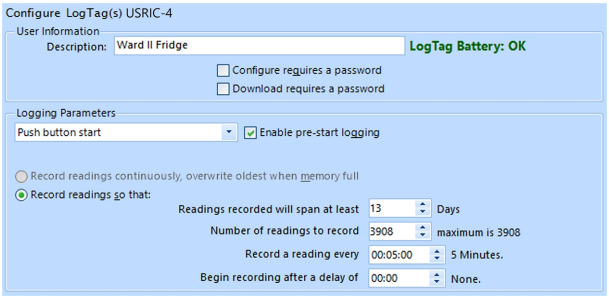
## Standard Configuration Options

The standard configuration options are very similar to those of other LogTag® logger products and include settings such as User ID, start method, pre-start recording, logging interval and duration, start delay, temperature alarm parameters and password.




For detailed information about each parameter please read the section about **Configuring a LogTag® for logging** in LogTag® Analyzer's User Guide or press F1 for help.

## Configuring Alarms

LogTag® Analyzer allows 2 different alarm trigger conditions when configuring a USRIC-4 for recording. Each alarm trigger condition consists of a threshold temperature value, an activation type (which can be instant, consecutive or accumulative[2]) and a delay time, if it is not an instant alarm.

If an alarm trigger condition requires readings to exceed an upper threshold temperature it is called an ***upper alarm***. If an alarm trigger condition requires readings to go below lower thresholds it is called a ***lower alarm***.

An alarm event is generated, when either of the entered alarm conditions is triggered, and the red Alert LED will blink.

The USRIC-4 has an upper and a lower alarm, which can be configured and enabled independently from each other.

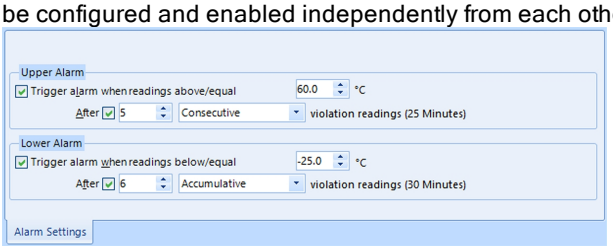



***Figure 1:*** *Representation in LogTag® Analyzer*

## Advanced Configuration Options

Select **Advanced Settings** for additional configuration settings. These settings set certain options specific to the USRIC-4.

2
- Instant = one temperature reading is above (below) the threshold
- Consecutive = temperature readings are above (below) the threshold for the time defined in the activation delay without interruption
- Accumulative = temperature readings are above (below) the threshold for the total time defined in the activation delay time, but may not necessarily be sequential.

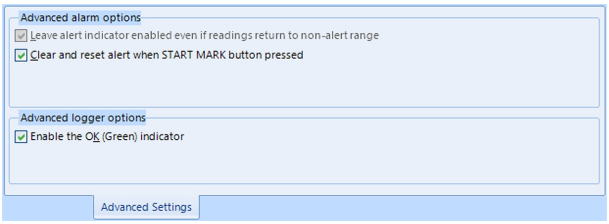



***Figure 2:*** *USRIC-4 advanced configuration screen*

Parameters influencing specific behaviour of the USRIC-4 are

- clear and reset alarm when the **START/Mark** button is pressed
- leaving the alarm turned on, even if readings return to the normal temperature range again
- enabling or disabling the green OK LED

## Finalising the configuration

- Click Configure to upload the configuration data to the USRIC-4.
- When the configuration is complete, unplug the USRIC-4 from the USB socket and replace the protective cap.

If you wish to configure more USRIC-4 units with the same configuration, insert the next recorder into the USB socket, wait until it is ready for configuration and click Repeat Configure. Alternatively you can use the Profile function to configure multiple units with the same settings.

You can upload the configuration to a USRIC-4 logger as often as required, however once started the unit cannot be configured again.

# USRIC-4 Start Options

During configuration with LogTag® Analyzer you can decide when the USRIC-4 starts taking temperature readings.

- ... via Push button start: The logger will start taking temperature readings as soon as you have pressed the **START/Mark** button.
- ... via Date/Time start : The logger will start taking temperature readings at the date and time you specify (local time).

When you choose the push button start option, you can select to record pre-start readings or Begin recording after a delay.

- If you select pre-start readings, the USRIC-4 starts recording as soon as it is unplugged from the USB port[3] and will continue to do so until you start the unit. No alarms are processed while pre-start readings are being taken. Using pre-start readings is a good way to avoid data loss if you forget to start the unit, as you can still access the data using LogTag® Analyzer.
- If you configure the USRIC-4 to start after a delay period, the logger will not immediately record temperature readings after you have pressed **START/Mark**, but start a countdown timer instead, and record readings only after the timer has ended. It will, however, continue to take pre-start readings, if enabled.

[3] The first pre-start reading is taken one log interval after you unplug the unit from the USB port.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You cannot combine a date/time start with pre-start readings or the start delay function.

# While Recording...

While the USRIC-4 is recording the green **OK** indicator blinks every 4 seconds if none of the configured alarm conditions have been met[4].

## Alerts

As soon as one of the alarm trigger conditions is met, the red **ALERT** indicator blinks every 4 seconds. Depending on the alarm configuration the red indicator may remain on for the rest of the trip, or the green **OK** indicator may blink again once conditions return back inside the limits.
If configured, you can reset an alert by pressing the **START/Mark** button. Alerts which are a result of accumulative alarms cannot be cleared.

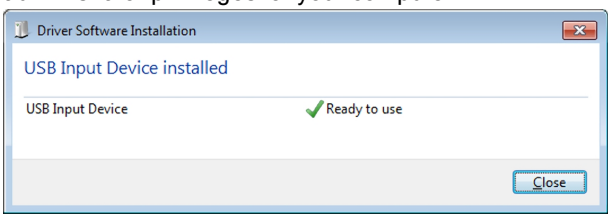
## Marking a reading with an inspection mark

When you press the **START/Mark** button, the next reading taken by the USRIC-4 will be identified in the downloaded data with an inspection mark.

## Plugging the USRIC-4 into a USB port

### Microsoft Windows

A USB Input Device (HID) Driver will be installed. This driver is part of the operating system and will typically not require administrator privileges for your computer.




This device driver is used for communication to LogTag® Analyzer .
Once finished, the USRIC-4's green OK indicator will blink once every second.

While a USRIC-4 is plugged into USB, no temperature readings are taken. The graph in LogTag® Analyzer will display a gap and the data list will show **---** followed by the **#** symbol. This also applies when the logger is connected to a USB power supply.

### macOS, OSX and Linux

You will only be able to configure or download the USRIC-4 using either of these operating systems by installing virtualization software such as Fusion or Virtualbox to create a hosted Windows environment. You need to discuss these options with your network administrator.

[4] The blinking of the green **OK** indicator can be disabled during configuration of the unit.

# Stopping the USRIC-4

## Automatically

The USRIC-4 automatically stops recording temperature when the maximum number of readings specified during configuration has been reached. Your unit can also be set up to stop when it is inserted into a USB socket. This option needs to be set up at the factory and cannot be changed during configuration with LogTag® Analyzer. Your distributor can supply more information about this option.

## Manually

The USRIC-4 cannot be stopped manually on the device. You can, however, use the **Hibernate** function from LogTag® Analyzer's **LogTag** menu to stop the recording.

# Accessing the stored Data

To acces the recorded data you will require LogTag® Analyzer software. If you have started LogTag® Analyzer before you plug the USRIC-4 into one of the computer's USB ports, the data will be automatically downloaded, and stored in a file in the folder you have chosen during installation of the software.

The data on the unit is retained, and each time you plug the USRIC-4 back into the computer the files are re-generated, albeit with a new file name. Once the battery is exhausted, however, the real time clock on the unit stops and dates and times may no longer be accurate.

# Unplugging

You can unplug a USRIC-4 at any time; there is no need to stop the device via the shortcut menu in the notification area on the taskbar. If you plug a unit into a USB port during a start delay, the delay period will re-start when the unit is unplugged. You will see the start and delay signals indicated by the LED's. The delay will also be restarted if you press the **START/Mark** button during the delay period. You may see the start signal if you have configured a time start, but have left the unit plugged in beyond the start time of the USRIC-4.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# Light Patterns on USB Loggers

| Signal | Sequence | Occurrence |
|---|---|---|
| Wake-up signal | Sequence of four quick alternate flashes of green **OK** and red **ALERT** indicators | • displayed after configuration has been successfully applied to the USRIC-4.<br>Not to be mixed up with... |
| Start signal | Sequence of ten alternate flashes of green **OK** and red **ALERT** indicators | • displayed when the USRIC-4 starts its recording cycle.<br>• The delay timer is re-started (followed by Delay Signal). |
| Mark signal<br>Delay Signal | Sequence of five simultaneous flashes of green **OK** and red **ALERT** indicators | • displayed when pressing ***START/Mark*** button while recording to indicate an inspection mark in the software.<br>• displayed directly after the start-up signal following a push button start where a recording delay has been configured. In this instance the start-up signal is repeated when the actual recording begins. |
| Logging active, no alert present | Single flash of green **OK** indicator every 4 seconds (approx.) | • indicates USRIC-4 is recording.<br>This is not displayed when pre-start is active and the main logging cycle has not yet started. It is also not displayed when the green LED has been turned off in the configuration screen. |
| Logging finished, no alert present | Single flash of green **OK** indicator every 8 seconds (approx.) | • indicates USRIC-4 has finished recording.<br>This is not displayed when the green LED has been turned off in the configuration screen. |
| Logging active, alert condition present | Single flash of red **ALERT** indicator every 4 seconds | • Indicates USRIC-4 is recording, an alert condition has occurred.<br>This is not displayed when pre-start recording has been configured and the recorder has not yet been started. |
| Logging finished, alert condition present | Single flash of red **ALERT** indicator every 8 seconds | • indicates USRIC-4 has finished recording and an alert condition was present during the trip. |
| Communication | The green **OK** indicator will flash occasionally | • during USB communication the green LED will flash occasionally; no additional information is conveyed in this. |
| Ready for USB | Two quick flashes of the green **OK** indicator every second | • The USRIC-4 is connected to a USB port and waiting for USB communication. |

# Tips and Tricks

## Configuration

When configuring a USB logger, allow enough time for the unit to acclimatise to the target environment, particularly if you have configured an upper alarm. This can be best achieved with a start delay, or a date/time start if you know when the shipment takes place.
Make sure you remove your USRIC-4 from the USB socket when you use a date/time start, so it starts at the time you want, rather than when unplugged from the port.

## During the trip

Always replace the USB protective cap before placing the USRIC-4 with the goods. While recording, make sure the USRIC-4's protective cap is facing down. The protection rating can only be achieved when used in this orientation. For applications requiring a higher IP rating the unit should be used in the protective case, available as an accessory.

# Getting help

If after studying this Product User Guide and the relevant Quick Start Guide you still need further information, please visit the support section of the LogTag Recorders website at http://logtagrecorders.com/support
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# USRIC-4 Factory Presets

LogTag® USRIC-4 loggers can be client configured using LogTag® Analyzer. For an out-of-box solution they can also be ordered in volume, pre-configured with a factory profile, ready for starting.
If a default configuration does not suit, customers can compile their own profile by specifying the parameters in the tables below when ordering. Please note that minimum order quantities apply for USRIC-4 recorders with profiles not stocked by LogTag Recorders.

| Description | | Default Profile | Range/Option | Your requirement |
|---|---|---|---|---|
| Standard Options | | | | |
| UserID | | - | ASCII text up to 38 characters[1] | - |
| Start method | | Push button start | Push button start | Push button start |
| Record pre-start readings | | enabled | enabled or disabled | |
| Number of readings to record | | 3,900 | 1-3,937 | |
| Sampling interval | | 5 minutes | 1 minute to 18 hours | |
| Start Delay | | 60 minutes | 1 minute to 72 hours, 0=no delay | |
| Enable Green OK indicator | | enabled | enabled or disabled | |
| Reset alarm with **START/Mark** button | | disabled | enabled or disabled | |
| Alarm remains active when readings return to spec | | enabled | enabled or disabled | |
| Configure requires password | | disabled | enabled or disabled | |
| Download requires password | | disabled | enabled or disabled | |
| Password | | - | Up to 6 ASCII characters | |
| Standard Alarm Parameters | | | | |
| Upper Alarm | Alarm direction | upper | upper | Upper |
| | Trigger this alarm | disabled | enabled or disabled | |
| | Temperature threshold value[2] | - | -25 °C to 60 °C (-13 °F to 140 °F) | |
| | Alarm activation type[3] | instant | instant, accumulative or consecutive | |
| | Activation delay time | - | 1 minute to 45 days | |
| Lower Alarm | Alarm direction | Lower | Lower | Lower |
| | Trigger this alarm | disabled | enabled or disabled | |
| | Temperature threshold value | - | -25 °C to 60 °C (-13 °F to 140 °F) | |
| | Alarm activation type | instant | instant, accumulative or consecutive | |
| | Activation delay time | - | 1 minute to 45 days | |

[1] All units associated with a profile must have the same UserID. The text cannot be individually customised per unit. The text cannot contain characters from an extended character set such as Chinese or Cyrillic
[2] Upper value must be above lower value
[3]

- Instant = one temperature reading is above (below) the threshold
- Consecutive = temperature readings are above (below) the threshold for the time defined in the activation delay without interruption
- Accumulative = temperature readings are above (below) the threshold for the total time defined in the activation delay time, but may not necessarily be sequential.


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# Technical Specifications

### Model Numbers

USRIC-4 - Single Trip Temperature Logger with dual alarms

### Temperature Sensor Measurement Range

-25 °C to +60 °C (-13 °F to +140 °F)

### Operating Temperature Range

-25 °C to +60 °C (-13 °F to +140 °F)

### Storage Temperature Range

0 °C to +40 °C (32 °F to +104 °F)

### Ambient humidity range during transport and use

0 to 95%RH

### Sensor Type

Precision thermistor

### Rated Temperature Resolution

0.1 °C (0.1 °F) across entire range

### Rated Temperature Accuracy

- Better than ±0.5 °C (±0.9 °F) for -5 °C to +30 °C (-23 °F to 86 °F)
- Better than ±0.8 °C (±1.5 °F) for -25 °C to -5 °C (-13 °F to 23 °F)
- Better than ±0.8 °C (±1.5 °F) for +40 °C to +60 °C (86 °F to 140 °F)

### Sensor Reaction Time

Typically less than 7 minutes (T90) in moving air (1m/s), method as detailed in EN12830:1999.

### Clock accuracy

Quartz crystal locked real time clock, rated accuracy ±25ppm @ 25 °C (equiv to 2.5 seconds/day)
Rated temperature coefficient is -0.034±0.006ppm/°C (i.e. typically +/- 0.00294seconds/day/°C)

### Recording Capacity

3,937 real time temperature values, giving
- 27 days @ 10min logging or
- 41 days @ 15min logging.

### Memory type

Non volatile

### Sampling Interval

Configurable from 30 seconds to 18 hours.

### Start options

- Push button start with optional configurable start delay from 1 minute to 72 hours
- Date/time start

### Alarm functions

- one configurable upper alarm
- one configurable lower alarm
- Flashing OK and Alert indicators, linked to alarms

### Vibration

Withstands vibration specification as detailed in EN12830:1999

### Shock

- Withstands shock specification as detailed in EN12830:1999
- Withstands 5 drops from 1m onto smooth concrete floor without loss of function or calibration

### EMC compliance

- EC EMC directives (EN 61000-6-1:2005 & EN 61000-6-3:2006)
- Includes electrostatic discharge as prescribed in EN 61000-4-2
- Complies with FCC Part 15 Subparts A and B

### Environmental

IEC 60529: IP64 with USB cap fitted
Fits into IP67 Protective Enclosure 200-000020

### Case Material

Polycarbonate

### Power source

CR2032 3V Li-$MnO_2$battery - non user-replaceable, non-rechargeable

### Battery life

Shelf life of up to two years before configuration.
Typically 6 months of operation with normal use (6 minute logging, download data monthly).

### Size

93mm(H) x 54.5mm (W) x 8.6mm (T) including USB cap

### Weight

39g

### Calibration

Calibration traceable to an ISO/IEC 17025 accredited testing laboratory

### Download time

- Typically less than 10 seconds from time of insertion to availability of LTD file in LogTag® Analyzer

### Software requirements

- LogTag® Analyzer version 2.5 or later to configure and download

### USB compatibility

USB 2.0, type A plug

### Accessories

- Wall holder 200-000010
- IP67 Protective Enclosure 200-000020
- Replacement protective cap 200-000425


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