

UTRED30-WiFi

30 day WiFi Logger with display



Technical User Manual

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Safety Information

The UTRED30-WiFi Logger contains a user-replaceable coin-cell lithium battery. When the battery indicates "CR2032", you can replace it as [per the instructions](#). The empty battery should be 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.

Battery Life

The AAA battery life of the UTRED30-WiFi is up to 2 months, dependent on usage.

Several factors will affect the battery life of the product:

- The type and quality of the AAA battery used.
- The Logger usage. Download frequency, recording interval, onscreen review frequency, and the screen power save option all effect battery life.
- The Logger operating temperature.
- The Logger is stored and operated according to LogTag Recorders' recommendations.

Disclaimer

The UTRED30-WiFi 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 UTRED30-WiFi.

Text **in this font** refers to option settings, dialogue boxes or actions to be taken in LogTag Analyzer.

Introduction

The LogTag UTRED30-WiFi Logger features a data logging memory storing up to 16,129 temperature readings and a separate statistical memory, storing maximum and minimum reading as well as alarm duration for each of the last 30 days.

During recording the display shows the current temperature (of the most recent reading), the status (within or outside the acceptance range), a minimum and maximum temperature, an alarm trigger summary of up to the last 30 days (today and 29 days previous) of recording, the current time and battery status. Alarm events can be triggered when a number of readings are outside pre-set alarm thresholds and a "day alarm indicator" appears on the display.

Logged temperature data can be downloaded via a USB extension cable to the free companion software LogTag Analyzer, where you can display data in chart, list or summary formats. The software also allows electronic archiving and exporting or transmitting data in support of sophisticated data management systems.

Features

The UTRED30-WiFi Logger features the familiar LogTag case layout.



Display

The display shows 'at a glance' if alarm events have occurred for both the current day and up to 29 days in the past. Details of any alarm event can be checked directly on the unit by inspecting the statistics history on the recorder's display or in more detail by downloading the logged data. In addition, a red alarm indicator flashes if an alarm event has occurred. The red alarm indicator is not used for any other purpose.

Sensors

The UTRED30-WiFi will accept any sensor from the ST100 product range.

Communication

The UTRED30-WiFi offers two means of downloading data:

1. Via a micro USB socket and connection to a Windows PC.
2. Via WiFi connection to LogTag Online.

Checklist - Required Equipment

- UTRED30-WiFi Logger.
- An external probe of the ST100 series.
- For configuration - a computer running Windows 7 or later and LogTag Analyzer installed.
- A WiFi network capable of WPA/WPA2 security and an internet connection for uploading data to LogTag Online.
- A LogTag Online account for accessing uploaded data is required for WiFi features to be used.

Case

- Mounting lug for secure fastening of Logger to fixtures.
- Micro-USB socket with attached protective insert – shields USB connector from moisture and dirt when not in use.
- Gold-plated, high-quality temperature sensor socket
- Robust polycarbonate case, IP51
- 2 user-replaceable AAA batteries, accessible via a compartment on the rear of the Logger.

Buttons

- **START/CLEAR/STOP** button; can be used to start and stop the unit or to clear an alarm. It is also used to exit the statistics review.
- **REVIEW/MARK** button; can be used to enter the statistics review and to scroll through the statistical data directly on the display. It is also used to place an inspection mark in the data listing.
- **Fn** button; this button is used for with other buttons for special functions.

Setting up your Logger with a WiFi Connection

In order to set up the wireless connection, you first need to connect the Logger to your computer using the included USB cable. To configure the Logger's wireless network connection, please download the [WiFi Wizard](#).

Start the wizard by double clicking the downloaded file. Select the 'Easy WiFi Setup' and follow the instructions given by the WiFi Wizard. Make sure to select your WiFi network and put in your password for your WiFi network.

LogTag Analyzer software can also be used to configure the WiFi connection by navigating to the WiFi settings tab of the Logger configuration options.

Connecting to LogTag Online

Your Logger is now been set up for a connection with LogTag Online. To finish the setup, visit [LogTag Online](#).

Sign in with your account details, or create a new account. Once you are logged into LogTag Online, please click 'register device'. Here you can register your Logger. Enter the Logger's serial number (the number after S/N) and a description.

Click register to complete the process. Your Logger is now ready to upload data to the LogTag Online cloud service.

Configuring the UTRED30-WiFi

Configuring is done using LogTag Analyzer software, which is also used for downloading and analyzing data when not connected to WiFi.

- Start the LogTag Analyzer software.
- Remove the protective cap from the Logger's USB socket and plug the micro USB end of the cable into the socket. Plug the other end of the cable into a USB socket on your computer and wait for the drivers to be installed. You can configure more than one UTRED30-WiFi at the same time, however it is practical to limit the number of units to about 6 using a powered USB hub.
- Select **LogTag - Configure**; LogTag Analyzer will scan all USB ports and display the configuration options for connected Loggers.

Standard Configuration Options

The standard configuration options are very similar to those of other Loggers and include settings such as User ID, start method, pre-start recording, logging interval and duration, start delay, 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.

UTRED30-WiFi Start Options

During configuration with LogTag Analyzer you can decide when the UTRED30-WiFi starts taking temperature readings.

- ... via Push button start: The Logger will start taking temperature readings after you have gone through a specific start sequence of pressing and releasing the **START/CLEAR/STOP** button (See "Starting the Logger" on page 8)
- ... 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 configure the UTRED30-WiFi to start after a delay period, the Logger will not immediately record temperature readings after you have pressed **START/CLEAR/STOP**, 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. You cannot combine a date/time start with pre-start readings or the start delay function.

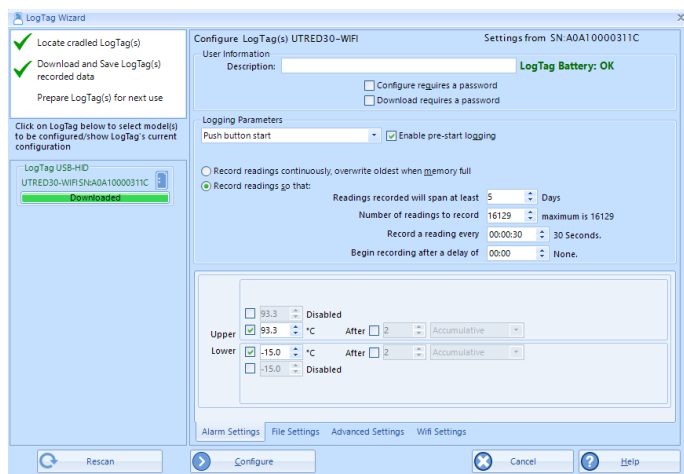
Alarm Configuration Options

The UTRED30-WiFi can display an alarm and transmit data to the cloud if either of the configured alarm trigger conditions have been met. This is indicated on the display by showing the Alarm Indicator (X), a red Alert indicator and the Day Alarm Marker for today (T) if the alarm occurred today).



Each alarm trigger condition consists of a threshold temperature value, an activation type (which can be instant, consecutive or accumulative¹) and an activation number, if it is not an instant alarm.

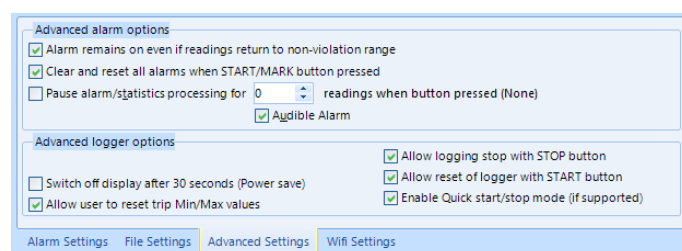
If an alarm trigger condition requires readings to exceed an upper threshold temperature it is called an upper alarm. If an alarm trigger condition requires readings to go below a lower threshold it is called a lower alarm. The alarm triggering structure in the Logger supports many different alarm trigger configurations.



Once an alarm has triggered, the alarm indicator (X) remains shown until the alarm is cleared (See “Clearing an Alarm” on page 9). The day alarm marker (T) remains shown until midnight, then it turns off and the marker for the previous day is shown (-1) to indicate the alarm was registered against what is now the previous day. When midnight passes next, this marker will move to -2 and so on. Once an alarm event occurred, any alarm counter for that event is reset, and the alarm processing starts again. Accumulative or consecutive alarms will re-trigger, if the alarm conditions are met again, and the alarm indicator (X) and the day alarm marker (T) will be shown once again.

Advanced Configuration Options

Select Advanced Options for additional configuration settings. These settings decide how some of the elements are displayed on the screen and set certain options specific to the UTRED30-WiFi.



Parameters that influence the appearance of the display are

- Pause alarm/statistics processing (See “Paused Readings” on page 10)
- PDF Temperature display unit (See “Display Overview” on page 6)
- Switch off display after 30 seconds (See “Power Save” on page 10)

Parameters influencing specific behaviour of the UTRED30-WiFi are:

- Clear and reset alarm when the **START/CLEAR/STOP** button is pressed.
- Leaving the alarm turned on, even if readings return to the normal temperature range again.
- Allowing the user to stop the Logger with the **START/CLEAR/STOP** button.
- Allowing the user to reset the Logger with the **START/CLEAR/STOP** button.
- Allowing the user to reset the MIN/MAX on screen.

Wireless Connectivity

WiFi Settings

Wireless settings are entered via LogTag Analyzer or LogTag WiFi Wizard during configuration while the unit is plugged into a USB port. Following settings are required for each network to be checked for connectivity:

- SSID
- Network Security Key (WiFi Password)

Network settings

Network settings are entered via LogTag Analyzer or LogTag WiFi Wizard while the unit is plugged into a USB port. If manually configuring network settings, then user must enter IP address to assign to Logger.

1

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.

Enter SSID:

Wifi Password:

☐ Enable DHCP

IP Address:

Subnet Mask:

Gateway:

DNS:

If manual, then

- IP Address
- Subnet mask
- Gateway
- DNS settings: manual/automatic

If manual, then

- DNS IP Address

If the Logger has been set up to connect to WiFi and is not connected, the WiFi symbol is shown with a cross:



Display Overview

Day Alarm Markers

This grid shows one row of 7 markers, named Today (**T**) to Day -6 (**-6**), which are switched on when an alarm event occurred on that day.

Week Alarm Markers

This grid shows one row of 4 markers, named last week (**W**) to 4 weeks ago (**4W**), which are switched on when an alarm event occurred on that week.

MIN/MAX Temperature Data

These two 4-digit, 7-segment displays show the minimum and maximum temperatures since the recording started, or since the values were last manually cleared.


Main Temperature Data

This two 4 digit, 7-segment display shows the last recorded temperature while the UTRED30-WiFi is recording. Once the Logger has stopped, nothing will be displayed. The display can show up to 199.9 degrees Fahrenheit, temperatures above this range will be displayed as 199.9, but recorded as the measured value in the log. In Celsius the display can show up to 99.0 degrees Celsius, and temperatures above this range will be displayed as 199.9 degrees Celsius.

Day Number

During review, this shows the day number of the currently displayed day statistic. Today is **00DAYS**, days in the past are represented between yesterday **-01DAYS** and **-29DAYS**.

Backup Battery Low

The battery low symbol  will appear if the UTRED30-WiFi's backup battery is low and requires changing. [Please follow the instructions](#). If the symbol is not shown while the display is turned on, the battery is still OK.

Main Battery Condition

Depending on the AAA battery condition; all, some or none of

the internal segments will show (See "The UTRED30-WiFi can be supplied from one of two power sources:" on page 7).

ALARM/OK indicator

The **X** symbol is shown as soon as the UTRED30-WiFi has registered an alarm event. If no alarms have been registered, or if an existing alarm has been cleared, the **✓** symbol is shown.

Recording state indicators

The recording state indicators show if the UTRED30-WiFi is currently recording data.

- If the **READY** symbol is shown, the UTRED30-WiFi is ready to be started. Depending on the configuration it may already record pre- start readings.
- If the **STARTING** symbol is shown, the Logger has been configured with a start delay. The word **DELAY** is also shown, together with the time in hours and minutes until the start.
- If the **REC** symbol is shown, the UTRED30-WiFi is recording temperatures at the sample interval defined during configuration with LogTag Analyzer.
- If **REC** is shown together with the word **PAUSED**, the product is also recording, but the recorded values are not taken into account when calculating alarm events and durations.
- If the word **STOPPED** is shown, the UTRED30-WiFi has finished recording temperature data.

Time Value and Time Indicators

The time value display is used to show one of the following:

- a clock with the current time;
- time remaining to start of logging with a delayed start or;
- duration, for example of an alarm.

The time indicators identify, which of those is displayed:

- If the word **TIME** is shown, the time value represents the current time in hours and minutes (24-hour format).
- If the word **DELAY** is shown, the time value represents a start delay in hours and minutes.
- If the word **DURATION** is shown, the time value represents the length of time in hours and minutes an alarm threshold was exceeded, for example the time above the upper alarm threshold.

The word **dtst** appears in place of a time value if the Logger is configured for a date/time start, and the start time has not yet passed.

Reading Type

The word **CURRENT** is shown when the temperature on the display represents the last recorded temperature.

The word **MAX** is shown in Review mode, when the temperature on the display represents the maximum recorded temperature for the day displayed.

The word **MIN** is shown in Review mode, when the temperature on the display represents the minimum recorded temperature for the day displayed.

Alarm Threshold Markers

The up-arrow **▲** is shown when the temperature displayed (i.e. last recorded) is above the specified upper temperature threshold. The down-arrow **▼** is shown when the temperature displayed is below the specified lower temperature threshold.

Temperature Units

Depending on the selected display temperature units during configuration, this shows either °F or °C.

Powering the UTRED30-WiFi

The UTRED30-WiFi can be supplied from one of two power sources:

- Externally via a commercially available 5V USB power supply (5W). This is the preferred way of supplying power to the unit. When supplied externally, the Power symbol shows on the display.



- Internally via 2 alkaline AAA batteries. The battery life is typically up to 2 months, depending on the type / quality of the AAA battery used, frequency of data upload, reviewing data on the display, sounding of the audible alarm and whether or not external power is supplied. The batteries inside the unit will not be charged when external power is supplied.

A battery indicator shows the remaining battery capacity:

- 4 bars = full.



- 3 bars = still operating normally.



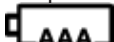
- 2 bars = still operating normally, but 50% capacity or less remaining.



- 1 bar = low, should be replaced.



- no bars = empty, batteries need to be replaced. Will enter low power mode if no USB power provided.



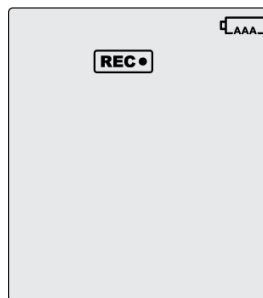
Low power operation

The unit enters low power operation when no external power is supplied, and the main batteries are empty. In low power mode:

- All WiFi and cloud connectivity is suspended.
- The audible alarm is suspended.
- Power save turns on, even if disabled in the settings, i.e. in backup battery mode the display always turns off after 30 seconds. The display could always be turned on via any button press when required.

The display is off with the following exception:

- The recording state indicators show if the unit is recording, stopped, ready or configured for a delayed start.
- The **main battery empty** symbol is shown.



- Reviewing the data is not possible (however a mark will still be placed if the review button is pressed).
- The unit cannot be started via push button start, however, a recording in progress can be stopped.
- MIN/MAX values cannot be cleared.
- The internal backup battery will power the Logger's essential functions, such as internal clock and recording temperature. The red alert indicator is still enabled. This means the Logger will continue to record, or start a scheduled recording, and show if an alarm is currently registered.

At this time the AAA batteries must be replaced, or external power provided. Pushing any button will then activate the suspended functions.

Audible Alarm

The UTRED30-WiFi is fitted with a beeper, which can be turned on when an alarm event has been registered to provide extra feedback. This function is enabled or disabled when configuring the Logger with LogTag Analyzer, please see the "Standard Configuration Options" on page 4 or the "Alarm Configuration Options" on page 5.

Please note, that continual activation of the audible alarm will reduce the working life of the battery. When an alarm event is triggered, the alarm should be cleared as soon as possible. The alarm will sound once every few seconds for the first 24 hours. After this, the interval at which the alarm sounds, will increase to preserve battery life.

Note: The interval will increase, even if the alarm is re-triggered! Please see more information about Alarm Re-triggering on "Introduction" on page 3. The beeper will temporarily turn off when you are reviewing data.

Real Time Clock

The time shown on the recording display is linked to the Logger's internal real time clock.

A day change occurs when the display time rolls through midnight (i.e. 00:00). This is the primary function of the display clock. Each time the Logger is configured with LogTag Analyzer the display clock value is set to the PC's current local time (or user selected timezone). The Logger's clock will be kept up-to-date by LogTag Online each time it connects over WiFi.

LogTag Analyzer can display the logged readings in the following times:

- UTC (GMT)
- Configuration time zone
- Download time zone
- Display clock (PDF) time zone (default)
- Any other timezone

Starting the Logger

Push button start

The Logger must be in **READY** mode for it to be started. Current time and the **READY** symbol are shown, together with the 'Operating Battery Status' symbol:



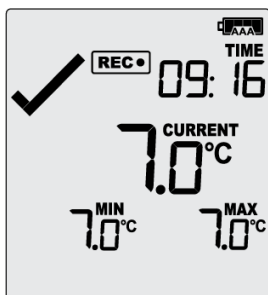
Press and hold the **START/CLEAR/STOP** button. First, **STARTING** is shown in addition to **READY**:



Then **READY** disappears:



Once **READY** disappears, release the button. **STARTING** will also disappear, and the **REC** symbol will be shown. The UTRED30-WiFi now records temperature.

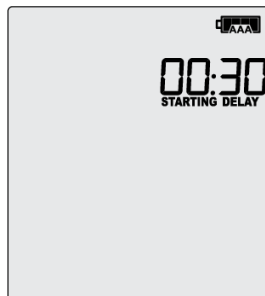


The Logger will not start if you...

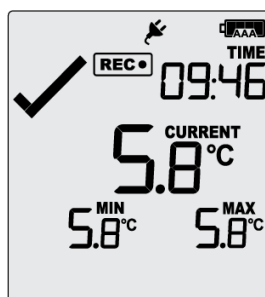
- ... release the button before **READY** disappears.
- ... keep holding the button after **READY** disappears.
- ... the backup battery is critically low and the Loggers is not connected to power
- ...the Logger is operating from primary battery and they are critically low.

Push Button Start with Start Delay

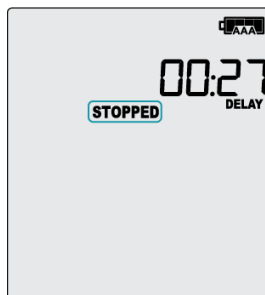
If the Loggers has been configured for push button start with a start delay, the word **DELAY** is shown instead of the **REC** symbol.



The delay time is shown in hours and minutes. The time counts down and the UTRED30-WiFi starts recording when it reaches 0:00.



The timer can be canceled and the Logger reset to **READY**. While **DELAY** is shown, press and hold the **START/CLEAR/STOP** button. **STOPPED** will now show. Release the button when **DELAY** disappears.



STOPPED will then disappear, and **READY** will show, together with the current time, and the Logger can now be started again as normal.

The UTRED30-WiFi will **not** reset if you ...

- release the button before **DELAY** disappears, or
- if you keep holding the button until **STOPPED** disappears.

Automatic date/time start

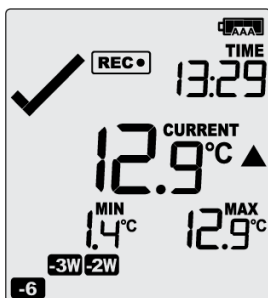
If you configured the UTRED30-WiFi for a date/time start, it will start recording temperature values as soon as the entered start time is reached. The Logger will display the following if a date/time start has been chosen:



During Recording

During normal operation the display shows the most recently recorded temperature. This temperature is updated at the same rate as the logging interval. The current time is also displayed (in 24 hour format). A tick symbol ✓ is shown as long as no alarm event has occurred. If an alarm event is registered, a cross symbol X is shown instead of the tick. At the bottom of the display you can see an alarm day summary, where any days on which an alarm was recorded are highlighted.

Following are some sample display screens:
At 1:29 pm the display shows the following:



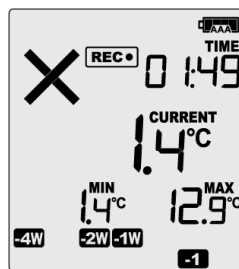
- Alarm events were recorded 6, 18, 19 & 27 days ago
- The following symbols show on the display:
 - 6 for the alarm that occurred 6 days ago
 - 2W for the alarms that occurred 18 and 19 days ago
 - 3W for the alarm that occurred 27 days ago
- These alarms were cleared by an inspector, as the display currently shows the OK tick(✓).
- The current temperature is over the upper alarm threshold, as indicated by the upper alarm marker (▲).
- The duration, however, of this temperature excursion has not yet triggered an alarm

At 1:49pm (20 minutes later) the display shows the following:



- The temperature has remained above the upper alarm threshold and has now triggered an alarm event.
- The alarm symbol X is shown to indicate an alarm event occurred
- The day marker for the current day (T) is shown.

At 1:49am on the next day the display shows the following:



- The temperature has returned to within the accepted range (none of the alarm threshold markers are visible), but the alarm remains present, as it has not been inspected and cleared
- The day summary has shifted by 1 day as the display time has passed through midnight (00:00).
- The following symbols show on the display
 - 1 for the alarm that shifted from today to yesterday. The today symbol no longer shows.
 - 1W for the alarms that shifted from 6 days ago to 7 days ago.
 - 2W for the alarm that shifted from 18 and 19 days ago to 19 and 20 days ago.
 - 4W for the alarm that shifted from 27 and 28 days ago. The symbol for 3 weeks ago no longer shows, as none of the alarms occurred three weeks ago.

Day Alarm Matrix

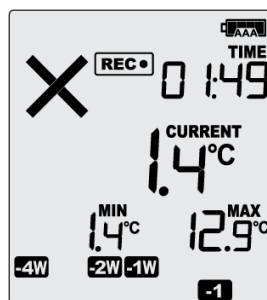
See "Appendix A - Day Alarm Matrix" on page 18.

Marking a reading with an inspection mark

When you press the **REVIEW/MARK** button, the next reading taken by the UTRED30-WiFi will be identified in the downloaded data with an inspection mark.

Clearing an Alarm

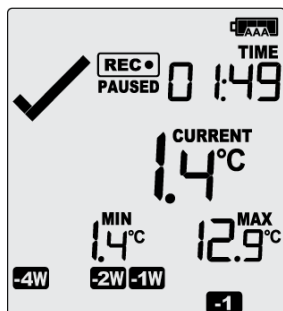
During configuration with LogTag Analyzer you can allow a user to clear an alarm on the display. This is a useful function for an inspector, so new alarms can be recognized easier. This display screen shows an existing alarm that occurred yesterday, but has not yet been cleared:



To clear this alarm (quickstart enabled), press and hold the **START/CLEAR/STOP** button.

The cross X will be replaced with the tick ✓. Release the button when the tick appears. The normal recording display is shown.

In this example the paused function was activated, and the paused symbol is shown on the display. For more information about paused readings please see the section about “Paused Readings” on page 10.

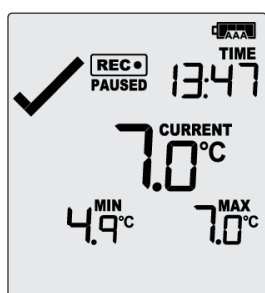


Note: Only the alarm indicator can be cleared! The day alarm marker (**-1**) in the above example remains shown, as it is part of the statistic summary.

Paused Readings

During configuration of the UTRED30-WiFi you can set the option to ignore up to 15 readings for alarm- and statistics calculations after either button is pressed. The readings are still shown on the graph and in the data listing, but they are labeled as paused, and their value is ignored when determining alarm trigger conditions, minimum/maximum values and other statistical calculations. This function is useful when you wish to review readings during the Logger's operation (or clear an alarm), but you do not wish to trigger an alarm due to your handling the product. It also allows the Logger to acclimatise to the environmental conditions again, before further readings are processed.

After a button press the display shows the word **PAUSED** next to the **REC** symbol.

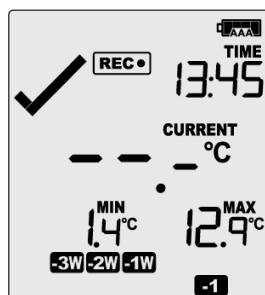


Paused readings are specially marked in the graph and data listings. The option is set in the advanced options dialogue in LogTag Analyzer during configuration and is expressed in number of readings after the last button press (see “Advanced Configuration Options” on page 5).

PAUSED will turn off as soon as the last ignored reading has been recorded. It will show longer, if your last button press was just after the Logger took a temperature reading, but will be displayed for a shorter period if you pressed the button just before a reading is taken. With the options configured in the example (see “Advanced Configuration Options” on page 5) the time for **PAUSED** to show could be as short as 10 minutes, but as long as 20 minutes.

Sensor is disconnected

The display shows --.-, if the external sensor of the UTRED30-WiFi is disconnected.



This function is useful if the sensor is permanently mounted, but you wish to take the UTRED30-WiFi to a computer for downloading its data.

Any values recorded during the time the sensor is disconnected will not be taken into account when calculating statistics values or alarms.

If for example, the temperature was above 10°C for 12 hours (which would normally trigger an alarm event) but the sensor was disconnected for 3 hours during this time, no alarm would be generated.

After downloading the UTRED30-WiFi with LogTag Analyzer, any readings taken while the sensor is disconnected are marked as such in the data list. The graph will show a gap during this period. If the sensor was disconnected for a complete day, the minimum and maximum statistics for that day will show --.- on the display and --.- on the list.

Minimum and maximum values shown on the display will remain visible and will not be updated until the sensor is plugged back in.

Power Save

When power save mode is enabled, the display will automatically switch off after 30 seconds of no button activity.

The Logger uses significantly less battery power with the display off (typically reduces power consumption by up to 30%). This function is appropriate in applications where the current temperature display is not required to be seen frequently, such as in transit monitoring applications. Pressing any button will re-activate the display.

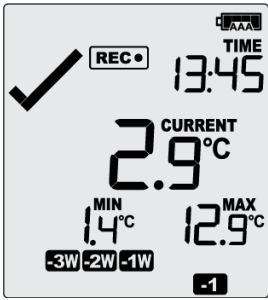
The power save mode is enabled or disabled when configuring the UTRED30-WiFi via LogTag Analyzer in the advanced options window (see “Advanced Configuration Options” on page 5).

Note: The red alert will still blink if there is an alarm when the screen is off. In low power mode, power save will be active regardless of the settings made in LogTag Analyzer.

Clearing the MIN/MAX Display

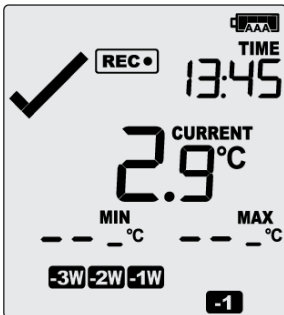
The UTRED30-WiFi tracks the minimum and maximum value of the temperatures recorded since it started logging and displays them below the last recorded temperature value.

MIN/MAX values will be shown with the same temperature unit as the main temperature display.



These values can be reset any time during the recording if the logger has been configured to allow it.

To reset the values, press and hold the **REVIEW/MARK** button until the MIN/MAX values are replaced with dashes, then release the button. The MIN/MAX display will clear, and the Logger will now track new MIN/MAX values from the time the values were reset.



This reset event will be recorded in the logged data. Previous MIN/MAX values are cleared. As soon as the next reading is taken, both minimum and maximum values will be shown again. You will be able to see on the PDF and in the summary in LogTag Analyzer when the MIN/MAX values were cleared, and what they were at the time of clearing.

Reviewing Day Statistics on the UTRED30-WiFi

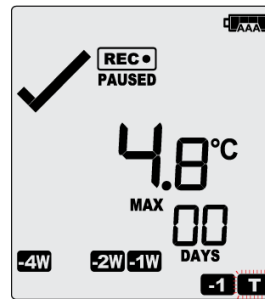
The review of day statistics history is accessed by pressing the **REVIEW/MARK** button.

You can review the data regardless of whether the Logger is still logging data, or has already been stopped.

Following are some sample display screens you might see during a statistics review. All display screens are based on the alarm settings made in "Alarm Configuration Options" on page 5.

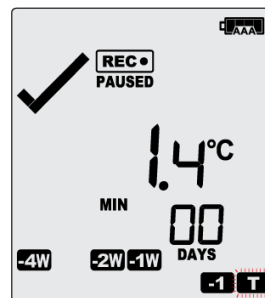
Today's data

Pressing the **REVIEW/MARK** button displays the current day's maximum statistic:



- The Today marker (**T**) flashes and **00 DAYS** is shown to indicate that today's data are being displayed.
- Today, no temperature values were recorded above the upper alarm threshold, and no alarm event was generated (✓).
- The maximum temperature recorded today was 4.8°C.
- The paused function is enabled

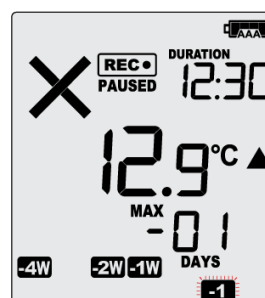
Pressing the **REVIEW/MARK** button again displays the current day's minimum statistic:



- **T** still flashes and **00 DAYS** is still shown, as the same day's data (today) is being displayed.
- Today, no temperature values were recorded below the lower alarm threshold, and no alarm event was generated.
- The minimum temperature recorded today was 1.4°C.

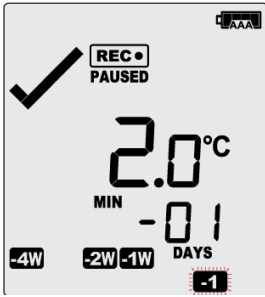
Yesterday's data

Pressing the **REVIEW/MARK** button now displays yesterday's maximum statistic:



- The -1 marker flashes **-1** and **-01 DAYS** is shown to indicate that yesterday's data is being displayed.
- Yesterday, recordings above the upper threshold were recorded, indicated by the upper alarm threshold marker (▲).
- The duration value shows the amount of time recorded above the limit yesterday, which was 12 hours 30 minutes.
- An alarm was triggered, indicated by the **X**, as this duration was longer than the allowed time above the threshold.
- The maximum temperature recorded yesterday was 12.9°C.

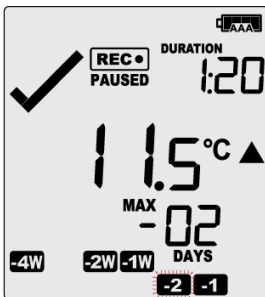
Pressing the **REVIEW/MARK** button now displays yesterday's minimum statistic:



- Still flashes and **-01 DAYS** still shows, as we are still looking at yesterday's data. **-1**
- Yesterday, no temperature values were recorded below the lower alarm threshold. The alarm for the day **-1** was generated by the upper alarm, not by the lower alarm, so a ✓ is displayed in the minimum statistics.
- The minimum temperature recorded yesterday was 2.0°C.

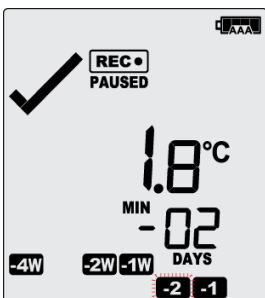
Data from the day before yesterday

Pressing the **REVIEW/MARK** button now displays the maximum statistic from two days ago:



- The **-2** flashes and **-02 DAYS** is shown to indicate that the data being displayed is from two days ago.
- Two days ago recordings above the upper threshold were recorded, indicated by the upper alarm threshold marker.
- The duration was 1 hour 20 minutes, which was shorter than the allowed period, so no alarm event was generated.
- The maximum temperature recorded on the day before yesterday was 11.5°C.

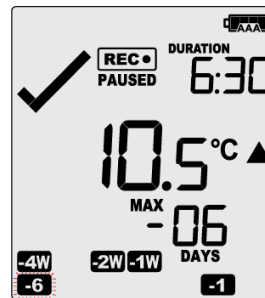
Pressing the **REVIEW/MARK** button now displays the minimum statistic from two days ago:



- **-2** still flashes and **-02 DAYS** still shows, as we are still looking at the data from 2 days ago.
- Yesterday, no temperature values were recorded below the lower alarm threshold, and no alarm event was generated.
- The minimum temperature recorded on the day before yesterday was 1.8°C.

Data from 6 days ago

After pressing the **REVIEW/MARK** button for a few times (skipping days -3 to -5) the maximum statistic from six days ago is displayed:

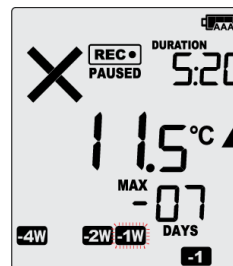


The **-6** flashes and **-06 DAYS** is shown to indicate that the data being displayed is from six days ago.

- Six days ago recordings above the upper threshold were recorded, indicated by the upper alarm threshold marker.
- The duration was 6 hour 30 minutes, which was shorter than the allowed period, so no alarm event was generated.
- The maximum temperature recorded seven days ago was 10.5°C.

Data from 7 days ago

After pressing the **REVIEW/MARK** button twice (skipping the minimum statistics for day -6) the maximum statistic from seven days ago is displayed:



- The **-1W** flashes and **-07 DAYS** is shown to indicate that the data being displayed is from seven days ago.
- Seven days ago recordings above the upper threshold were recorded, indicated by the upper alarm threshold marker.
- The duration was 5 hour 20 minutes
- An alarm event (**X**) was generated. Neither duration from day -6 or -7 by itself would cause an alarm event, however the combined duration is 10 hours 50 minutes, which is more than the allowed 10 accumulative hours.
- The maximum temperature recorded eight days ago was 11.5°C.

Tip: Pressing and holding the **REVIEW/MARK** button will get you back to the previous screen, rather than advancing one screen.

Uploading the Logger's data to the Cloud

Data recorded by the UTRED30-WiFi can be periodically uploaded to LogTag Online via a local WiFi network with internet access, provided the correct connection details have been configured. Pressing and holding the **Fn** button together with the **REVIEW/MARK** button until the cloud upload arrow comes on solid will force an immediate upload to LogTag Online. If a temperature excursion occurs the Logger will also immediately transfer the data to LogTag Online. To upload data the Logger must perform a sequence of steps, which is represented on the screen using different icons:

Initially, the Logger is configured for WiFi, but is not connected



Once the Logger starts establishing a connection and authenticates to the WiFi access point, this symbol is shown:



Once the Logger is connected to WiFi, it will establish a connection with the cloud server



The Logger is connected to WiFi and has successfully established a connection to the cloud server



The Logger is connected to WiFi and to the cloud server and is uploading or receiving data



Once the upload is complete, the arrow turns off



If the WiFi connection fails, this is displayed:

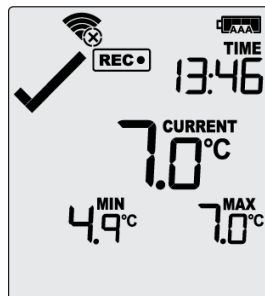


If the cloud connection fails, this is displayed:



Automatic Connection to the Cloud Server

If the UTRED30-WiFi is configured to connect to the cloud server, the screen shown after logging has started displays the WiFi symbol that denotes no connection.



The Logger has been configured to connect to the cloud server but has not yet successfully done this.

After recording the first measurement, the cloud connection is initiated and then repeated every 5 minutes when connected to permanent USB power. When running on AAA batteries, the cloud connection is made every 60 minutes. The sequence as described before will be shown on the LCD. Once the connection sequence is completed, these symbols will remain on the display until the next time the Logger attempts to upload.

When powered from the AAA batteries, the WiFi module will enter power saving mode and display 'zz' next to the WiFi symbol.

Stopping the UTRED30-WiFi

Automatically

The UTRED30-WiFi 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 automatically when it is downloaded.

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

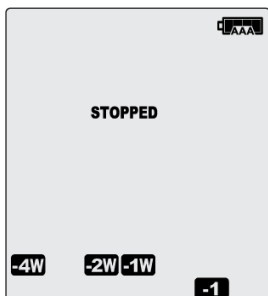
The UTRED30-WiFi can be configured so it can be stopped with the **START/CLEAR/STOP** button. This feature is useful when you take the Logger out of a shipment and don't want to falsify the statistics with readings taken after the shipment completion. The stop function is enabled in the **advanced options** window during configuration (see "Advanced Configuration Options" on page 5). When enabled, following will stop the unit: Press and hold the **START/CLEAR/STOP** button. **STOPPED** is shown in addition to the **REC** symbol.



Then the **REC** symbol disappears:



Once the **REC** symbol disappears, release the button. The Logger will now stop taking readings.



The Logger will **not** stop if you...

- ...release the button before the **REC** symbol disappears
- ...keep holding the button after the **REC** symbol disappears.
- ...release the button before **STOPPED** remains permanently on, or
- ... if you keep holding the button after **STOPPED** remains permanently on for more than 2 seconds.

If an ALARM is present (X) and the **clear alarm by pressing STOP button function** is enabled, you will need to clear the alarm first before you can stop the Logger. Please see "Clearing an Alarm" on page 9 for more information on how to clear an alarm.

Once the Logger has stopped, the alarm status will no longer be indicated with a cross or a tick symbol, and the audible alarm will turn off.

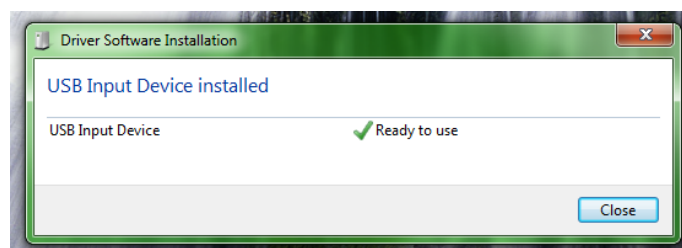
Plugging the UTRED30-WiFi into a USB port

What happens when you plug your UTRED30-WiFi into a USB port depends on the operating system of the computer, the settings made during configuration and whether or not LogTag Analyzer is running.

Microsoft Windows

Up to four drivers will now be installed, depending on the UTRED30-WiFi's configuration.

All drivers are part of the operating system and will typically not require administrator privileges for your computer.



1. Mass Storage Device Driver

2. LogTag Mass Storage USB Device Driver

These two devices are required so you can access the data files in the same way as a USB memory stick. These drivers will not be installed if the UTRED30-WiFi does not generate files.

3. USB Input Device (HID) Driver

This device is used for communication to LogTag Analyzer and its driver will always be installed, even if LogTag Analyzer is not present on the computer.

4. USB Composite Device Driver

This driver signals that multiple devices are involved when plugging in a UTRED30-WiFi.

If you have configured the UTRED30-WiFi to generate files, these will be created every time you plug the Logger into the USB port. While the file creation takes place, busy will be displayed in place of the display clock on the LCD. The logger will not be able to be used during this time. Once finished, the busy symbol will disappear and the current time will instead be displayed.

A new drive or mounted device will appear. The device name will be created from the first 10 digits of the serial number of the UTRED30-WiFi.

While a UTRED30-WiFi is connected to LogTag Analyzer, no temperature readings are taken. The graph will display a gap and the data list will show --- followed by the # symbol.

OSX and Linux

Typically in these operating systems a new drive will be mounted, from which the PDF file can be opened. You will not be able to configure the UTRED30-WiFi using either of these operating systems unless you use virtualization software such as Fusion or Virtualbox to create a hosted Windows environment. You need to discuss these options with your network administrator.

Accessing the files

If the Logger was configured to generate files, a new drive or mounted device will appear. The device name will be created from the serial number of the UTRED30-WiFi. You can access the files by browsing to the newly created drive and double-clicking the PDF, CSV or LTD files. For PDF files you need Adobe Acrobat Reader or a similar PDF viewer. To open the LTD file you need to install the free LogTag Analyzer software. CSV files can be opened with a text editor, or imported into a spreadsheet program such as Microsoft Excel.

The file names contain information about the recorded data, which is detailed in the section about Interpreting the Data on page 1. If a Logger has only taken pre-start readings, PDF and CSV files will not be created.

You should copy the files generated by the Logger to a permanent storage location on your computer, such as the Documents folder, as they are not automatically copied. The data on the unit is retained, and each time you plug the UTRED30-WiFi 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.

Interpreting the Data

See “Appendix B - Data Evaluation Report” on page 19

Data Evaluation - Report

Alarm Status

This shows at a glance if the UTRED30-WiFi recorded alarm conditions during the trip (showing a red **X**) or if no alarms were recorded (green **✓**).

File Information

This section shows general information about the PDF file, such as generation time, date and time formats and the file name, which is compiled from information about the data it contains: LogTag_[serial_number]_[trip number]_[file creation date]_file creation time_[OK or ALM].

Logger Information and Configuration

These sections show general information about the Logger such as serial and model numbers, trip number, battery status and description. It shows how the Logger was started if a start delay was active and the interval used for taking readings.

Recorded Data Information

This block contains information about the data recorded during the trip. It shows the time covered by the recording and statistical data of the trip. You can see the conditions for which each alarm was to be triggered, and how often such a condition occurred.

High Alarm and Low Alarm Information

These two sections summarize the alarm occurrences during the trip, including statistical data.

Recorded Data Chart

The chart shows a graphical representation of the data during the trip. As part of the UTRED30-WiFi configuration process, you set the parameters that influence how the chart is presented.

Markers

The chart will show marks where the UTRED30-WiFi has been downloaded (•) or where an inspection mark has been placed with the **REVIEW/MARK** button (•). It also shows Paused marks (•) where a button press has prevented readings from being

used for statistics and alarm calculations, and a Min/Max reset mark (•) for each time the min/max display on the UTRED30-WiFi is reset.

USB Paused Readings / Sensor unplugged Readings

A gap is shown in the graph where the UTRED30-WiFi was plugged into a USB port at the time it would otherwise have taken a reading, or if the sensor was unplugged.

Alarm Thresholds

The alarm thresholds are shown with red and blue dashed lines (--- for upper, --- for lower) so you can see at a glance where temperatures went outside these limits.

Chart Legend

Shows the symbols for download marks, inspections marks and paused marks if they appear in the readings.

Data Evaluation - Data List

See “Appendix C - Data Evaluation Data list” on page 20

File information

The information from the report page is repeated here.

Recorded Data list

The Data list shows a single row for each recorded reading, along with the date, time and temperature values, plus any special events that were recorded against this reading.

Marked readings

In the data list, readings are marked after the temperature value...

- ...with a + symbol where the UTRED30-WiFi has been downloaded with LogTag Analyzer.
- ...with a * symbol where an inspection mark has been placed with the **START/CLEAR/STOP** button.
- ...with a # symbol where the Logger is communicating with a PC application at the time it would otherwise have taken a reading.

List legend

Shows the symbols for download marks, inspections marks and USB paused readings if they appear in the data.

Data Evaluation - Day Summary

See “Appendix D - Data Evaluation Day Summary” on page 21

File information

The information from the report page is repeated here.

Day Summary

The Day summary shows a single row for each day for which data were recorded. Each row contains minimum and maximum for that day, whether or not an alarm was recorded and how long temperatures were outside the specifications.

List legend

Shows the symbols for **Alarm**(●), **Lower Alarm Violation** (▲) and **Upper alarm violation** (▼) if they appear in the summary, along with their meaning.

Page information

Current page number and the total number of pages appear on every page.

Resetting the Logger

You can reset a Logger back to its original **READY** state. Once re-set, recording can be started again as described in “Starting the Logger” on page 8.

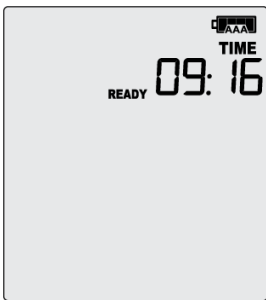
Note that when performing this procedure all recordings and statistics stored in the Logger are deleted and cannot be recovered. Please ensure your data has been saved!

For this process to work, the Logger must be in the **STOPPED** state.

- Press and hold the **START/CLEAR/STOP** button. The **READY** symbol will flash.



When the **READY** symbol remains permanently on, release the button. The Logger is now ready to be started again.



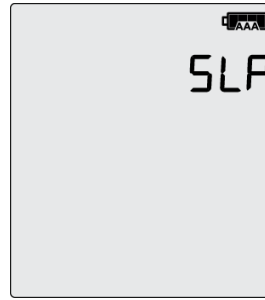
The ability to reset a Logger is enabled or disabled in the Advanced Options dialogue when configuring the UTRED30-WiFi via LogTag Analyzer (see “Advanced Configuration Options” on page 5).

Hibernating a UTRED30-WiFi

When hibernated, the Logger’s power consumption is near zero and the life of the back-up (coin-cell) battery approaches its shelf life (typically 5 or more years). This is useful for conserving battery life when the Logger is not used for extended periods.

UTRED30-WiFi Loggers are placed into Hibernation using LogTag Analyzer by clicking **Hibernate** on the **LogTag menu**.

The display shows **SLP** for a few seconds, before turning itself off.



A hibernated Logger has no active display, however, a button press will wake the Logger up briefly. The display will show:

- The Main Battery Condition symbol
- The low battery symbol if the Backup battery requires replacing.
- The text **NOT READY** if the battery is OK, and the Logger can be re-activated at a later point.

A hibernated Logger can be activated again by configuring it with LogTag Analyzer.

AAA batteries should be removed when the UTRED30-WiFi is intended to be stored for extended periods.

Airplane Mode

A Logger can be switched to airplane mode by pressing and holding the **Fn** button together with the **START/CLEAR/STOP** button until the airplane symbol comes on permanently. To exit Airplane mode the same procedure is followed, expect the Airplane symbol switches permanently off. In airplane mode, the wireless functionality is disabled, and device will not transmit or receive over the Wireless network.

Airplane mode should be used if you intend to use the Logger for air shipments, transport the logger by air with the AAA batteries installed, or are operating in a controlled transmission zone.

The Airplane mode symbol shows:



Technical Specifications

Model Number

UTRED30-WiFi

Temperature Sensor Measurement Range

-40°C to +99°C (-40°F to +210°F²)

Logger Operating Temperature Range

-30°C to +60°C (-22°F to +140°F)³

Storage Temperature Range

-10°C to +40°C (32°F to +104°F)

Ambient humidity range during transport and use

0 to 95%RH

² Values above 199.9°F cannot be shown on the display. The values will, however, be recorded and shown in the LogTag Analyzer software
³ Operating on external USB power

Rated Temperature Resolution

- 0.1°C (0.2°F) for measurements -40°C to +50°C (-40°F to +122°F)
- 0.2°C (0.4°F) for measurements +50°C to +70°C (+122°F to +158°F)
- 0.3°C (0.5°F) for measurements +70°C to +80°C (+158°F to +176°F)
- 0.4°C-0.6°C (0.7°F to 1°F) for measurements +80°C to +99°C (+176°F to +210°F)

Rated Temperature Accuracy

- Better than $\pm 0.8^{\circ}\text{C}$ ($\pm 1.4^{\circ}\text{F}$) for -40°C to -20°C (-40°F to -4°F), typically $\pm 0.5^{\circ}\text{C}$ (0.9°F)
- Better than $\pm 0.5^{\circ}\text{C}$ ($\pm 0.9^{\circ}\text{F}$) for -20°C to +40°C (-4°F to +104°F), typically $\pm 0.3^{\circ}\text{C}$ (0.6°F)
- Better than $\pm 0.8^{\circ}\text{C}$ ($\pm 1.4^{\circ}\text{F}$) for +40°C to +70°C (+104°F to +158°F), typically $\pm 0.7^{\circ}\text{C}$ (1.3°F)
- Better than $\pm 1.2^{\circ}\text{C}$ ($\pm 2.2^{\circ}\text{F}$) for +70°C to +99°C (+158°F to +210°F), typically $\pm 1^{\circ}\text{C}$ (1.8°F)

Sensor Compatibility

All ST100 precision thermistor external probes can be interchangeably connected to the UTRED30-WiFi. Please refer to the dedicated sensor page on the LogTag® Recorders website.

Sensor Type

Precision Thermistor

Clock accuracy

Quartz crystal locked real time clock, rated accuracy $\pm 25\text{ppm}$ @ 25°C (equiv to 2.5 seconds/day)
Rated temperature coefficient is $-0.034 \pm 0.006\text{ppm}/^{\circ}\text{C}$ (i.e. typically $\pm 0.00294\text{seconds/day}/^{\circ}\text{C}$)

Recording Capacity

16,129 real time temperature values, giving

- 67 days @ 6 minute logging interval or
- 112 days @ 10 minute logging interval
- 168 days @ 15 minute logging interval.

Supports continuous logging ("wrap-around") or specific recording period.

Statistics memory

for displaying statistics on LCD

Max/Min values for the past 30 days

Alarm duration values for the past 30 days.

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 18 hours
- Push button start with quick start option
- Date/time start up to 180 days in the future

Alarm functions

- Six configurable upper and lower alarms
- OK tick and Alarm cross on display, linked to alarms
- Audible alarm and red alert indicator

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

IP51

Case Material

Polycarbonate

Power source

1 x 5V power input from commercial 5V USB power supply with Micro-USB plug

2 x 1.5V AAA alkaline batteries (optional)

Battery life

AAA – up to 2 months, dependent on usage and environmental conditions.

CR2032 - Typically 1 year of operation with normal use (6 minute logging, statistics reviewed on the display no more than once daily for no longer than 30 seconds each time, download data monthly) provided Logger is kept within the storage temperature range when not in use.

The audible alarm reduces battery life significantly.

Size

123mm(H) x 63mm (W) x 12.5mm (T) (excluding probe)

Weight

80g (excluding probe and AAA batteries)

Calibration

Calibration traceable to an ISO/IEC 17025 accredited testing laboratory

PDF features

- Compliant with standard 1.6 and later
- Single page report with trip and alarm summary
- Single page day summary with MIN/MAX report
- Multi-page report with list of readings including date/time

USB compatibility

USB 2.0, Micro-USB plug

Download time

- Typically with full memory (16,129 readings) less than 10 seconds, depending on computer or readout device used.
- Typically with full memory (16,129 readings) less than 30 seconds from the time of insertion to the availability of the PDF report.

Software requirements

- LogTag Analyzer version 3.1 or later to configure and download
- PDF reader software to access onboard PDF files

Accessories

- USB cable
- Wall bracket UTRED30-WMB

Appendix A - Day Alarm Matrix

During normal recording, symbols marked with ● are shown if an alarm occurred on that day.

During review, symbols marked with ● are shown to indicate for which day review data are being displayed on the screen.

	-5	-4	-3	-2	-1	T	-4W	-3W	-2W	-1W
Today						● ●				
Day -1					● ●					
Day -2				● ●						
Day -3			● ●							
Day -4		● ●								
Day -5	● ●									
Day -6										● ●
Day -7 (-1 week)										● ●
Day -8 (-1 week and 1 day)					●					● ●
Day -9 (-1 week and 2 days)				●						● ●
Day -10 (-1 week and 3 days)			●							● ●
Day -11 (-1 week and 4 days)		●								● ●
Day -12 (-1 week and 5 days)	●									● ●
Day -13 (-1 week and 6 days)										● ●
Day -14 (-2 weeks)									● ●	
Day -15 (-2 weeks and 1 day)					●				● ●	
Day -16 (-2 weeks and 2 days)				●					● ●	
Day -17 (-2 weeks and 3 days)			●						● ●	
Day -18 (-2 weeks and 4 days)		●							● ●	
Day -19 (-2 weeks and 5 days)	●								● ●	
Day -20 (-2 weeks and 6 days)									● ●	
Day -21 (-3 weeks)								● ●		
Day -22 (-3 weeks and 1 day)					●			● ●		
Day -23 (-3 weeks and 2 days)				●				● ●		
Day -24 (-3 weeks and 3 days)			●					● ●		
Day -25 (-3 weeks and 4 days)		●						● ●		
Day -26 (-3 weeks and 5 days)	●							● ●		
Day -27 (-3 weeks and 6 day)								● ●		
Day -28 (-4 weeks)							● ●			
Day -29 (-4 weeks and 1 day)					●		● ●			
Day -30 (-4 weeks and 2 days)				●			● ●			
Day -31 (-4 weeks and 3 days)			●				● ●			
Day -32 (-4 weeks and 4 days)		●					● ●			
Day -33 (-4 weeks and 5 days)	●						● ●			
Day -34 (-4 weeks and 6 days)							● ●			

File Information

Alarm Status

Recorder Information

Recorder Configuration

Recorded Data Overview

Alarm Information



Recorded Data Chart

Chart Legend

● Paused Mark ● Inspection Mark

Appendix C - Data Evaluation Data list



Filename: LogTag_A0A700002060_86_180905_1307_ALM.pdf
File created: 05/09/18 01:07:02pm
Note: All times are in 12hr UTC +12:00, All dates are DD/MM/YY

File Information

Date	Time	°F	Date	Time	°F	Date	Time	°F	Date	Time	°F
03/09/18	10:54:08am	2.8	03/09/18	11:44:08am	3.9	03/09/18	12:34:08pm	5.2	03/09/18	01:24:08pm	3.5
03/09/18	10:54:38am	2.9	03/09/18	11:44:38am	4.0	03/09/18	12:34:38pm	5.5	03/09/18	01:24:38pm	3.4
03/09/18	10:55:08am	2.8	03/09/18	11:45:08am	4.1	03/09/18	12:35:08pm	5.5	03/09/18	01:25:08pm	3.1
03/09/18	10:55:38am	3.0	03/09/18	11:45:38am	4.1	03/09/18	12:35:38pm	5.5	03/09/18	01:25:38pm	3.0
03/09/18	10:56:08am	2.9	03/09/18	11:46:08am	4.2	03/09/18	12:36:08pm	5.6	03/09/18	01:26:08pm	2.8
03/09/18	10:56:38am	3.0	03/09/18	11:46:38am	4.2	03/09/18	12:36:38pm	5.7	03/09/18	01:26:38pm	2.4
03/09/18	10:57:08am	3.0	03/09/18	11:47:08am	4.3	03/09/18	12:37:08pm	5.8	03/09/18	01:27:08pm	2.3
03/09/18	10:57:38am	3.1	03/09/18	11:47:38am	4.4	03/09/18	12:37:38pm	5.8	03/09/18	01:27:38pm	2.2
03/09/18	10:58:08am	3.2	03/09/18	11:48:08am	4.5	03/09/18	12:38:08pm	5.9	03/09/18	01:28:08pm	2.2
03/09/18	10:58:38am	3.3	03/09/18	11:48:38am	4.6	03/09/18	12:38:38pm	6.0	03/09/18	01:28:38pm	2.1
03/09/18	10:59:08am	3.3	03/09/18	11:49:08am	4.7	03/09/18	12:39:08pm	6.1	03/09/18	01:29:08pm	2.3
03/09/18	10:59:38am	3.4	03/09/18	11:49:38am	4.7	03/09/18	12:39:38pm	6.2	03/09/18	01:29:38pm	2.3
03/09/18	11:00:08am	3.4	03/09/18	11:50:08am	4.8	03/09/18	12:40:08pm	6.2	03/09/18	01:30:08pm	2.4
03/09/18	11:00:38am	3.6	03/09/18	11:50:38am	4.9	03/09/18	12:40:38pm	6.1	03/09/18	01:30:38pm	2.5
03/09/18	11:01:08am	3.7	03/09/18	11:51:08am	4.9	03/09/18	12:41:08pm	6.1	03/09/18	01:31:08pm	2.5
03/09/18	11:01:38am	3.7	03/09/18	11:51:38am	5.1	03/09/18	12:41:38pm	5.9	03/09/18	01:31:38pm	2.5
03/09/18	11:02:08am	3.8	03/09/18	11:52:08am	5.1	03/09/18	12:42:08pm	5.9	03/09/18	01:32:08pm	2.6
03/09/18	11:02:38am	3.8	03/09/18	11:52:38am	5.2	03/09/18	12:42:38pm	5.7	03/09/18	01:32:38pm	2.8
03/09/18	11:03:08am	3.9	03/09/18	11:53:08am	5.3	03/09/18	12:43:08pm	5.6	03/09/18	01:33:08pm	2.9
03/09/18	11:03:38am	4.1	03/09/18	11:53:38am	5.3	03/09/18	12:43:38pm	5.4	03/09/18	01:33:38pm	3.0
03/09/18	11:04:08am	4.1	03/09/18	11:54:08am	5.5	03/09/18	12:44:08pm	5.3	03/09/18	01:34:08pm	3.0
03/09/18	11:04:38am	4.1	03/09/18	11:54:38am	5.6	03/09/18	12:44:38pm	5.1	03/09/18	01:34:38pm	3.0
03/09/18	11:05:08am	4.2	03/09/18	11:55:08am	5.6	03/09/18	12:45:08pm	4.9	03/09/18	01:35:08pm	3.1
03/09/18	11:05:38am	4.3	03/09/18	11:55:38am	5.7	03/09/18	12:45:38pm	4.8	03/09/18	01:35:38pm	3.2
03/09/18	11:06:08am	4.5	03/09/18	11:56:08am	5.7	03/09/18	12:46:08pm	4.6	03/09/18	01:36:08pm	3.2
03/09/18	11:06:38am	4.6	03/09/18	11:56:38am	5.8	03/09/18	12:46:38pm	4.4	03/09/18	01:36:38pm	3.3
03/09/18	11:07:08am	4.6	03/09/18	11:57:08am	5.9	03/09/18	12:47:08pm	4.2	03/09/18	01:37:08pm	3.4
03/09/18	11:07:38am	4.7	03/09/18	11:57:38am	6.0	03/09/18	12:47:38pm	3.9	03/09/18	01:37:38pm	3.4
03/09/18	11:08:08am	4.7	03/09/18	11:58:08am	6.1	03/09/18	12:48:08pm	3.9	03/09/18	01:38:08pm	3.5
03/09/18	11:08:38am	4.9	03/09/18	11:58:38am	6.1	03/09/18	12:48:38pm	3.6	03/09/18	01:38:38pm	3.6
03/09/18	11:09:08am	4.9	03/09/18	11:59:08am	6.1	03/09/18	12:49:08pm	3.4	03/09/18	01:39:08pm	3.7
03/09/18	11:09:38am	5.0	03/09/18	11:59:38am	6.4	03/09/18	12:49:38pm	3.2	03/09/18	01:39:38pm	3.8
03/09/18	11:10:08am	5.1	03/09/18	12:00:08pm	6.4	03/09/18	12:50:08pm	2.9	03/09/18	01:40:08pm	3.9
03/09/18	11:10:38am	5.1	03/09/18	12:00:38pm	6.4	03/09/18	12:50:38pm	2.8	03/09/18	01:40:38pm	3.9
03/09/18	11:11:08am	5.2	03/09/18	12:01:08pm	6.5	03/09/18	12:51:08pm	2.5	03/09/18	01:41:08pm	4.0
03/09/18	11:11:38am	5.3	03/09/18	12:01:38pm	6.6	03/09/18	12:51:38pm	2.4	03/09/18	01:41:38pm	4.1
03/09/18	11:12:08am	5.4	03/09/18	12:02:08pm	6.7	03/09/18	12:52:08pm	2.3	03/09/18	01:42:08pm	4.1
03/09/18	11:12:38am	5.5	03/09/18	12:02:38pm	6.7	03/09/18	12:52:38pm	2.3	03/09/18	01:42:38pm	4.3
03/09/18	11:13:08am	5.5	03/09/18	12:03:08pm	6.8	03/09/18	12:53:08pm	2.3	03/09/18	01:43:08pm	4.3
03/09/18	11:13:38am	5.6	03/09/18	12:03:38pm	6.9	03/09/18	12:53:38pm	2.3	03/09/18	01:43:38pm	4.5
03/09/18	11:14:08am	5.7	03/09/18	12:04:08pm	6.9	03/09/18	12:54:08pm	2.4	03/09/18	01:44:08pm	4.5
03/09/18	11:14:38am	5.7	03/09/18	12:04:38pm	6.9	03/09/18	12:54:38pm	2.6	03/09/18	01:44:38pm	4.6
03/09/18	11:15:08am	5.9	03/09/18	12:05:08pm	6.9	03/09/18	12:55:08pm	2.7	03/09/18	01:45:08pm	4.7
03/09/18	11:15:38am	5.9	03/09/18	12:05:38pm	7.7	03/09/18	12:55:38pm	2.7	03/09/18	01:45:38pm	4.7
03/09/18	11:16:08am	6.0	03/09/18	12:06:08pm	6.7	03/09/18	12:56:08pm	2.9	03/09/18	01:46:08pm	4.9
03/09/18	11:16:38am	6.1	03/09/18	12:06:38pm	6.5	03/09/18	12:56:38pm	2.9	03/09/18	01:46:38pm	5.0
03/09/18	11:17:08am	6.1	03/09/18	12:07:08pm	6.3	03/09/18	12:57:08pm	3.0	03/09/18	01:47:08pm	5.0
03/09/18	11:17:38am	6.2	03/09/18	12:07:38pm	6.2	03/09/18	12:57:38pm	3.1	03/09/18	01:47:38pm	5.2
03/09/18	11:18:08am	6.2	03/09/18	12:08:08pm	6.1	03/09/18	12:58:08pm	3.1	03/09/18	01:48:08pm	5.2
03/09/18	11:18:38am	6.3	03/09/18	12:08:38pm	5.8	03/09/18	12:58:38pm	3.2	03/09/18	01:48:38pm	5.2
03/09/18	11:19:08am	6.4	03/09/18	12:09:08pm	5.7	03/09/18	12:59:08pm	3.2	03/09/18	01:49:08pm	5.3
03/09/18	11:19:38am	6.5	03/09/18	12:09:38pm	5.5	03/09/18	12:59:38pm	3.3	03/09/18	01:49:38pm	5.5
03/09/18	11:20:08am	6.6	03/09/18	12:10:08pm	5.2	03/09/18	01:00:08pm	3.4	03/09/18	01:50:08pm	5.6
03/09/18	11:20:38am	6.7	03/09/18	12:10:38pm	5.0	03/09/18	01:00:38pm	3.4	03/09/18	01:50:38pm	5.6
03/09/18	11:21:08am	6.7	03/09/18	12:11:08pm	4.7	03/09/18	01:01:08pm	3.7	03/09/18	01:51:08pm	5.8
03/09/18	11:21:38am	6.7	03/09/18	12:11:38pm	4.5	03/09/18	01:01:38pm	3.6	03/09/18	01:51:38pm	5.7
03/09/18	11:22:08am	6.8	03/09/18	12:12:08pm	4.4	03/09/18	01:02:08pm	3.7	03/09/18	01:52:08pm	5.6
03/09/18	11:22:38am	6.6	03/09/18	12:12:38pm	4.2	03/09/18	01:02:38pm	3.8	03/09/18	01:52:38pm	5.6
03/09/18	11:23:08am	6.4	03/09/18	12:13:08pm	4.0	03/09/18	01:03:08pm	3.9	03/09/18	01:53:08pm	5.5
03/09/18	11:23:38am	6.2	03/09/18	12:13:38pm	3.7	03/09/18	01:03:38pm	3.9	03/09/18	01:53:38pm	5.4
03/09/18	11:24:08am	6.1	03/09/18	12:14:08pm	3.4	03/09/18	01:04:08pm	4.0	03/09/18	01:54:08pm	5.2
03/09/18	11:24:38am	5.9	03/09/18	12:14:38pm	3.2	03/09/18	01:04:38pm	4.1	03/09/18	01:54:38pm	5.1
03/09/18	11:25:08am	5.7	03/09/18	12:15:08pm	3.1	03/09/18	01:05:08pm	4.1	03/09/18	01:55:08pm	4.9
03/09/18	11:25:38am	5.6	03/09/18	12:15:38pm	3.0	03/09/18	01:05:38pm	4.3	03/09/18	01:55:38pm	4.7
03/09/18	11:26:08am	5.5	03/09/18	12:16:08pm	2.9	03/09/18	01:06:08pm	4.4	03/09/18	01:56:08pm	4.6
03/09/18	11:26:38am	5.2	03/09/18	12:16:38pm	2.8	03/09/18	01:06:38pm	4.3	03/09/18	01:56:38pm	4.3
03/09/18	11:27:08am	4.9	03/09/18	12:17:08pm	2.9	03/09/18	01:07:08pm	4.5	03/09/18	01:57:08pm	4.2
03/09/18	11:27:38am	4.7	03/09/18	12:17:38pm	3.0	03/09/18	01:07:38pm	4.6	03/09/18	01:57:38pm	4.0
03/09/18	11:28:08am	4.5	03/09/18	12:18:08pm	3.0	03/09/18	01:08:08pm	4.7	03/09/18	01:58:08pm	3.9
03/09/18	11:28:38am	4.4	03/09/18	12:18:38pm	3.1	03/09/18	01:08:38pm	4.7	03/09/18	01:58:38pm	3.8
03/09/18	11:29:08am	4.1	03/09/18	12:19:08pm	3.2	03/09/18	01:09:08pm	4.8	03/09/18	01:59:08pm	3.5
03/09/18	11:29:38am	3.9	03/09/18	12:19:38pm	3.2	03/09/18	01:09:38pm	4.9	03/09/18	01:59:38pm	3.2
03/09/18	11:30:08am	3.8	03/09/18	12:20:08pm	3.3	03/09/18	01:10:08pm	5.1	03/09/18	02:00:08pm	3.0
03/09/18	11:30:38am	3.5	03/09/18	12:20:38pm	3.4	03/09/18	01:10:38pm	5.1	03/09/18	02:00:38pm	2.8
03/09/18	11:31:08am	3.3	03/09/18	12:21:08pm	3.4	03/09/18	01:11:08pm	5.2	03/09/18	02:01:08pm	2.6
03/09/18	11:31:38am	3.1	03/09/18	12:21:38pm	3.6	03/09/18	01:11:38pm	5.2	03/09/18	02:01:38pm	2.4
03/09/18	11:32:08am	2.9	03/09/18	12:22:08pm	3.7	03/09/18	01:12:08pm	5.3	03/09/18	02:02:08pm	2.2
03/09/18	11:32:38am	2.7	03/09/18	12:22:38pm	3.8	03/09/18	01:12:38pm	5.5	03/09/18	02:02:38pm	2.1
03/09/18	11:33:08am	2.6	03/09/18	12:23:08pm	3.7	03/09/18	01:13:08pm	5.6	03/09/18	02:03:08pm	2.0
03/09/18	11:33:38am	2.5	03/09/18	12:23:38pm	3.7	03/09/18	01:13:38pm	5.6	03/09/18	02:03:38pm	2.0
03/09/18	11:34:08am	2.5	03/09/18	12:24:08pm	3.8	03/09/18	01:14:08pm	5.7	03/09/18	02:04:08pm	2.0
03/09/18	11:34:38am	2.6	03/09/18	12:24:38pm	3.9	03/09/18	01:14:38pm	5.7	03/09/18	02:04:38pm	2.2
03/09/18	11:35:08am	2.7	03/09/18	12:25:08pm	4.0	03/09/18	01:15:08pm	5.9	03/09/18	02:05:08pm	2.3
03/09/18	11:35:38am	2.7	03/09/18	12:25:38pm	4.1	03/09/18	01:15:38pm				

Appendix D - Data Evaluation Day Summary



Filename: LogTag_A0A700002060_86_180905_1307_ALM.pdf
File created: 05/09/18 01:07:02pm
Note: All times are in 12hr UTC +12:00, All dates are DD/MM/YY

Day Summary

Serial #: A0A700002060	Model #: UTRED30-16	Battery: OK
Desc: 779 min		

Day	Date	Alarm	Max(°F)	Upper Duration	Min(°F)	Lower Duration	Inspection	Notes/Sign.
0	05/09/2018		11.1		-40.4 ▼			None
-1	04/09/2018		34.7		2.8		AM PM	
-2	03/09/2018		16.7		-40.4 ▼	5 minutes		None