USER GUIDE

UTREL30-WiFi

LogTag

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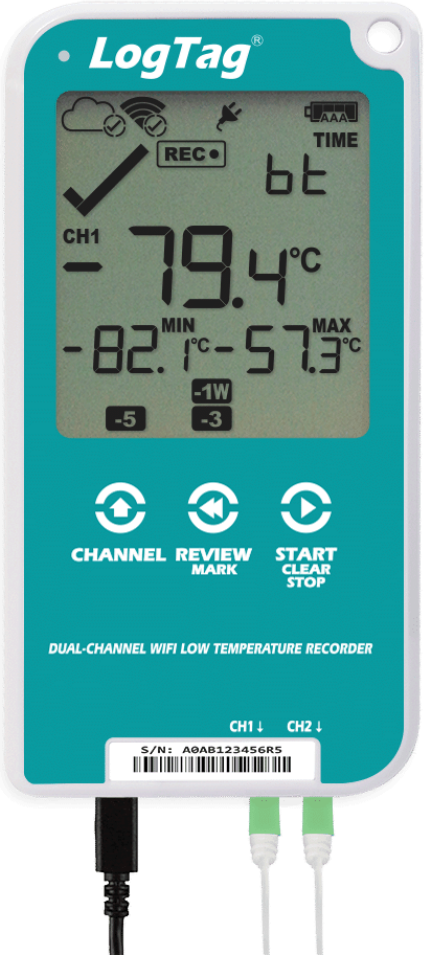

UTREL30-WiFi

Dual-Channel Wireless Low-Temperature Data Logger

Product User Guide

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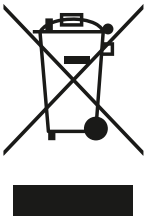
Safety Information

The UTREL30-WiFi PDF USB temperature logger contains two "AAA" non-rechargeable batteries. These batteries can be replaced as detailed in Replacing the AAA batteries. The logger also contains a non-rechargeable backup battery ($LiMnO_2$ CR2032 coin cell).

When this battery indicates “LOW” (), it can be replaced by a qualified technician. Please contact your distributor for further information and also refer to the section about Powering the UTREL30-WiFi on page 43.



Keep out of the reach of children!

Do not expose the logger to extreme temperatures as it may lead to the destruction of the battery and may cause injuries.

Empty batteries should be recycled or disposed of according to your local regulations.

Liability

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

- if the device was used beyond LogTag North America’s 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; or
- for consequential loss.

Disclaimer

The UTREL30-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.

Battery Life

The batteries in the UTREL30-WiFi designed to power the device for up to 2 months in case of a power failure, provided

- fresh batteries from a reputable manufacturer are used;
- a strong wireless signal is available where the UTREL30-WiFi is deployed;
- the acoustic alarm is not active over long periods;
- the recording interval is not shorter than 5 minutes; and
- the device is stored and operated according to LogTag® North America's recommendations.

Please refer to Powering the UTREL30-WiFi on page 43 for more information.

Regulatory Compliance

This module has been tested and complies with the FCC, IC RSS-210, CE and SRRC rules and regulations for intentional transmitters. Any limits in these regulations typically are designed to provide reasonable protection against harmful interference in approved installations. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
The Operation is subject to the following conditions:

1. Modifications or changes to this equipment not expressly approved by the party responsible for compliance may render void the user's authority to operate this equipment.
2. The device is not approved for hand-held operation. The safe user distance, for RF exposure, is ≥ 200 mm.

Typographical Conventions

Text **in this font** refers to buttons on the UTREL30-WiFi.

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.

This text describes certain aspects of the product, where incorrect use of a feature may lead to inadvertent loss of data.

This text contains important information for the correct operation of your UTREL30-WiFi.

This text contains information that explains some aspects of a feature in more detail.

This text contains tips that help you get the best out of your UTREL30-WiFi logger

Introduction

The LogTag® UTREL30-WiFi dual-channel temperature data logger automatically uploads real-time temperature data[1] to your LogTag® Online cloud account via your existing wireless network. It features a large, easy-to-read display, along with many familiar attributes known from the LogTag® family of data loggers. These include nonvolatile memory for up to 16,065 temperature readings and a statistical memory, storing maximum and minimum reading as well as alarm duration for each of the last 30 days, separate for each channel.

During recording the display shows the following, alternating for each channel:

- The current temperature (of the most recent reading)
- The alarm status, current time and battery status
- Minimum and maximum temperatures since the start of the trip
- An alarm trigger summary of up to the last 30 days (today and 29 days previous)
- The wireless and cloud connection states

Alarm events can be triggered when a number of readings are outside pre-set temperature thresholds, and a "day alarm indicator" appears on the display. At set intervals, the UTREL30-WiFi uploads the data to your LogTag® Online cloud account, where it can be viewed, analyzed and shared with others, or downloaded for further analysis.

Logged temperature data can also be viewed on any PC by plugging the unit into a computer's USB port via a micro-USB cable, for example if a Wireless Network is unavailable. This allows viewing a PDF file, which can be accessed using PDF software such as Acrobat Reader, or downloading the data to the free companion software LogTag® Analyzer, where you can display data in chart, list or summary formats.

1 Please refer to Transferring data to LogTag® Online (on page 32) for detailed information about upload frequency

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Features

The UTREL30-WiFi Dual-channel temperature logger features a large display, wireless and USB connectivity with a familiar LogTag® feel.

Figure 1: UTREL30-WiFi features

Case

- Mounting lug for secure fastening of logger to fixtures
- Micro-USB socket with attached protective cap
- Gold-plated, high-quality temperature probe sockets
- Robust polycarbonate case, IP51
- 2 user replaceable AAA batteries, accessible via a compartment at the rear of the product

Buttons

- **START**/CLEAR/STOP button (⏻)
  This is used to start the unit, and clear active alarms. It is also used to exit the statistics review.

- **REVIEW/MARK** button ( )
  This is used to review recorded data the trip directly on the display, to reset the min/max data on the display and to stop the unit.
  It is also used to place an inspection mark in the data.
- **Channel/FUNCTION** button ( )
  This button is used to manually switch the channels shown on the display, and to initiate the Bluetooth connection.

  It is also used together with one of the other buttons to force uploading data to LogTag® Online or to enter Airplane mode.

Display and LED

The extra large display shows current, minimum and maximum temperatures and any alarm events that occurred for the current day and up to 29 days in the past. Details of any alarm event can be checked by inspecting the statistics history on the logger's display or in more detail via your LogTag® Online cloud account. In addition, a red Alarm LED shows if an alarm event has occurred.

External Probes

The UTREL30-WiFi will accept external probes from the ST10 and CP10S product ranges.

Communication

The UTREL30-WiFi offers two means of downloading data:

1. Use the built-in Micro USB socket to transfer data directly to a PC.
2. Use the WiFi connection to upload data to LogTag® Online.

The unit is configured via a PC using LogTag® Analyzer. Wireless connection data are configured using the LogTag® Online Connection Wizard.
You can also use the logger's Bluetooth feature to configure the wireless settings, using a smart device such as a smartphone or tablet.

Power Supply

The same USB socket that is used for communication is also used for providing power to the UTREL30-WiFi, using an external 5V USB power supply. The AAA batteries maintain all functionality when USB power is not connected. A long-life CR2032 lithium backup battery maintains essential functions if the AAA batteries are empty and external power is not supplied.

PDF

The UTREL30-WiFi will generate a detailed PDF report when plugged into a USB port of a PC. The PDF report shows a summary of the trip, presents the data in chart and list format and also includes a day summary page, showing an overview of the statistics collected. A CSV file of the data list is also available.

What You Need

Required Items

In addition to your LogTag® UTREL30-WiFi Dual-Channel Wireless Low-Temperature Data Logger you will need the following:

- A LogTag® Cloud Account for storing and accessing uploaded data
- A PC or mobile device with a modern web browser to set up your account and to view the data
- A WiFi network with one of the following supported authentication methods[2]:
  - Open Authentication
  - WPA2/PSK password authentication, with or without PMF
  - EAP-PEAP authentication
  - EAP-TTLS authentication
- An internet connection for uploading data to the LogTag® Online cloud server
- A micro-USB cable to connect the UTREL30-WiFi to your PC or power supply
- One or two external probes of the ST10 or CP10S series
- A PC running Windows 10 or later and LogTag® Analyzer 3 installed (or a stand-alone version of the LogTag® Online Connection Wizard), or a mobile device, to connect the UTREL30-WiFi to the wireless LAN and to configure it for logging
- A PC with PDF reader software installed for viewing the generated PDF files
- A 5V/5W USB power supply to power the unit permanently via the USB socket

2. The UTREL30-WiFi does not support certificate based authentication methods.

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Optional Items

In addition to the above, following items are useful accessories:

- Your smartphone with the LogTag® Mobile app installed
- Two AAA batteries as a backup if main power fails

> **!** For optimum performance we recommend **Lithium Iron Disulphide** batteries, such as Energizer® Ultimate Lithium™ Batteries, or similar batteries from other reputable manufacturers.

- A small Phillips screwdriver to open the battery compartment
- A wall mount bracket, which can be used, for example, to attach the UTREL30-WiFi to the side of a fridge

- One or two silica sand temperature buffers, which simulate environmental behavior of a vaccine vial

Preparing a UTREL30-WiFi for first use

Before your UTREL30-WiFi can record temperature data and upload readings to LogTag® Online you need to configure it for logging, connect it to the local wireless network and register it in LogTag® Online. This can be completed via the LogTag® Mobile app on-site, or in your office, using a PC connected to the internet. Which method you use depends on your infrastructure, and since each method requires different steps, you may have to do things in a different order.

Regardless of which of the following methods you use, please make sure you have following information before you start this process:

- Your wireless network name (the network SSID)
- Your wireless network password (WiFi password), or your user name and password if you are connecting to a network which requires enterprise authentication[1]
- Your LogTag® Online account name (typically your email address)
- Your LogTag® Online sign-in password
- The name of the team to which you want to register the logger, if you are part of more than one team

The flowchart on the next page can assist in choosing the right method. If in doubt, you can always configure the unit using LogTag® Analyzer in combination with the LogTag® Online Connection Wizard.

Once you have established from the flowchart which steps are required, please read the corresponding paragraphs later in this section. You can click the flowchart's elements to navigate directly to the section you need.

1 Your IT network administrator will advise you of the details you require to connect

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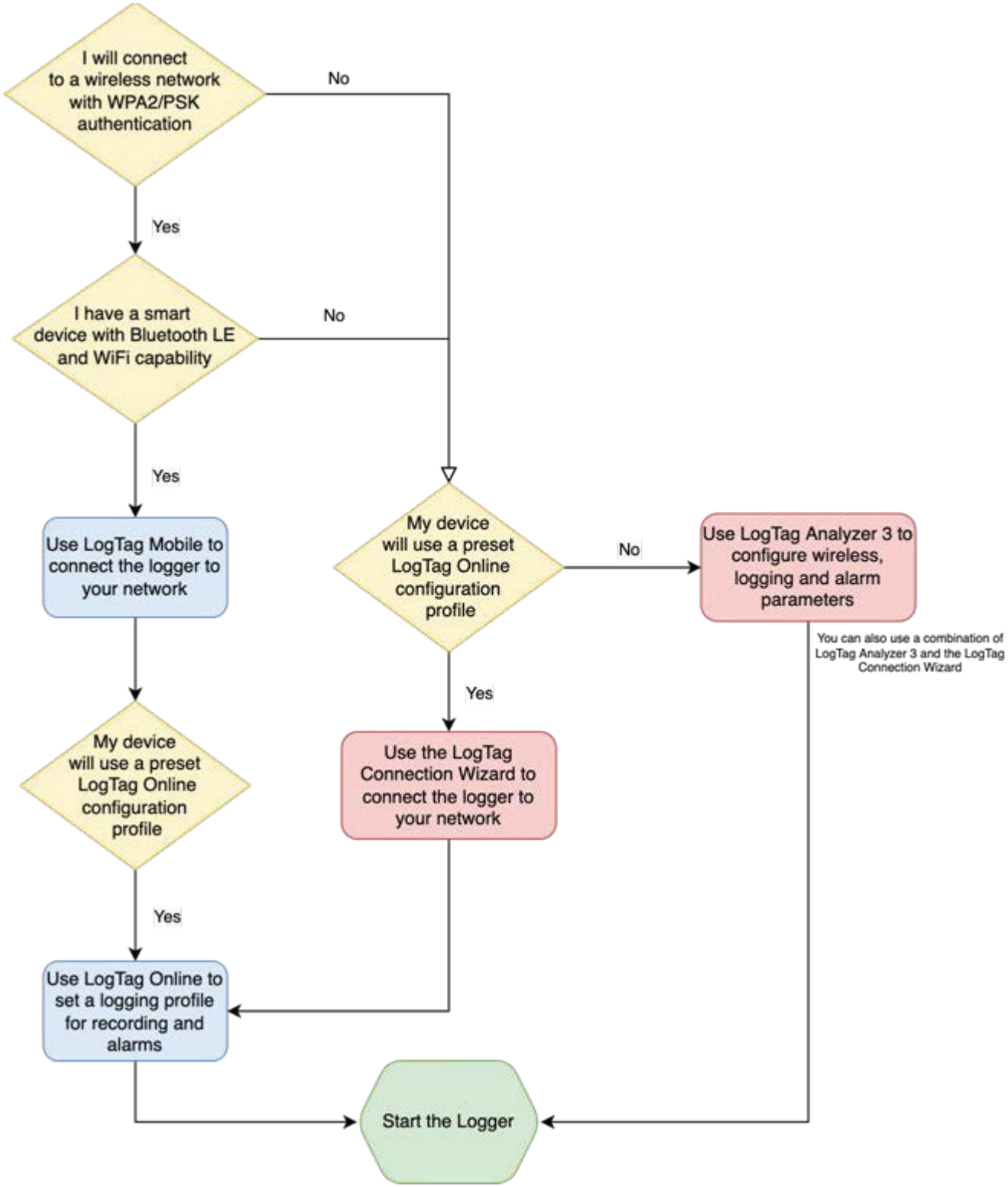


Figure 2: What to use for connecting your UTREL30-WiFi

Using your smartphone or tablet

The LogTag® Mobile app connects to your UTREL30-WiFi via Bluetooth™, and to LogTag® Online via your WiFi network. If you use the LogTag® Mobile app, following steps are required, which you can complete on-site:

1. Install the backup batteries into the unit.
2. Download or update the latest version of the LogTag® Mobile app from your app store (both iOS and Android versions are available).
3. Sign in to LogTag® Online with the LogTag® Mobile app. If you don't have an account, you can generate one directly from within the app (you will need access to your emails).
4. Connect external power if you use the UTREL30-WiFi in a stationery application.
5. Connect the desired number of probes and place the unit, preferably using a wall mount bracket.
6. Enable Bluetooth on the logger and connect to it with the LogTag® Mobile app.
7. Register the unit with LogTag® Online and configure the wireless parameters, using the app.
8. Select a logging profile for the location.
9. Start the logger.

> ⚠ Please note that this method can only be used if your wireless network uses the WPA2/PSK authentication method. If you wish to connect to an open network, or a network with enterprise authentication, you must use the method described next in **Using a PC**.

Using a PC

When you use your PC to connect the UTREL30-WiFi to LogTag® Online, you will likely need to start this in the office, and complete the process on-site. It involves more steps, but gives you more control over the logging and alarm parameters, if you choose **Custom** as the location's configuration profile.

Setup in the Office

1. Install the backup batteries into the unit.
2. Download and install the latest version of LogTag® Analyzer 3. You can do this from the LogTag Software Download page.
3. Configure the unit using LogTag® Analyzer software.
4. Connect the UTREL30-WiFi to your wireless network using the LogTag Online Connection Wizard.

5. Complete the device setup in LogTag® Online, including associating the UTREL30WiFi with a location.

You can find more information about connecting and setting up your network connection in Wireless Connectivity on page 32.

Deploy and Test your Setup On-site

Once you have completed this process, take the logger to the location where it will be installed:

1. Connect external power if you use the UTREL30-WiFi in a stationery application.
2. Connect the desired number of probes and place the unit, preferably using a wall mount bracket.
3. Start the logger.

Inserting the Batteries

The UTREL30-WiFi operates with two AAA batteries:

1. Remove the screw from the rear compartment lid.

2. Remove the lid, exposing the battery compartment.

3. Insert the AAA batteries in the correct orientation, as shown. The polarity is marked inside the battery compartment.

> The battery compartment is a good place to keep the surplus sensor socket covers. You may wish to remove these now for each channel you want to use and add them to the compartment before closing it (see Adding the Probes and the Power Supply).

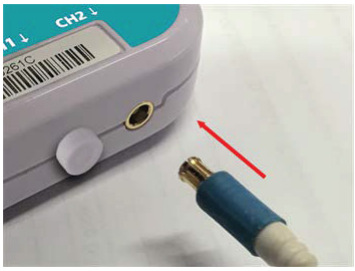
4. Replace the rear cover and the screw.
5. Press any button to turn on the display.

Adding the Probes and the Power Supply

Before the UTREL30-WiFi can record temperature data you will need to connect an external probe. The UTREL30-WiFi accepts any ST10 or Cp10S probe (including an STX50 extension).

Remove the small round socket protector for the channel you wish to use. The battery compartment is a good place to keep any spare protectors.

Plug the probe's connector into the socket located at the bottom of the device, as shown.



For stationary applications we strongly recommend you connect a power supply.

Remove the protective cap and insert the USB connector.

Note that the wider part of the connector is oriented towards the rear of the product.

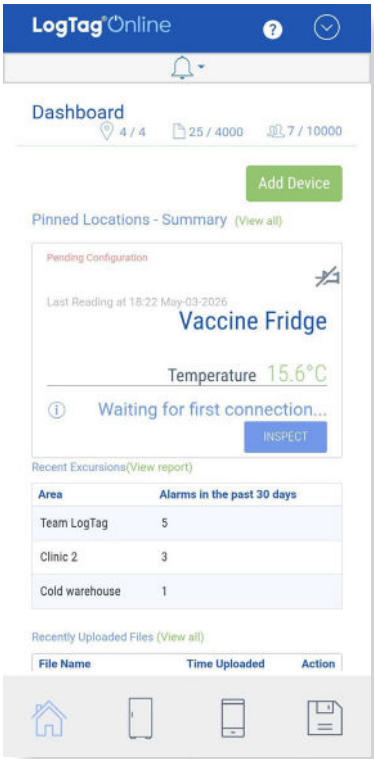
Using the LogTag® Mobile app

UTREL30-WiFi loggers can be connected to your wireless network and set up for logging using LogTag® North America's smart device app **LogTag® Mobile.** This app is available as a free download from both the Apple App Store for iOS devices and the Google Play Store for Android devices.

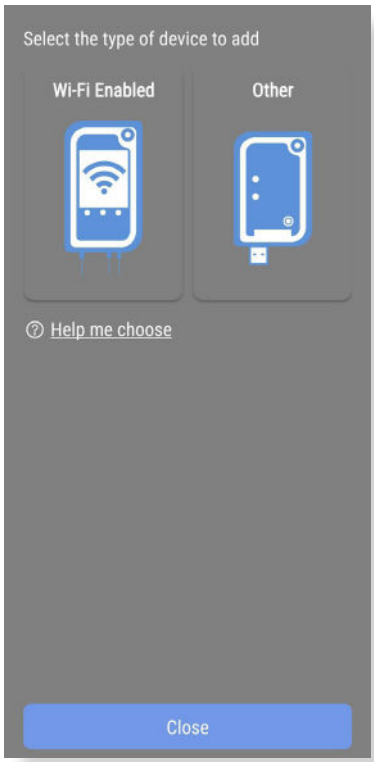
> ⚠ Before starting this process, please enable the Bluetooth function on your smart device, and make sure you are connected to the same wireless network you want to connect the UTREL30-WiFi to.
>
> At the moment, you can only use the app if your wireless network uses the WPA2/PSK authentication method. If you wish to connect to an open network, or a network with enterprise authentication, you must use the LogTag® Online Connection Wizard.

Once you have downloaded the app, start it and sign in to LogTag® Online using the account that you want to use with this UTREL30-WiFi.

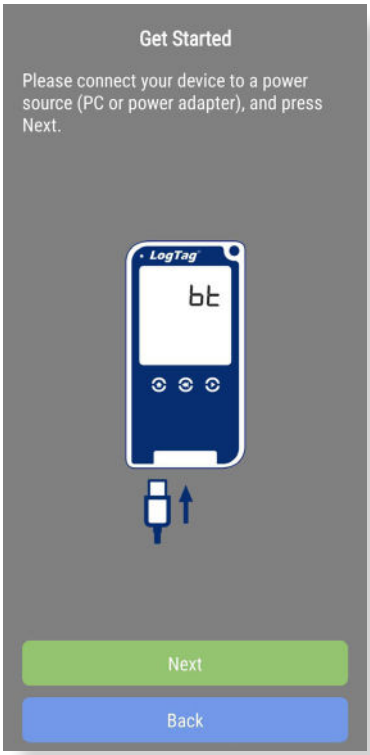
The first screen you see shows the dashboard.
Tap the green Add Device button.



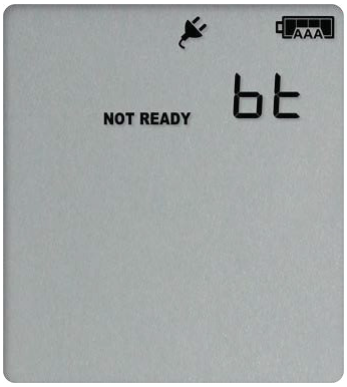
Select Wi-Fi Enabled

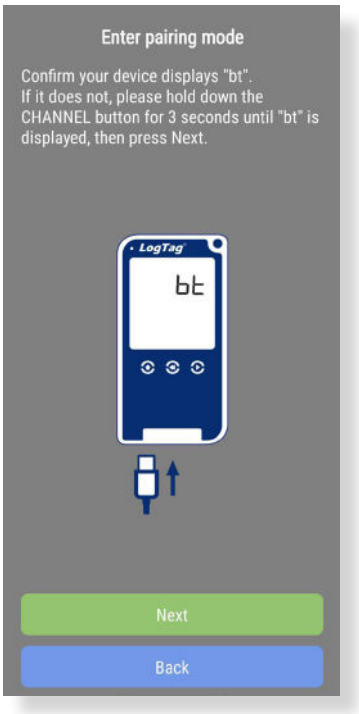


Your screen will prompt you to connect your UTREL30-Wi-Fi to a power source.



At this point, plug the power supply into the UTREL30-WiFi. When you connect a UTREL30-WiFi to power for the first time, the logger's Bluetooth function will be activated automatically, allowing your smart device to connect. No specific pairing action is required. Once you have connected to power, tap Next in the LogTag® Mobile app. Your app will display the Enter pairing mode screen below. The logger should show the following display:



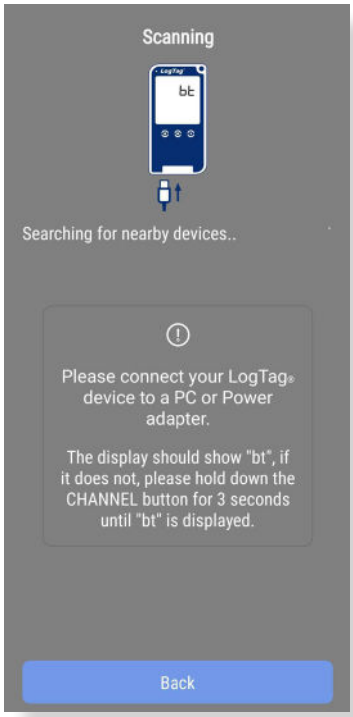


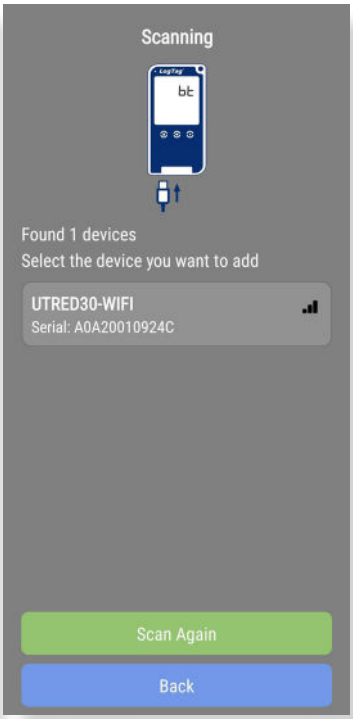
If the display does not show bt, you can activate the Bluetooth function by pressing and holding the **Channel/FUNCTION** button until bt appears. Once you can see bt on your screen, tap Next in your app.

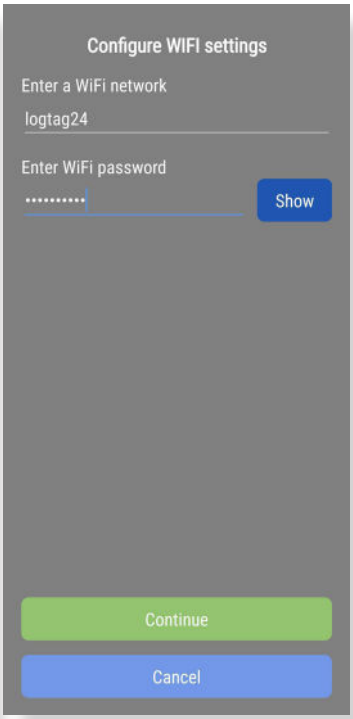
The app now will now scan for nearby loggers using Bluetooth.

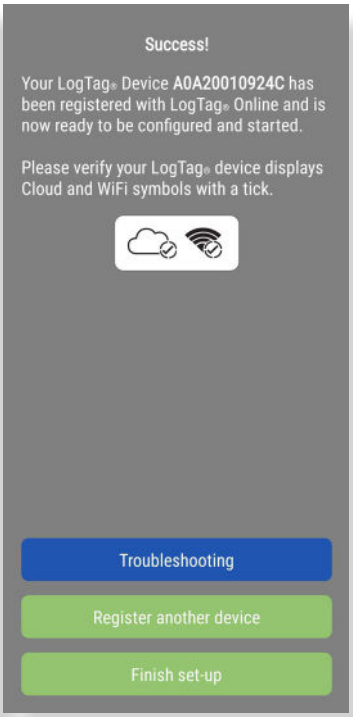
You will see the below list of Wi-Fi enabled loggers near you. If you do not see your logger in this list, check that the logger is still displaying bt on screen. If not, press and hold the **Channel/FUNCTION** button until bt displays again. Then tap Scan Again in the app until your logger is in the list. Tap on your loggers serial number in the list.

Upon connection, you are asked to provide your network details. Enter the Wi-Fi details, then tap Continue. Your logger will be sent the wireless network parameters. Once complete, you will see the success message.









You can repeat this process at any time, however, the logger must not be recording, or you will receive an error message.

If the connection process fails, please click Troubleshooting for possible solutions.

You can now continue with the logger's setup, either using LogTag® Online or LogTag® Analyzer.

Ex-factory, a logger is pre-configured with the following settings:

- Logging interval: 5 minutes
- Channel 1: Upper Alarm at +8 °C with a delay value of 1 hour
- Channel 1: Lower Alarm at +2 °C with a delay value of 1 hour
- Channel 2: Upper Alarm at -12 °C with a delay value of 1 hour
- Channel 2: Lower Alarm at -15 °C with a delay value of 1 hour

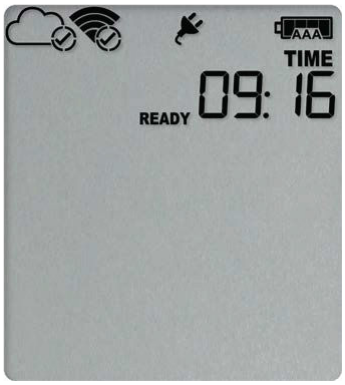
If you start the logger, but do not set a configuration profile in LogTag® Online , it will record and send alarms using these settings.

3 As soon as the app has connected to the logger, the bt symbol turns off.

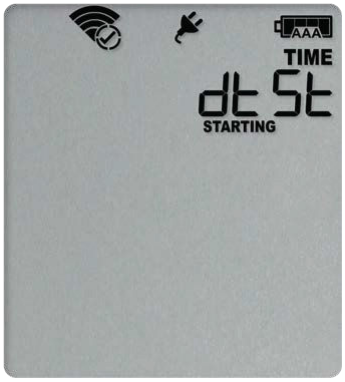
Using LogTag® Analyzer to configure your UTREL30-WiFi

The logger is already configured to start

Your logger may already be configured to start, showing either



if the logger was pre-configured for a push-button start, or

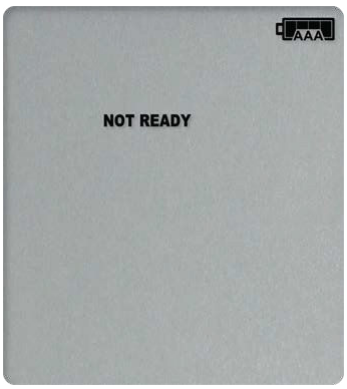


if the logger was pre-configured for a Date/Time start.

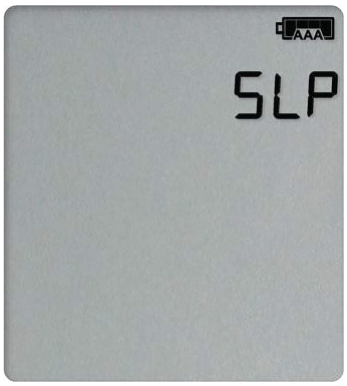
If your logger shows one of these screens you may skip the configuration process.

The logger is unconfigured

An unconfigured UTREL30-WiFi logger is delivered to you hibernated (i.e. in a state of low power consumption), and pressing the **REVIEW/MARK** button shows:



and then



If your logger is unconfigured, read the next few pages, where you will find information how to configure your logger so it

- starts and records temperature values;
- connects to the local WiFi network;
- connects to your LogTag® Online cloud account;
- can print PDF reports with the right information; and
- triggers and reports.

This is done using LogTag® Analyzer software, which can also be used for downloading and analyzing data, if you do not wish to connect the logger to LogTag® Online LogTag® Analyzer includes the LogTag® Online Connection Wizard, which will allow you to set wireless and network settings and register the UTREL30-WiFi against your LogTag® Online account:

- 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.
- From the **LogTag** menu click **Configure**; LogTag® Analyzer will display the configuration settings currently stored in your UTREL30-WiFi for reviewing or editing.

Standard Configuration Settings

The standard configuration is similar to those of other LogTag® logger products and includes settings such as User ID, start method, pre-start recording, logging interval and duration, start delay, and password.

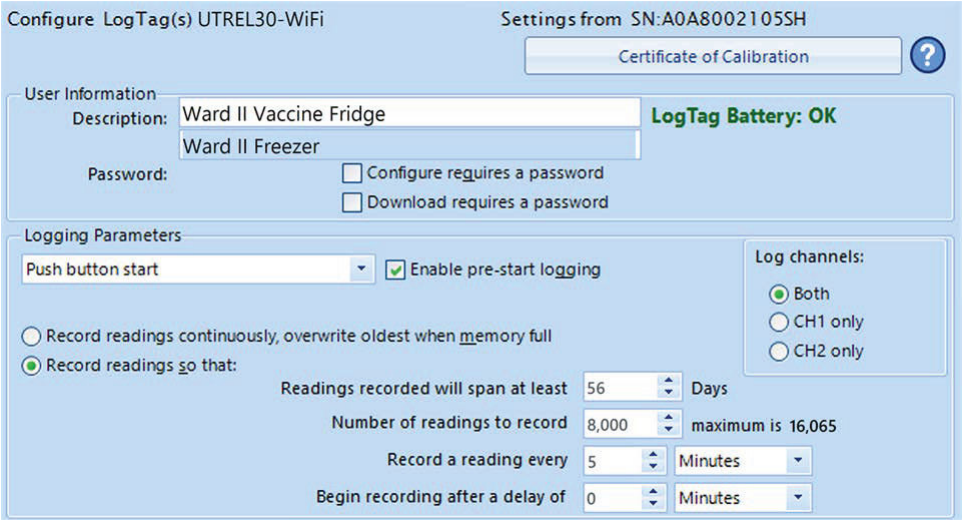


Figure 3: Standard configuration parameters for a UTREL30-WiFi

Adjust the settings as required. 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.

In this section you also decide which channels the UTREL30-WiFi will record. Select CH1 only or CH2 only if you only wish to record temperatures measured by a single probe (plugged into the corresponding socket marked CH1 or CH2) , or select Both for recording both probes.

UTREL30-WiFi Start Options

During configuration with LogTag® Analyzer you can decide when the UTREL30-WiFi starts taking temperature readings:

Push button start

The logger will start taking temperature readings as soon as you have pressed the **START**/CLEAR/STOP button (see Starting the Logger on page 48).

When you choose the push button start option, you can **Enable pre-start logging** (or disable it) and also **Begin recording after a delay**.

Pre-start readings

If you enable pre-start readings, the UTREL30-WiFi starts recording as soon as it is and will continue to do so until you start the unit via the button. No alarms are processed while pre-start readings are being taken, pre-start readings will not appear in the PDF file after the logger was started, and no PDF file will be generated if only pre-start readings are present in the logger. Pre-start readings are also not uploaded to LogTag® Online. 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.

Start delay

If you configure the UTREL30-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. The value for the timer is set during configuration. If pre-start readings are enabled, these will continue to be recorded during the delay period.

Date/Time start

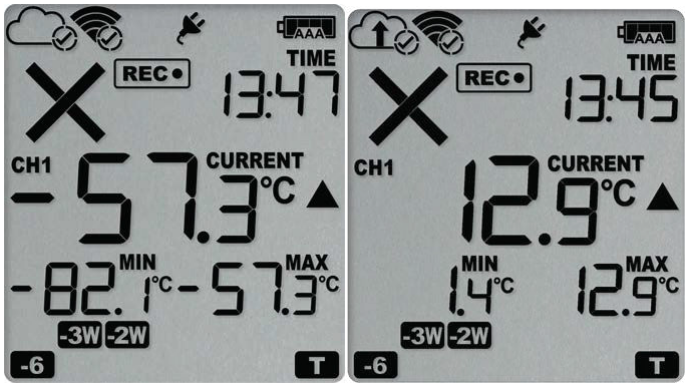
The logger will start taking temperature readings at the date and time you enter during configuration (local time). You cannot combine a date/time start with pre-start readings or the start delay function.

Automatic start via LogTag® Online

The logger will start as soon as it has received configuration settings via the location's Logger configuration profile. Depending on the profile settings, it may start taking temperature readings instantly, or after a delay period.

Alarm Configuration Options

The UTREL30-WiFi can display an alarm if one or more of the configured alarm trigger conditions have been met. This is indicated on the display by showing the Alarm Indicator × and a Day Alarm Marker is shown for an alarm triggered today, other markers are shown for alarms triggered on previous days, see Day Alarm Matrix Display while recording for details on which marker is displayed for which day. Alarms are registered separately for each channel, and will only be shown on the corresponding channel's screen. Additionally, the red LED will blink every 4 seconds. The LED blinks until active Alarms on both channels are cleared.



Each alarm trigger condition consists of a threshold temperature value, an activation type (which can be instant, consecutive or accumulative[4]) 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 **upperalarm**

If an alarm trigger condition requires readings to go below a lower threshold it is called a **loweralarm**

All alarm trigger conditions are entered in the Alarm Settings tab during configuration of the logger with LogTag® Analyzer. Alarms are configured separately for each channel. If you have chosen to log only one of the channels, the controls for the other channel are not available.

The screen shows an example where:

- the upper primary alarm for channel 1 is triggered when the temperature is -70 °C or above for an accumulative time of 10 hours.
- the lower primary alarm for channel 1 is triggered when the temperature is -80 °C or below continuously for 1 hour.

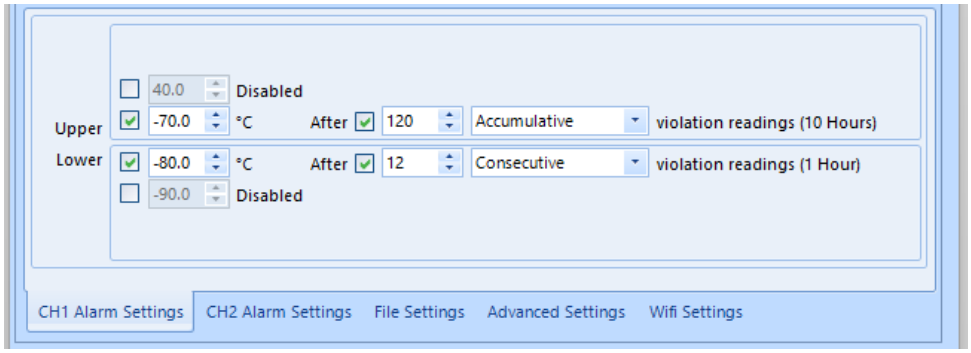


Figure 4: Sample Alarm Configuration Settings for channel 1 of a UTREL30-WiFi

4
- 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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- The alarm parameters for the second channel can be entered on the next tab.

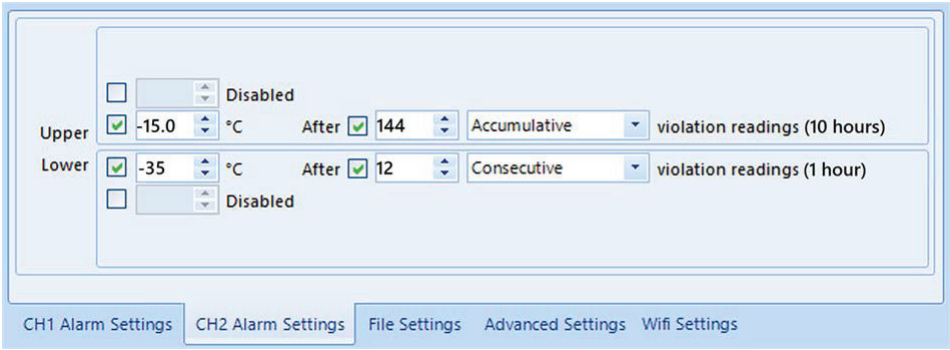


Figure 5: Sample Alarm Configuration Settings for channel 2

Once an alarm has triggered, the alarm indicator (×) remains shown until the alarm is cleared (see Clearing an Alarm on page 55) or the unit is reconfigured. The day alarm marker 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.

> **!** A note on alarm re-triggering: As soon as an alarm is triggered, the corresponding delay time (but not any others) resets to zero and alarm processing starts again. The alarm processing for all other alarm delays is not affected. Therefore, accumulative or consecutive alarms will re-trigger, if the alarm conditions are met again, and the Alarm Indicator (×) and the Day Alarm Marker will be shown, even if any previous alarm was cleared. **Clearing an Alarm does not reset any of the delay values.**

File Settings

Click the **File Settings** tab, select which files are generated when the UTREL30-WiFi is plugged into a computer's USB port, and what information these files contain. Select as many file formats as you wish to generate.

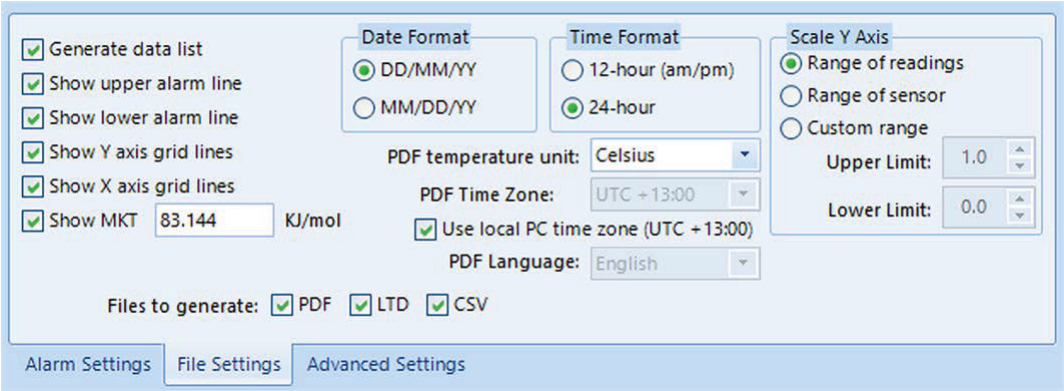


Figure 6: UTREL30-WiFi File settings screen in LogTag® Analyzer 3

These parameters influence the appearance of all files:

- Temperature units

> ! The temperature unit for the PDF file is also used for all temperature values shown on the display.

  You cannot choose different temperature units for individual channels.

- Date and time format
- Time zone and MKT values

Following specifically influences the appearance of the PDF file:

- Scaling parameters for the chart
- Showing or hiding grid lines
- Showing or hiding alarm threshold lines
- Generating the data list

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.

> These settings only apply to the files generated when plugging the UTREL30WiFi directly into a PC. Settings for the appearance of online reports are made in LogTag® Online.

The PDF file can not only be viewed in a PDF viewer, but can also be opened with LogTag® Analyzer directly.

Advanced Configuration Settings

Select **Advanced Settings** for additional configuration settings. These settings decide how some of the elements are displayed on the unit's own display and set certain options specific to the UTREL30-WiFi.

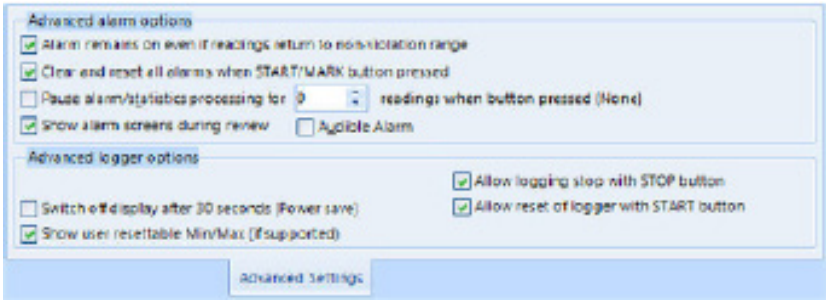


Figure 7: UTREL30-WiFi advanced configuration screen in LogTag® Analyzer3

These parameters influence what appears on the display:

- Pausing alarm/statistics processing (see Paused Readings on page 57)
- Switching off the display after 30 seconds (Power save, see Power Save on page 57)
- Allowing a user to reset the trip's minimum and maximum values on the display during recording (see Resetting the Min/Max Values on page 59)

Following parameters influence specific behavior of the UTREL30-WiFi:

- Clearing and resetting alarms when the **START**/CLEAR/STOP button is pressed

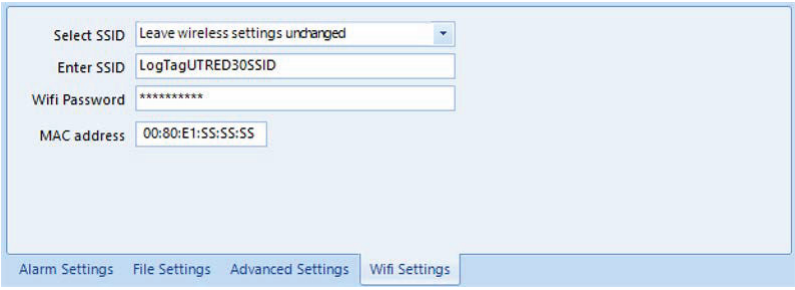
  Ex-factory, this function is not enabled. We strongly discourage the use of this function on this indicator product. Unlike other loggers with statistics memory, clearing an alarm will also clear any recorded alarm trigger times for all previously triggered alarms!

- 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
- Enabling the buzzer for the audible alarm

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.

Wireless and Network Connection Settings

The UTREL30-WiFi's wireless connection parameters are set up on the WiFi Settings tab.

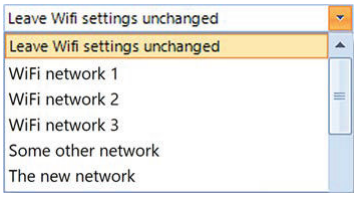


The wireless network has already been set up on this device

If the device already contains the correct parameters for your wireless network, either from a previous configuration, or because you have used the LogTag® Mobile app, please select **Leave wireless settings unchanged**. This allows you to change only the logging parameters and retain the wireless and network parameters. This is the default option, and is also applied if you do not click the WiFi settings tab during the configuration process.

The unit needs to be connected to a new wireless network

If you need to change the SSID, or the unit is new, select the desired SSID from the list.



You can also type a new SSID directly if the wireless network for which the unit is set up is not available where you complete the configuration.

Once you have selected the SSID, type the network password (often called the "WiFi password").

You may need to advise your network administrator of the MAC address shown in this screen, so it is allowed to connect to the network.

Factory-new units do not contain any settings. In this case, please use the LogTag® Online Connection Wizard to connect the device to your wireless network and to LogTag® Online.

Finalizing the configuration

Click **Configure** to upload the configuration data to the UTREL30-WiFi.

When the configuration is complete, unplug the UTREL30-WiFi from the USB socket and replace the protective seal.

If you wish to configure more UTREL30-WiFi units with the same configuration, insert the next loggers into USB sockets, wait until they are ready for configuration and click **Repeat Configure**.

You can upload the configuration to a UTREL30-WiFi logger as often as required.

LogTag® Online Connection Wizard

Instead of using LogTag® Analyzer, you can also connect a UTREL30-WiFi to LogTag® Online using the **LogTag® Online Connection Wizard**. You can access the wizard by clicking **Connection Wizard** from the **LogTag® Online** menu in LogTag® Analyzer[5]. It is also available as a stand-alone program.

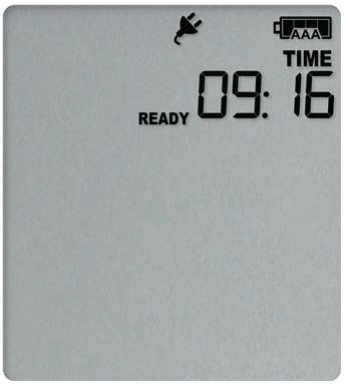
The LogTag® Online Connection Wizard is a separate program that

- enables you to create an account with LogTag® Online (or sign in if you already have an account); and
- registers to your team;

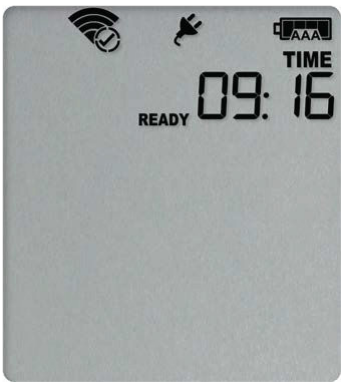
You can find detailed information about the LogTag® Online Connection Wizard in its online help at http://lt.help/c843e.

The LogTag® Online Connection Wizard starts after the logger has been configured for other parameters such as logging and alarms. When the wizard runs, the wireless and network parameters you enter are used to check that the UTREL30-WiFi can establish a connection with your wireless network and the LogTag® Online cloud server. The UTREL30-WiFi's display will update during these connection checks.

Initially, the display shows the logger is ready to be started.



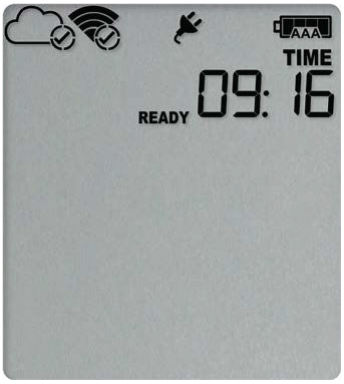
When the Wizard displays **Testing Connection, please wait**, first, the wireless connection is tested. If the connection is successful, the screen on the right shows.



If the wireless connection does not succeed, the "No wireless connection" symbol ( ) is shown instead, and the test aborts.

Please refer to the section about Troubleshooting (on page 37) for reasons why the wireless connection can fail.

5 You can also download the LogTag® Online Connection Wizard as a separate installer from the LogTag North America website.



After successful completion of the wireless network test, the Wizard establishes a connection between the UTREL30-WiFi and the LogTag® Online cloud server. When completed successfully, the screen on the right shows.

Please refer to the section about Troubleshooting (on page 37) for reasons why the cloud server connection can fail.

The UTREL30-WiFi is now ready to be deployed.

The logger will be configured in LogTag®Online

LogTag® Online can transfer configuration settings containing recording and alarm parameters to the logger, and automatically start recording temperature data once the transfer has completed. To do this, following steps are required:

1. Configure the UTREL30-WiFi's wireless network settings using the LogTag® Online Connection Wizard.
2. Register the device in LogTag® Online.
3. Attach the UTREL30-WiFi to a location. During the attachment process, select one of the pre-defined Logger Configuration Profiles. Each profile contains
   - the log interval;
   - alarm settings for all alarms; and
   - optionally, a start delay.

   Once the settings have been applied, you can view them directly in LogTag® Online for each device. Please refer to the LogTag® Online User Guide for more information.

! Please note: This method of configuration sets only a minimal number of pre-defined parameters to enable logging and transferring real-time data. If you wish to control the appearance of the PDF file, set advanced options or specify custom logging parameters please configure the unit using LogTag® Analyzer.

⚠ If you are attaching both channels of a dual-channel logger, they must be attached to separate locations. Some parameters such as log interval or start delay apply to both locations. The configuration profile that was set last determines these parameters.

Wireless Connectivity

The UTREL30-WiFi is designed to upload real-time data to the LogTag® Online cloud application. To do this, the logger must be connected to a wireless network (WLAN) and be able to connect to LogTag's cloud service on the internet.

In the previous sections you learned that this requires:

- Signing in to (and if necessary, creating) a LogTag® Online account
  You can create an account by navigating to https://logtagonline.com and clicking **Create an Account**. You can also use the LogTag® Online Connection Wizard to navigate to this page.
- Configuring the logger for connecting to your network and to LogTag® Online

  This is done with the LogTag® Online Connection Wizard during the logger's configuration, or the LogTag® Mobile app.

- Registering the logger to your team's account.
  The LogTag® Online Connection Wizard will automatically register the UTR-EL30WiFi for you if you provide your sign in details when you run the Wizard. You can also register the device by signing in to your LogTag® Online account at https://logtagonline.com and completing the steps for device registration, or by using the LogTag® Mobile app.
- Associating the logger with a location ("attaching the logger")
  The logger's uploaded real-time readings will only appear in LogTag® Online, if you have allocated a place where the data can be stored. In LogTag® Online this is called a **location**, and associating the logger with this location is called **attaching the logger**.

> **!** Unlike other loggers uploaded via one of the wireless interfaces, a UTREL30-WiFi does not generate files on LogTag® Drive.

You can find more information about locations, device registration and attaching loggers in the LogTag® Online help.

The following pages will give you some more details about these steps.

Transferring data to LogTag® Online

Temperature readings

Measurements recorded by the UTREL30-WiFi are stored in internal memory, ready to be uploaded to the LogTag® Online cloud server. The upload to the server is taking place at pre-determined times that cannot be changed:

- If the logger is permanently powered via USB power supply
  The upload to the server takes place every log interval, or multiple thereof, but no sooner than every 5 minutes. For example, a logger that records every 2 minutes will upload readings to the cloud server every 6 minutes, a logger that takes a reading every 15 minutes will upload readings to the cloud server every 15 minutes.

> **!** If a logger is scheduled to take a temperature reading and also upload readings to the server at the same time, the temperature reading will always be taken first before the upload starts.

- If the logger is powered via the AAA batteries
  The upload to the server takes place every log interval, or multiple thereof, but no sooner than every 60 minutes. For example, a logger that records every 15 minutes will upload readings to the cloud server every 60 minutes, a logger that records every 45 minutes will upload readings every 1½ hours.

Alarms and other Events

As soon as a UTREL30-WiFi triggers an alarm, or a low battery is detected, this is reported to the cloud server immediately, regardless of the upload interval for temperatures.

Wireless and Cloud Symbols

On the display, wireless connection and link to the LogTag® Online cloud server are shown using the wireless and cloud connectivity symbols.

This symbol shows the status of the last connection to the wireless network (WLAN). If the circle shows a tick, the UTREL30-WiFi 's last connection to the wireless network was successful.

When USB power is supplied, the UTREL30-WiFi remains connected to the WLAN.

This symbol shows the status of the last connection to the LogTag® Online cloud server. If the circle shows a tick, the UTREL30-WiFi 's last connection to LogTag® Online was successful.

This symbol shows while the UTREL30-WiFi is transmitting data to the LogTag® Online cloud server.

Typically you will see wireless and cloud symbols together, unless there is an issue. Please see Troubleshooting on page 37 for further details about the various symbol combinations that can be displayed.

Testing your wireless and network connection

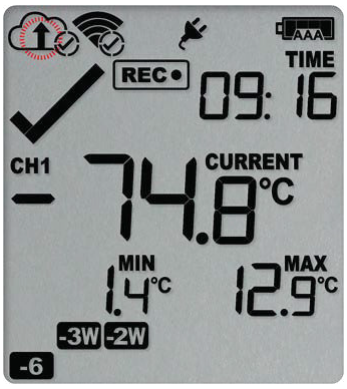
You can verify that uploading data to the LogTag® Online cloud server is working by initiating a **Connection Test** directly from the UTREL30-WiFi.

During the connection test the logger will

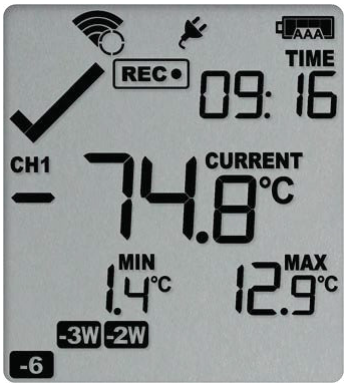
- connect to your wireless network using the network name and password you entered during the setup with the LogTag® Online Connection Wizard
- connect to the LogTag® Online cloud server
- exchange a pre-defined set of messages with the cloud server that verify the device's identity
- request any information from the server such as the current time
- upload any new temperature and event data that have been recorded since the last connection to the cloud server
- close the connection

This will give you immediate feedback if the logger's wireless and network settings were configured correctly.

To initiate the connection test, press and hold the **Channel/FUNCTION** and **REVIEW/MARK** buttons simultaneously for approx. 6 seconds. During this time the Upload arrow symbol (⬆) on the display blinks.
Release the buttons when the symbol stops blinking and turns on permanently.

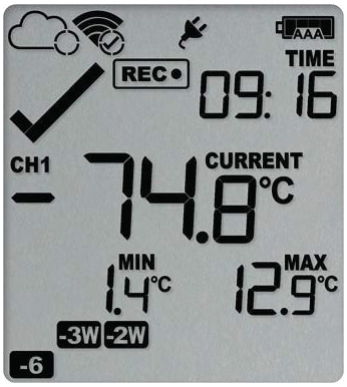


The UTREL30-WiFi will now attempt to access the wireless network (the WLAN symbol shows an empty circle).
This process is typically very short, so you may not see this screen.

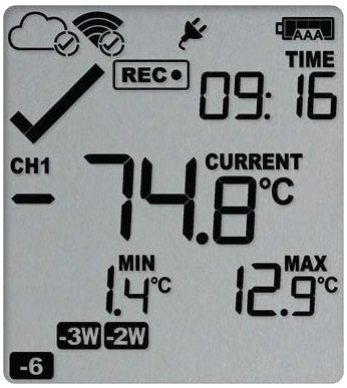


Once the UTREL30-WiFi has successfully connected to the wireless network (the WLAN symbol shows a tick) it will attempt to connect to the LogTag® Online cloud server (Cloud symbol shows an empty circle).

Depending on network traffic this can take a few seconds.

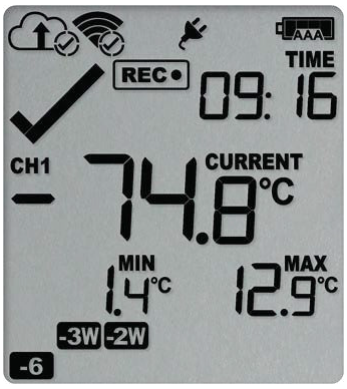


The UTREL30-WiFi has successfully established a connection to the LogTag® Online cloud server (Cloud symbol shows a tick).



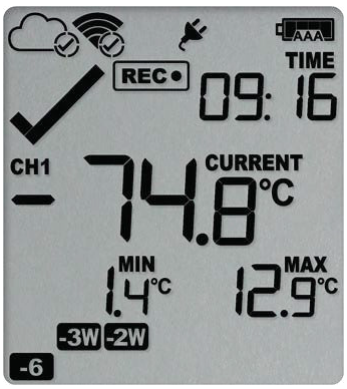
The UTREL30-WiFi is now exchanging data with LogTag® Online, indicated by an arrow inside the cloud symbol (⬆).

The arrow may turn on and off repeatedly during the data exchange.



The logger has successfully completed its initial connection process.

The Cloud and WLAN symbols remain to indicate that the last connection was successful.



The **Devices** page in LogTag® Online will be updated with the last connection time.

If the wireless or cloud communication fail, WLAN or Cloud symbols may show a cross. Please refer to the section about Troubleshooting (on the next page) for further details.

This connection test is performed **automatically** every time the UTREL30-WiFi takes the first reading of a new trip.

You can initiate this test **manually** at any other time, provided valid wireless and network connection settings are stored in the logger.

Troubleshooting

To successfully upload data to LogTag® Online, your UTREL30-WiFi needs to be connected to your wireless network and be able to access the LogTag® Online cloud server. It also needs to be registered to your team's account and must be attached to a location.

If the connection has succeeded and data is being uploaded, the wireless and cloud indicators on the display show.

If you cannot see any data in that location from your device, although you have configured it with the LogTag® Online Connection Wizard, you can use the wireless and network indicators to help narrow down which part of the upload process fails.

The UTREL30-WiFi is trying to access the wireless network, but has not yet successfully connected. If you see this icon on the display for more than 10 seconds, the UTREL30-WiFi is trying repeatedly to connect to the network.
If the connection eventually succeeds, this could indicate a weak wireless signal. If possible, move the UTREL30Wi-Fi closer to the access point.

The UTREL30-WiFi has attempted to connect to the wireless network, but was unsuccessful. It will take up to 60 seconds for this icon to show.

This can have a number of different reasons, which include the following:

- The configured network is temporarily unavailable or out of range

  Try to scan for available networks using a different device, such as a laptop or cellphone. This will verify if the network is currently transmitting.

- The network password has not been entered correctly
  If the network is transmitting, try to access the wireless network with a different device, such as a laptop or cellphone, using the password you entered.
  If required, re-run the LogTag® Online Connection Wizard, select the option **WiFiOnlySetup** and re-enter the correct name and password of the wireless network you wish to connect to.

- The network requires confirming a logon screen on a web browser

At this stage, the UTREL30-WiFi is unable to connect to a network that requires completing a logon process, such as is present on many guest networks. Your network administrator will need to add an exception for your device.

- The network has an unsupported authentication method

At present, the UTREL30-WiFi can only connect to wireless networks with Open or WPA/WPA2 authentication, and to networks with EAP-TTLS and EAP-PEAP enterprise authentication methods. Contact your distributor if you need to connect the UTREL30-WiFi to a network that does not support either of these access methods.

If you continue to get this error, please discuss this further with your network administrator.

The UTREL30-WiFi has successfully connected to the wireless network and is in the process of connecting to the LogTag® Online cloud server.

If you see this icon on the display for more than 10 seconds, the UTREL30-WiFi has to try repeatedly to connect to the server.

If the connection eventually succeeds, this could indicate a weak wireless signal, or general network issues related to the new device. If possible, move the logger closer to the access point and discuss this further with your network administrator.

The UTREL30-WiFi has successfully connected to the wireless network, but was unable to establish a connection with the cloud server.

This can have a number of different reasons, which include the following:

- Destination port 18888 is closed

Please ask your network administrator to open port 18888 in the network's firewall.

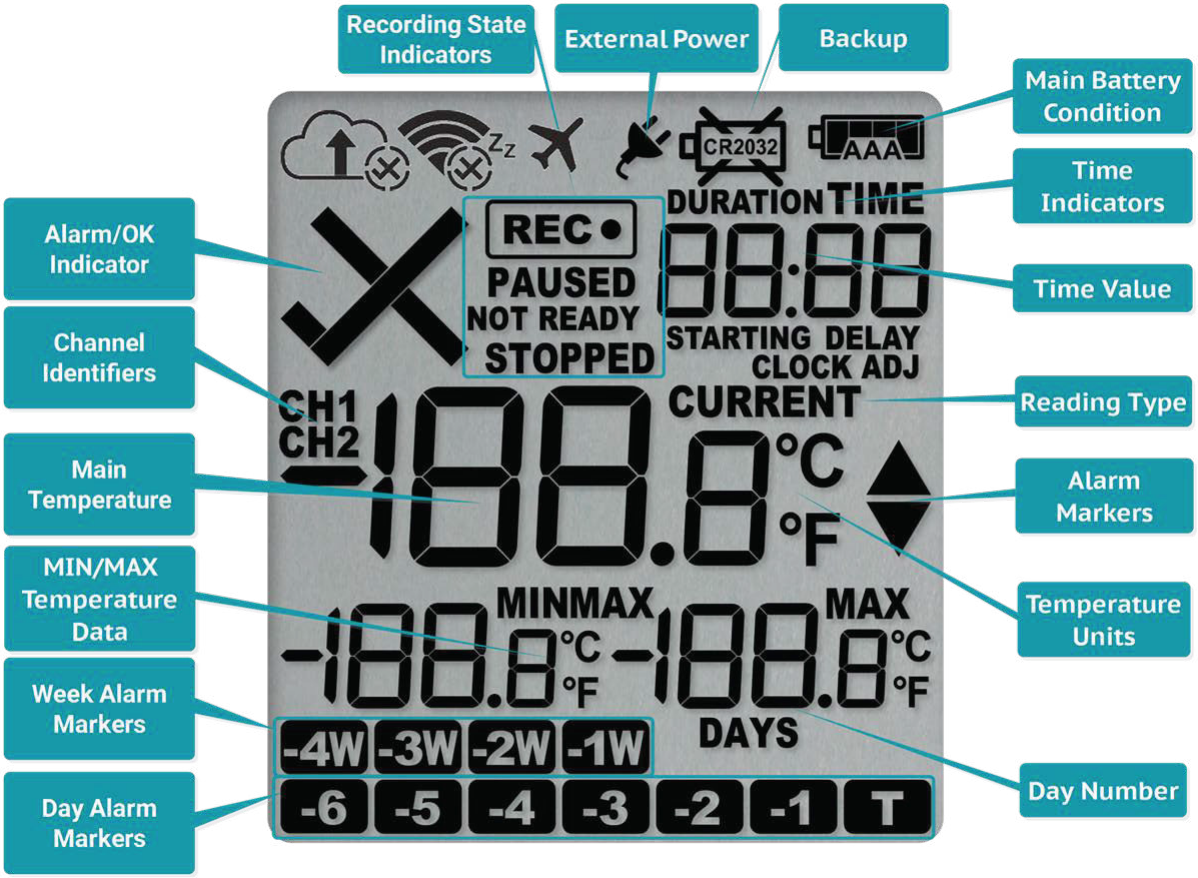
- No DHCP server found on the network You may have set up the UTREL30-WiFi to use DHCP, but your network does not offer DHCP connections. Please discuss this with your network administrator, and run the LogTag® Online Connection Wizard again, selecting AdvancedSetup.
- No IP address or DNS server configured Please re-run the LogTag® Online Connection Wizard, select AdvancedSetup and enter the correct DNS settings. If available, use DHCP to receive the DNS settings.
- The LogTag® Online cloud server is offline This is possible, but very rare.

If both wireless and cloud connection show success, yet you still do not receive any data into your LogTag® Online account, please check the following:

- Your device may be registered to a different team Please re-run the LogTag® Online Connection Wizard and register the device to your team
- Your device has no data to upload

Display Overview

Following image shows the display with all segments turned on.



Day Alarm Markers *

One rows of 7 markers, named **Today** (T) to **Day-6** (-6). A marker is switched on if an alarm event occurred on that day.

Week Alarm Markers *

One row of 4 markers, named last week (-1W) to 4 weeks ago (-4W). A marker is switched on if alarm event occurred during that week.

MIN/MAX Temperature Data *

These two temperatures represent the minimum and maximum since the recording started, or since the values were last manually cleared.

Main Temperature Value *

This shows the most recently recorded temperature while the UTREL30-WiFi is recording. Once the logger has stopped, nothing will be displayed.

* Marked symbols are displayed individually per channel

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CH1/CH2 Channel Identifiers *

CH1 is shown when the data on the screen is representing data from the probe plugged into the socket marked CH1. Similarly, **CH2** is shown for channel 2 data.

Backup Battery Low

A battery test is performed periodically. The battery low symbol will appear if the UTREL-30WiFi's backup battery is low and requires changing. Please discuss this with your distributor, as the battery needs to be changed by a qualified technician.

Main Battery Condition

A battery test is performed periodically. Depending on the condition of the battery, all, some or none of the 4 bars will show. See Powering the UTREL30-WiFi on page 43 for details.

ALARM/OK indicator *

The ✕ symbol is shown as soon as the UTREL30-WiFi has registered an alarm event. While there are no alarms, or if a previous alarm has been cleared, the ✓ symbol is shown.

Wireless and Cloud Symbols

These symbols show the current status of your WiFi connection and your cloud connectivity. Learn more about these in the section about Wireless and Cloud Symbols on page 33.

Recording indicators

The recording indicators show what the UTREL30-WiFi is currently recording:

- If **READY** is shown, the UTREL30-WiFi is ready to be started with the **START/CLEAR/STOP** button.
- If **REC●** is shown, the UTREL30-WiFi is recording temperature at the sample interval defined.
- If the word **STOPPED** is shown, the UTREL30-WiFi has finished recording temperature data.

Time Value and Time Indicators

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

- The current time
- The time remaining until the logger starts recording (for a delayed start)
- A duration, for example of an alarm

The time indicators identify which of those is displayed as follows:

- If **TIME** is shown, the time value represents the current time in hours and minutes (24- hour format).
- If **DELAY** is shown, the time value represents a start delay, or the time remaining until a date/time start will occur.
- If **DURATION** is shown, the time value represents the duration, for example the time above the upper alarm limit.

The word **boot** appears in place of the clock if new firmware is being uploaded to the UTREL30WiFi.

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.

Above/Below Threshold Arrows
Temperature Units

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

Powering the UTREL30-WiFi

The UTREL30-WiFi is designed to be supplied via its USB socket from a commercially available 5V USB power supply (5W). When supplied externally, the power symbol shows on the display:

> **!** Some low-quality USB power supplies are unable to deliver sufficiently stable power to the UTREL30-WiFi. Please use a power supply from a reputable source that carries the UL or CE marking.
>
> If the logger detects an unstable power source, the power symbol ( ) will flash and the buzzer will sound.
> In this case, the logger will not be powered by the external supply, but remain powered by the AAA batteries instead. Please remove the supply and replace it with one of better quality.

When you remove the external USB power the display briefly turns off.

The UTREL30-WiFi also uses two internal AAA batteries as a backup should external power be unavailable, for example in the event of a power cut. If used as a backup, the batteries have a life span of approximately 6 to 12 months, depending on the time the unit operates without external USB power.

Running the UTREL30-WiFi solely without an external supply is possible, but not recommended, as it will deplete the AAA batteries in around 2 to 3 months and also shorten the life of the secondary backup battery.

The rate at which battery power is used largely depends on the signal strength of the wireless network signal, with a weaker signal draining the battery faster. A short log interval, viewing data on the display frequently and sounding the alarm often will also reduce battery life.

> **!** The batteries inside the unit will not be charged when external power is supplied.

A 4-bar battery indicator shows an approximate remaining battery capacity. If the batteries are full, this symbol will be shown:

When the batteries are empty, this symbol will be shown, and the batteries require replacement.

Please always replace both batteries with fresh ones at the same time. Replacing only one of the batteries with a partially charged battery will drain the secondary backup battery.

! You can also use rechargeable AAA cells in this product. Depending on the capacity, you may get slightly shorter life, and your remaining percentage reports may not be accurate.

Low power operation

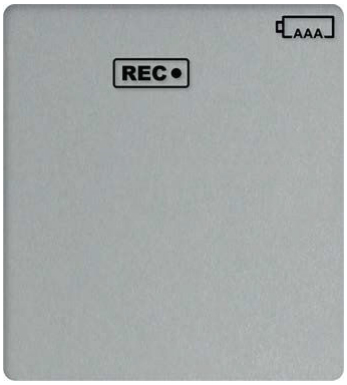
The UTREL30-WiFi enters low power operation when no external power is supplied, and the AAA batteries are empty.

In low power mode:

- all WiFi and cloud connectivity is suspended;
- real time readings will no longer be transmitted to LogTag® Online;
- the audible alarm will sound only once, then be silent;
- the display turns off after 30 seconds of inactivity, regardless of the setting made in LogTag® Analyzer;
- 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, and a scheduled date/time start will proceed; and
- min/max values cannot be cleared.

After pressing any button, following is shown on the display:

- The Recording state indicators, which show if the unit is recording, stopped, ready or configured for a delayed start
- The Backup Battery Empty symbol



The internal secondary backup battery will power the logger's essential functions:

- The internal clock still runs.
- Temperature values are being recorded at the configured intervals.
- The red alert indicator will blink if an alarm is triggered.
- A scheduled recording will still start.

At this time the batteries must be replaced, or external power provided, to activate the suspended functions. If you continue to operate the unit with empty or near empty batteries, you will deplete the internal secondary backup battery.

> **!** After battery replacement the display may be blank. To activate it, simply press one of the buttons.

The internal secondary backup battery (CR2032 $LiMnO_2$ coin cell) should be replaced immediately when the low battery symbol -as shown- appears. This can be done by a qualified technician. Failing to replace the battery can result in loss of configuration information and loss of recorded data, even when the logger is connected to a power supply.

Audible Alarm

The UTREL30-WiFi is fitted with a buzzer. You can choose to activate the buzzer when an alarm event has been triggered to provide extra feedback. This is enabled or disabled in the Advanced Settings when configuring the logger with LogTag® Analyzer.

! Please note, that continual activation of the audible alarm will reduce the working life of the battery, if no external power is applied. When an alarm event is triggered, the alarm should be cleared as soon as possible.

The alarm will sound once every four seconds for the first 24 hours, then sound less frequently to preserve battery life[7] until the alarm is cleared, the unit stops or is reconfigured.

! Note: The interval will increase, even if the alarm is re-triggered!
Please see more information about re-triggering alarms in

The buzzer will temporarily turn off when you are reviewing data.

7 The interval at which the alarm sounds will increase to 8 seconds when the clock passes midnight for a second time (i.e. the alarm will sound every 4 seconds between 24 and 48 hours, depending on when during the day the alarm was first triggered). When the clock passes midnight a third time, the interval changes to 12 seconds until the alarm is cleared.

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), which triggers the statistical data to be finalized for the day, and a new day to be started when the next reading is taken.

Each time the logger is configured with LogTag® Analyzer the display clock value is set to the PC's current local time (or timezone).

> **!** The UTREL30-WiFi's real-time clock regularly synchronizes with the LogTag® Online server when the device connects to the network. As a result, the display clock will be automatically updated when daylight saving begins and ends. In addition, the logger's internal real time clock value is updated when the recorder is configured with LogTag® Analyzer.

LogTag® Analyzer can display the logged readings in a number of different time zones, regardless of where it was configured. Please note, however, that the PDF's time zone has to be set at configuration and cannot be changed after the logger has been downloaded.

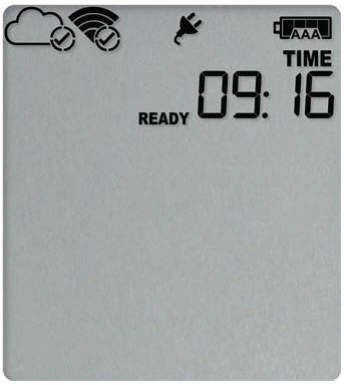
Starting the Logger

> **!** It is highly recommended you start a UTREL30-WiFi logger only after you have placed it in the position it will be used in. This allows you to verify wireless and network connectivity on site quickly after the start.

Push button start

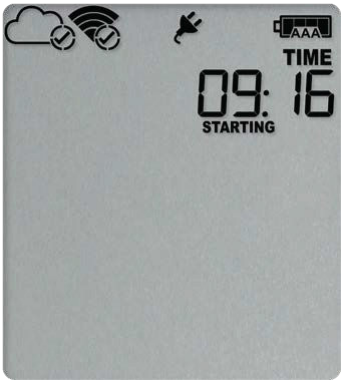
After configuration for a push button start the current time and **READY** are shown, together with the Battery Status symbol.

The power symbol is shown when the unit is connected to a USB power supply.

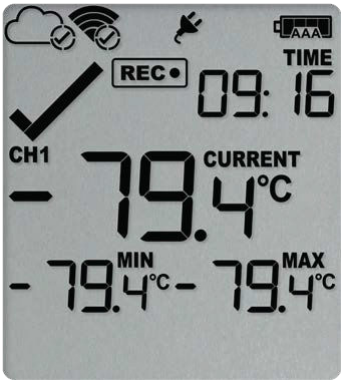


Press the **START**/CLEAR/STOP button. **STARTING** is briefly shown in addition to **READY.**

Then **READY** disappears.



Once **READY** disappears, release the button within two seconds. **STARTING** will now disappear, and the REC symbol will be shown. The UTREL30-WiFi now records temperature data.



The logger will **not** start if

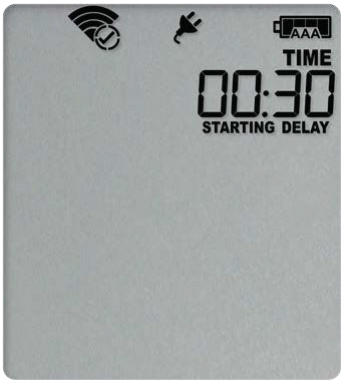
- you release the button before **READY** disappears;
- you keep holding the button for more than 2 seconds after **READY** disappears; or
- the AAA backup batteries are critically low and the logger is not connected to power.

The UTREL30-WiFi now automatically performs a Connection Test (see Testing your wireless and network connection on page 34).

Push Button Start with Start Delay

The delay time is shown in hours and minutes. The time counts down and the UTREL30-WiFi starts recording when it reaches 0:00.

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

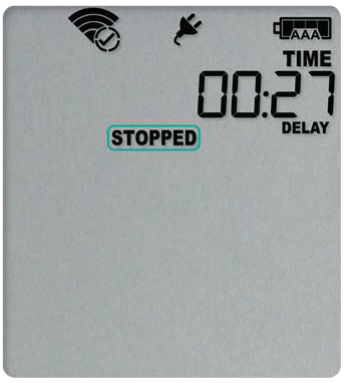


As with a regular push button start without delay, the UTREL30-WiFi will perform a Connection Test as soon as the recording has started. To check the connection before the delay value has elapsed, you can initiate the connection test yourself. Please refer to Testing your wireless and network connection (on page 34).

The timer can be canceled and the logger reset to **READY**.

While **STARTING** and **DELAY** are shown, press and hold the **START**/CLEAR/STOP button. **STOPPED** will now show. Release the button when **STARTING** disappears.

STOPPED and **DELAY** will both disappear, and **READY** will show, together with the current time,



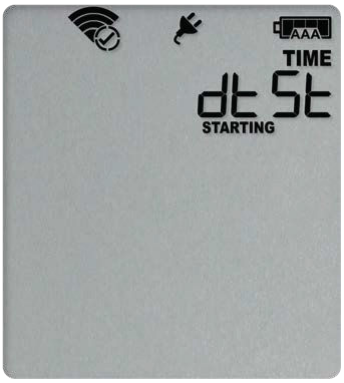
and the logger can now be started again as normal.

The UTREL30-WiFi will **not** be reset if you

- release the button before **STARTING** disappears; or
- keep holding the button until **STOPPED** disappears.

Automatic date/time start

If you configured the UTREL30-WiFi for a date/time start, it will start recording temperature values as soon as the entered start time is reached. Until then, the logger will display the screen on the right. Once the configured start time is reached, the logger shows the normal recording display.



The UTREL30-WiFi will perform a Connection Test as soon as the recording has started. To check the connection before the start time is reached, you can initiate the connection test yourself. Please refer to Testing your wireless and network connection (on page 34).

> **!** Hibernating the logger using LogTag® Analyzer will abort any previously configured Date/Time start.

During Recording

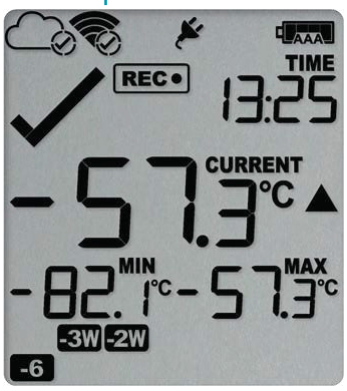
During normal operation, the display shows the most recently recorded temperature. This temperature is updated at the same rate as the logging interval. The current time is also displayed (in 24 hour format). A tick symbol ✓ is shown as long as no alarm event has occurred. If an alarm event is registered, a cross symbol ✕ is shown instead of the tick.

Below the main temperature the display shows the minimum and maximum temperatures recorded since the beginning of the trip, or since they were last manually reset.

At the bottom of the display you can see an alarm day summary, where any days on which an alarm was recorded are highlighted. The WiFi and cloud connection symbols are also shown.

Following are some sample display screens:

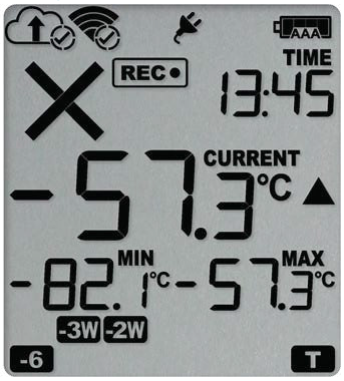
At 1:25 pm:



Alarm events were recorded 6, 18, 19 & 27 days ago.

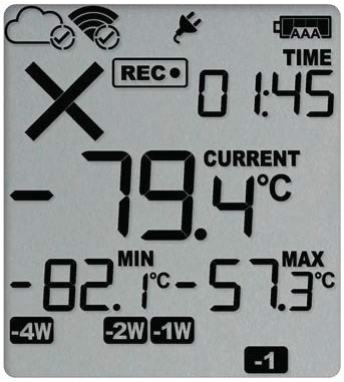
- The following symbols show on the display:
  - - for the alarm that occurred 6 days ago
  - - W for the alarms that occurred 18 and 19 days ago
  - -3 for the alarm that occurred 27 days ago
- These alarms were cleared by an inspector, as the display currently shows the OK tick (✓).
- The current temperature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

At 1:45 pm (20 minutes later)



- The temperature has remained above the upper alarm threshold and has now triggered an alarm event.
- The alarm symbol × is shown to indicate an alarm event occurred.
- The day marker for the current day () is shown.
- The alarm event is immediately uploaded to LogTag® Online, where it will show as a notification alert on the dashboard, and trigger notification emails or SMS messages if configured. Note the upload arrow (⬆) will only show briefly while data is being transferred to the cloud server.
- 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). This means some of the week symbols have also changed.

At 1:45 am on the next day the display shows the following:



The following symbols show on the display:

- o -1 for the alarm that shifted from today to yesterday
- p -1W for the alarm that shifted from 6 days ago to 7 days ago
- q - W for the alarms that shifted from 18 and 19 days ago to 19 and 20 days ago
- r -4W for the alarm that shifted from 27 to 28 days ago

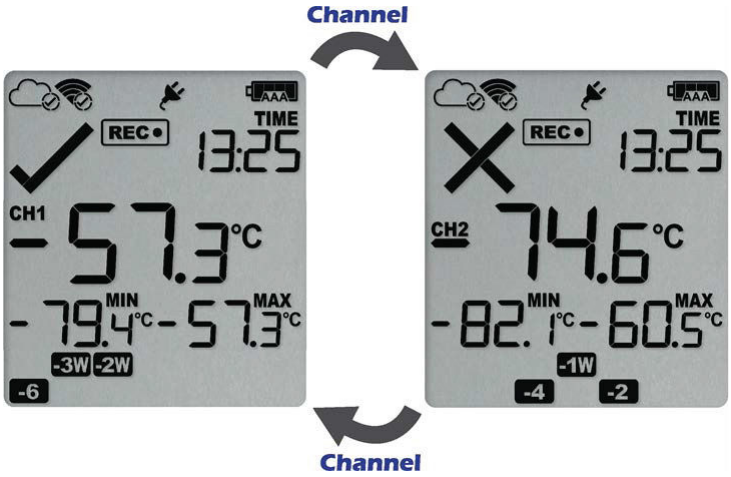
As a result of the day shifts, the symbols for today and 3 weeks ago no longer show

Switching Channels on the Display

Apart from the power symbols, battery status, recording status and the current time, the display only shows data that is associated with a single channel.

To enable users to see all values without having to press any buttons, each channel's data is shown in turns for 8 seconds (Auto Channel Swap).

To see one channel's data for longer, for example, to note down Min/Max values, you can press the **Channel/FUNCTION** button. Each time you press this button, the screen will switch to the channel that is currently not displayed and show that channel for 30 seconds. The Auto Channel Swap starts again if you do not press this button for 30 seconds, or if you press the **START/CLEAR/STOP** button.



> **!** The Alarm and OK symbols are independently shown for each channel. The red LED, however, blinks as long as either channel has registered an active alarm, and the buzzer will continue to operate.

The Auto Channel swap function is disabled

- when the logger is stopped;
- when the logger's power save feature is enabled, and it is powered by batteries; or
- during review.

Please see Reviewing Day Statistics on the Display for information about how the **Channel/FUNCTION** button operates while reviewing data.

Day Alarm Matrix Display while recording

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

	-	-5	-	-3	-2	-1	T	-4W	-3	- W	-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 days)									●		
Day -28 (-4 weeks)								●			
Day -29 (-4 weeks and 1 day)								●			

Marking a reading with an inspection mark

When you press the **REVIEW/MARK** button while the UTREL30-WiFi is recording, the next reading taken will be identified in the downloaded data and on the PDF report with an inspection mark.

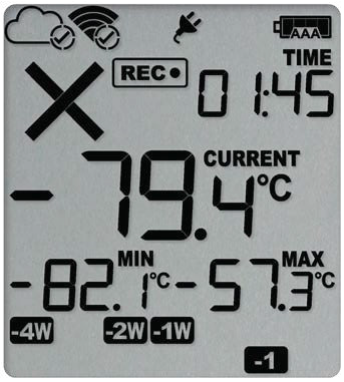
If the Allow stopping with the Stop button feature is enabled, a mark will also be registered when you press the **START/CLEAR/STOP** button, but do not complete the process of stopping the logger. An inspection mark will also be recorded if you clear an alarm. A mark will always be recorded for both channels.

The reading will also be reported to LogTag® Online with an inspection mark. The inspection log in LogTag® Online will show an AM or PM inspection, depending on the time of day the inspection took place.

Clearing an Alarm

During configuration with LogTag® Analyzer, you can allow users to clear an active alarm on the display. This is a useful function for an inspector, so repeated alarms can be recognized easier.

> **!** Note: Since each channel tracks alarm conditions independently, alarms must be cleared separately for each channel. Only the alarm for the channel shown when you start the procedure will be cleared.



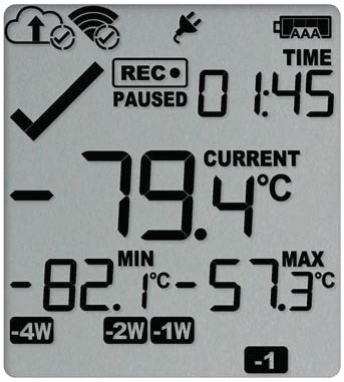
This display screen shows an existing alarm that occurred yesterday, but has not yet been cleared.

To clear an alarm, press and hold the **START/CLEAR/STOP** button.

After approx. 2 seconds the cross ✕ will be replaced with the tick ✓. Release the button when the tick appears. The normal recording display is shown. The red LED will stop flashing as soon as none of the channels show an active alarm.

The alarm will **not** be cleared if you release the button before the ✓ appears.

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 the next page.



If required, repeat the procedure for all channels with an active alarm.

> **!** 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. Clearing an alarm also does not reset any of the delay values. Please see Alarm Configuration for additional information.

Paused Readings

During configuration of the UTREL30-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 marked as **paused**, and their value is ignored when determining alarm trigger conditions, minimum/maximum values and other statistical calculations.

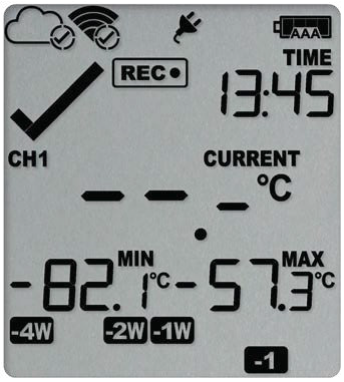
> The Paused Readings feature is useful, for example, when you need to temporarily remove the probe from the monitored location to inspect goods, but you do not wish to trigger an alarm as a result of you handling the probe.

Probe is disconnected

The display shows - -.- instead of a temperature value if the logger's remote temperature probe is disconnected. This function is useful if the probe is permanently mounted, but you wish to take the UTREL30-WiFi to a computer for downloading its data.

Any values recorded during this time will not be taken into account when calculating statistics values or alarms.

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



When evaluating data, any readings taken while the probe is disconnected are shown as --_- in the data list. The chart in LogTag® Analyzer and in LogTag® Online will show a gap during this period. Minimum and Maximum values shown on the display will remain visible and will not be updated until the sensor is plugged back in. If the probe was disconnected for a complete day, the minimum and maximum statistics for that day will show on the display - -.- and --- in the list.

Power Save

When **Power Save** is enabled, the display will automatically switch off if none of the buttons have been pressed for 30 seconds, and the unit is operated by its AAA batteries.

This function is appropriate in applications where you don't need to look at the display frequently, such as in transit monitoring applications, as the logger uses less battery power when the display is not turned on.

Pressing any button will re-activate the display.

Power save is enabled or disabled when configuring the UTREL30-WiFi via LogTag® Analyzer in the Advanced Settings tab.

> ! Note: The display will turn off, even if there is a pending alarm! The Red Alert LED will still blink.

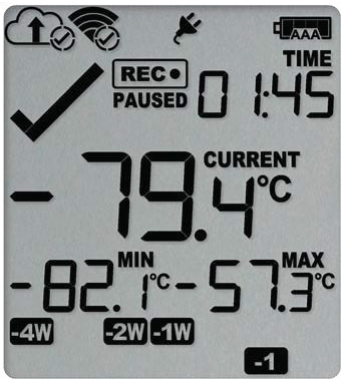
> ! When the display turns on after a button press, the auto-channel swap function is deactivated. This allows a user sufficient time to evaluate the screen. The **Channel/FUNCTION** button can still be used to switch the displayed channel.

> In Low power operation, Power Save will be active regardless of the settings made in LogTag® Analyzer.

Resetting the Min/Max Values

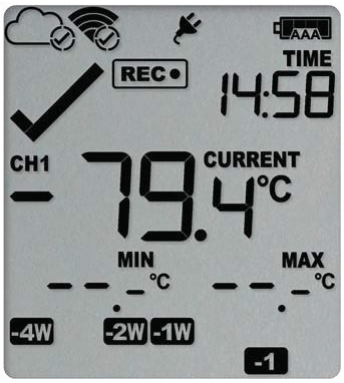
The UTREL30-WiFi tracks the minimum and maximum temperatures since it started logging, separately for each channel, and displays them below the last recorded temperature.

These values can be reset any time while the unit is recording (but not once the unit has stopped).



> ! Note: Since each channel tracks these values independently, you must perform the procedure separately for each channel. Only the values for the channel shown when you start the procedure will be reset.

To reset the values, follow this procedure:



1. Press and hold the **REVIEW/MARK** button.
2. After 1 second the number values alternate with dashes, after 4 seconds, the dashes remain on.
3. Release the buttons within 2 seconds. The values will be reset and the dashes remain on screen.

The values will not be reset, and the currently stored min/max values will be retained if

- you keep holding the button for more than 2 seconds after the dashes no longer blink; or
- you release the button within the initial 4 second period after the initial press.

In these cases, the display keeps showing the normal recording screen.

If desired, switch to the other channel and repeat the procedure.

The logger will now track new min/max values for each channel that was reset. A min/max reset mark will be recorded in the logged data. 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, but you will not be able to review previous min/max values on screen once they have been cleared.

Reviewing Day Statistics on the Display

Historic day statistics data can be accessed by repeatedly pressing the **REVIEW/MARK** button.

Each of the screens that follow shows:

- the day (relative to today), for which the data is being presented;
- the maximum or minimum temperature on that day;
- an indication which of those (minimum or maximum) is shown;
- the channel for which the data is shown;
- a duration, if the temperature was above or below the associated primary threshold; and
- if such a threshold breach resulted in an alarm event.

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

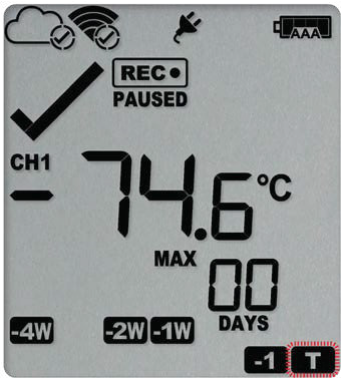
When you start the review process, the first screen shows the maximum value for “Today”, for the channel that was displayed at the time you started the review process. Pressing the review button again shows the minimum value for "Today", for the same channel. Each time the review button is pressed, you will first see the MAX screen, then the MIN screen for previous days, for the same channel. When the screen with the minimum for "Day -29" has been reached, the next press of the review button shows the initial review screen for that channel.

To see the data for the other channel, press the **Channel/FUNCTION** button. This will display the MAX screen of the other channel, for the day that you were reviewing. When you now press the review button, you will continue to remain in this channel. It allows you to quickly review all four screens for a single day, for both channels.

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 25

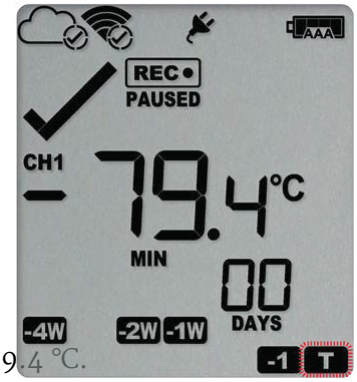
Today's data

Pressing the button displays the current day's maximum statistic, in this case, the review starts with channel 1:



- The Today marker flashes to indicate that today's data is 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 -74.6 °C.
- The paused function is enabled.

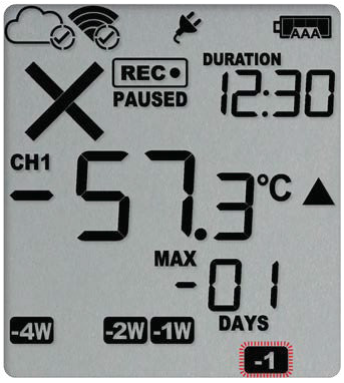
Pressing the button again displays the current day's minimum statistic:



- still flashes, 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 -79.4 °C.

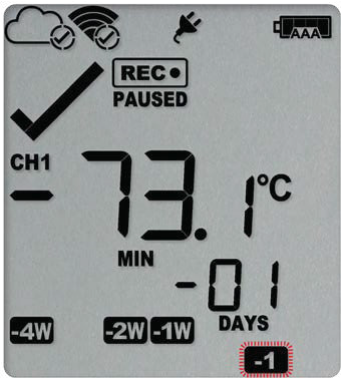
Yesterday's data

Pressing the button now displays yesterday's maximum statistic:



- The -1 marker -1 flashes 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 ×, as this duration was longer than the allowed time above the threshold.
- The maximum temperature recorded yesterday was -57.3 °C.

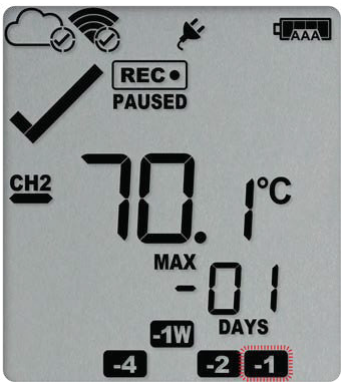
Pressing the button now displays yesterday's minimum statistic:



- -1 flashes, as we are still looking at yesterday's data.
- 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 -73.1 °C.

Yesterday's data from the other channel

Pressing the **Channel/FUNCTION** button now displays yesterday's maximum statistic from channel 2:



- The -1 marker -1 still flashes to indicate that yesterday's data is being displayed.
- Yesterday, no recordings above the upper threshold were recorded, and no duration value is shown.
- The maximum temperature recorded yesterday was -70.1 °C.

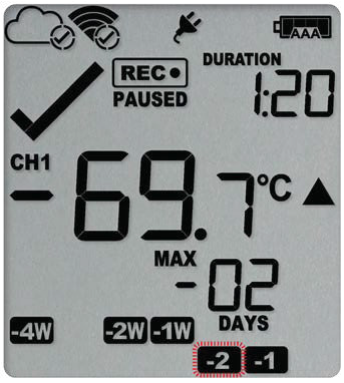
Pressing the button now displays yesterday's minimum statistic from channel 2:

- -1 flashes, as we are still looking at yesterday's data.
- Yesterday, no temperature values were recorded below the lower alarm threshold.
- The minimum temperature recorded yesterday was -75.2 °C.

Pressing the **Channel/FUNCTION** button again displays yesterday's maximum statistic from channel 1, with a further press on the button displaying yesterday's minimum statistic from channel 1 once more.

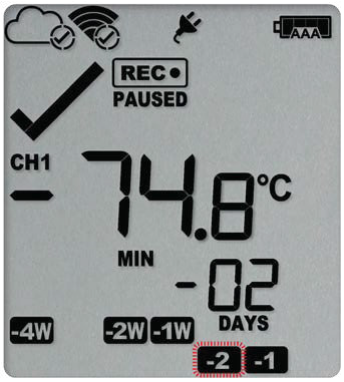
Data from the day before yesterday

Pressing the button now displays the maximum statistic from two days ago:



- The -2 flashes 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 -69.7 °C.

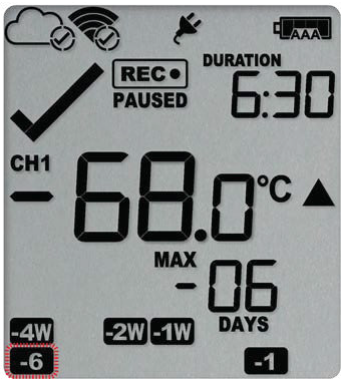
Pressing the button now displays the minimum statistic from two days ago:



- -2 flashes, 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 -74.8 °C.

Data from 6 days ago

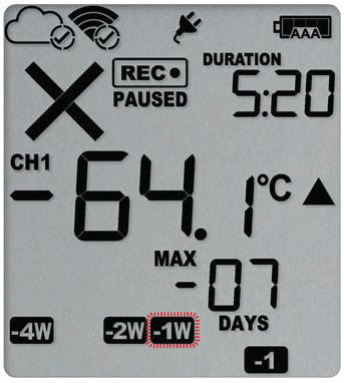
After pressing the button for a few times (skipping days -3 to -5) the maximum statistic from six days ago is displayed:



- The flashes 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 six days ago was -68.0 °C.

Data from 7 days ago

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



- The -1W flashes 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 hours 20 minutes.
- An alarm event was generated, indicated by the × symbol. Neither duration from day -6 or day -7 alone would cause an alarm event, however the combined duration is 11 hours 50 minutes, which is more than the allowed 10 accumulative hours.
- The maximum temperature recorded seven days ago was -64.1 °C.

Tip: Pressing and holding the button will get you back to the previous screen for the same channel, rather than advancing one screen.

Day Alarm Matrix Display while reviewing

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

	-	-5	-	-3	-2	-1	T	-4W	-3	- W	-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 days)	●								●		
Day -28 (-4 weeks)								●			
Day -29 (-4 weeks and 1 day)						●		●			

Stopping the UTREL30-WiFi

Automatically

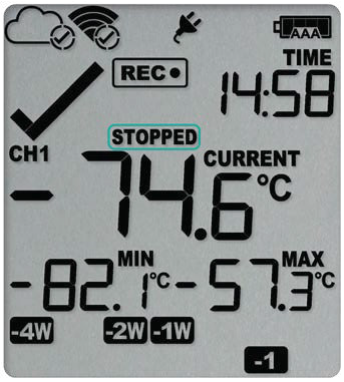
The UTREL30-WiFi automatically stops recording temperature when the maximum number of readings specified during configuration has been reached.

Manually

You can configure a UTREL30-WiFi so it can be stopped with the **START**/CLEAR/STOP button. When you receive the unit, the stop function is typically disabled. You can enable it in the Advanced Settings tab during configuration. When enabled, you can stop the unit as follows:

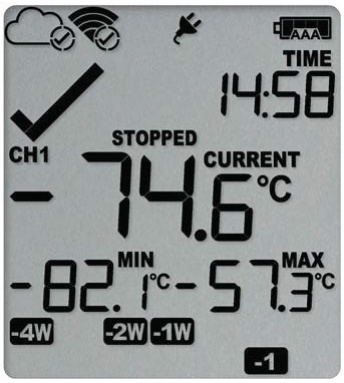
Press and hold the **START**/CLEAR/STOP button.

STOPPED is shown in addition to the REC symbol.



Keep holding the button until the REC symbol disappears, then release the button within 2 seconds.

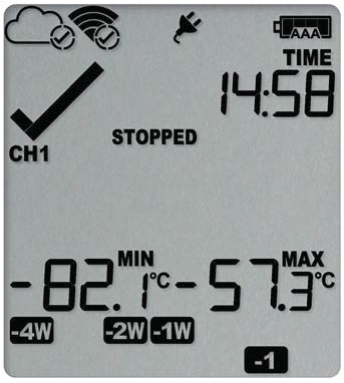
STOPPED is shown permanently on the display and the logger will no longer take readings.



The last recorded temperature is now no longer shown, but minimum and maximum trip values remain.

The logger will **not** stop if you

- release the button before the REC symbol disappears; or
- keep holding the button after **STOPPED** remains permanently on until the REC symbol reappears.



The UTREL30-WiFi will now connect to LogTag® Online to upload any outstanding temperature readings.

> **!** Once the logger has stopped, the last alarm status before the logger stopped will continue to be indicated with a cross or a tick symbol on the display, for each channel, but the audible alarm and the alarm LED will turn off (see exception below).

> **!** If an ALARM is present (×) 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 for more information. In this case, a tick will be shown for the alarm status once the logger has stopped.

Once the unit is stopped, you need to re-configure it with the app or with LogTag® Analyzer, unless the option **Allow reset of logger with Start button** is enabled. See Resetting the Logger on page 77.

Plugging the UTREL30-WiFi into a USB port

What happens when you plug your UTREL30-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

Several drivers will now be installed, depending on the UTREL30-WiFi's configuration. All drivers are part of the operating system and will typically not require administrator privileges for your computer.

During driver installation you will see the familiar Windows notification.

Drivers that are installed may include the following:

- Mass Storage Device Driver
- 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 UTREL30-WiFi does not generate files.
- 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.
- USB Composite Device Driver This driver signals that multiple devices are involved when plugging in a UTREL30-WiFi.

If you have configured the UTREL30-WiFi to generate files, these will be created every time you plug the logger into the USB port. While the file creation takes place, the display shows bUSY instead of the current time.

Once the files are generated, a new drive or mounted device will appear. The device name will be created from the serial number of the UTREL30-WiFi.

If you have disabled file generation during configuration, no drive will appear.

> ⚠ USB communication can interfere with temperature measurement. While a UTREL30-WiFi is plugged into a PC's USB port, occasionally a scheduled temperature reading is not taken. The graph will display a gap and the data list will show --- followed by the # symbol. This does not apply when the logger is connected to a USB power supply.

macOS, OSX and Linux

Typically in these operating systems a new drive will be mounted, from which you can open the PDF file. You will not be able to configure the UTREL30-WiFi using either of these operating systems, unless you use virtualization software such as VMWare Fusion, Parallels Desktop or Virtualbox to create a hosted Windows environment. You need to discuss these options with your network administrator. Virtualbox is free, while VMWare and Parallels are offered as paid subscriptions.

Accessing the files

If the logger was configured to generate files, a new drive letter or mounted device will appear. The device name will be created from the serial number of the UTREL30-WiFi. You can access the files by browsing to the newly created drive and double-clicking the PDF, CSV or LTD files:

- If you have selected PDF as one of the files to be generated, you will find a single file with the .pdf extension, containing the data for both channels. For PDF files, you need Adobe Acrobat Reader or a similar PDF viewer.
- If you have selected LTD as one of the file types, you will find a single file with the ltd extension, containing the data for both channels. To open the LTD file you need to install the free LogTag® Analyzer software.
- If you have selected CSV as one of the file types, you will find two files with the *.csv extension, one for each channel. CSV files can be opened with a text editor, or imported into a spreadsheet program such as Microsoft® Excel.

> **!** To retain the logger-generated files, copy them to a permanent storage location on your computer, such as the **Documents** folder, as they are not automatically copied.
> The data on the logger is retained, until is re-configured. Each time you plug the UTREL30-WiFi back into the computer, the files are re-generated. Once the battery is exhausted, the real time clock on the unit stops and dates and times for the retained data may no longer be accurate. You will, however, still be able to access the last trip's data.

Interpreting the Data

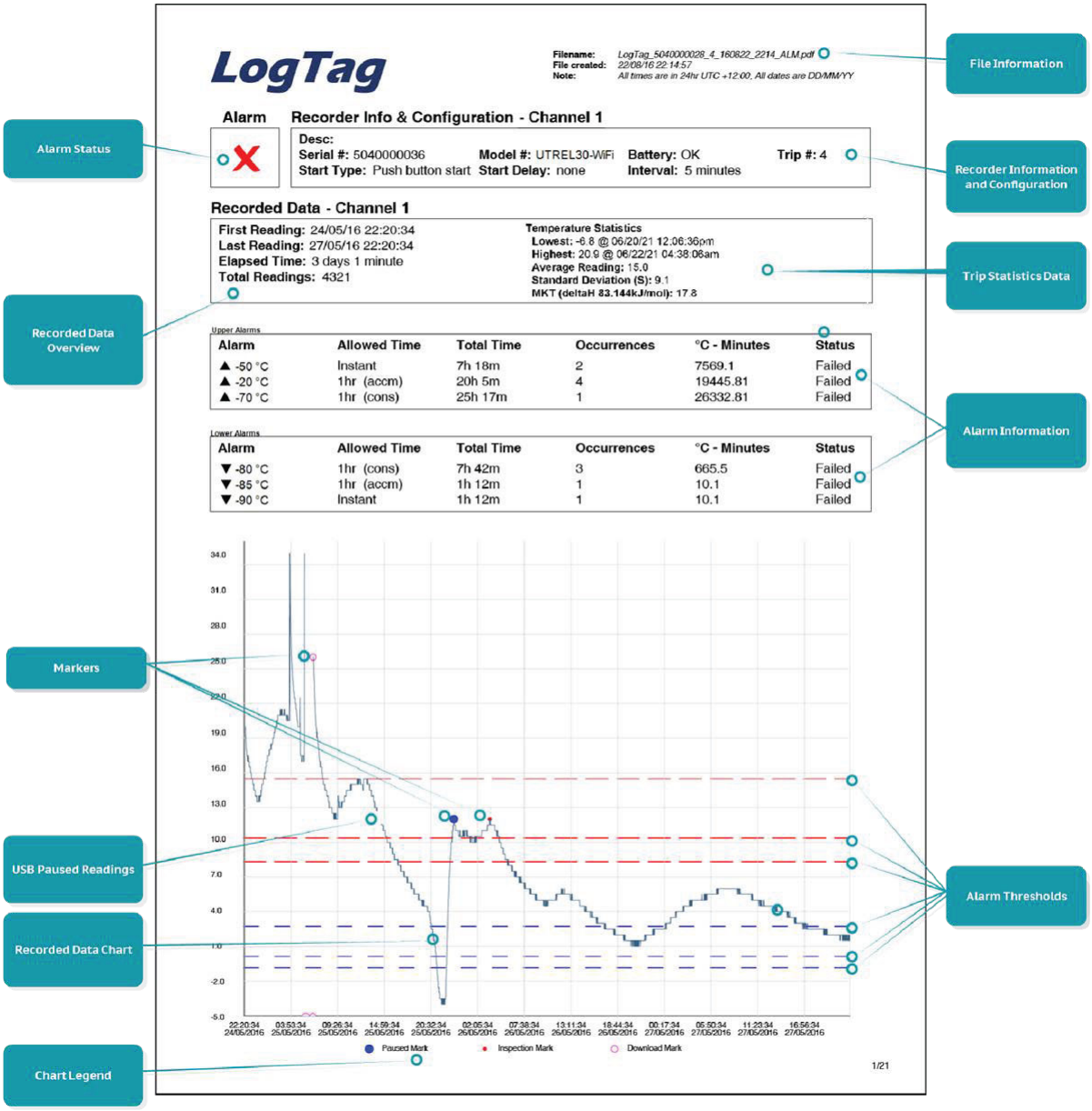


Figure 8: Sample report page with Multiple Alarm Thresholds

Data Evaluation - Report with multiple alarms

Alarm Status

This shows at a glance if the UTREL30-WiFi recorded alarm conditions for this channel during the trip (showing a red ✘) or if no alarms were recorded (showing a green ✔).

Recorded Data Overview

This section shows at what time the logger started to record data, when it finished, how many readings were recorded and how long that took.

Temperature Scale

A temperature scale is shown, which adjusts dynamically depending on the settings made during configuration of the logger with LogTag® Analyzer.

Markers

On the chart, special symbols will mark the readings at which certain events took place:

- A ° symbol will be shown, if the UTREL30-WiFi was downloaded with LogTag Analyzer.
- A • symbol will be shown if an inspection mark was placed with the **REVIEW/MARK** button.
- A • symbol will be shown when the Paused feature was enabled, and any button was pressed during recording.
- A • symbol will be shown where a reading could not be taken due to USB communication with a PC.
- A • symbol will be shown when the min/max readings were reset.

USB Paused Readings

This logger cannot take a reading while exchanging data with a PC while being plugged into a USB port. As a result, you will occasionally see a gap in the graph where the UTREL30-WiFi would otherwise have taken a reading. The list shows --- instead of the reading.

Recorded Data Chart

The chart shows a graphical representation of the data during the trip. As part of the UTREL30-WiFi configuration process you set the parameters that influence how the chart is presented.

Legend

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

File Information

This section shows general information about the PDF file, such as generation time, date and time formats used in the chart and the data list as well as 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].pdf

Other files that may be generated have the extensions *.csv and *.ltd.

Logger Information and Configuration

This section shows general information such as serial number, model number, 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. This section is identical for both channels with the exception of the description.

Logger Statistics Overview

This section gives a brief overview of the temperature data collected during the trip. It shows minimum and maximum values, when these occurred and also shows average, standard deviation and MKT values.

Upper and Lower Alarm Information

These two sections summarize the alarm trigger conditions and occurrences during the trip:

- Alarm threshold temperature value
- Any delay value for consecutive or accumulative alarms
- The total time above or below a threshold
- How often an alarm occurred
- Whether or not an alarm was generated for this alarm trigger

You may see up to five alarms for each direction, depending on the logger's configuration.

Upper Threshold Lines

Upper alarm thresholds are shown with red dashed lines ---so you can see at a glance where temperatures went above set limits. You may see up to five lines depending on configuration and zoom settings.

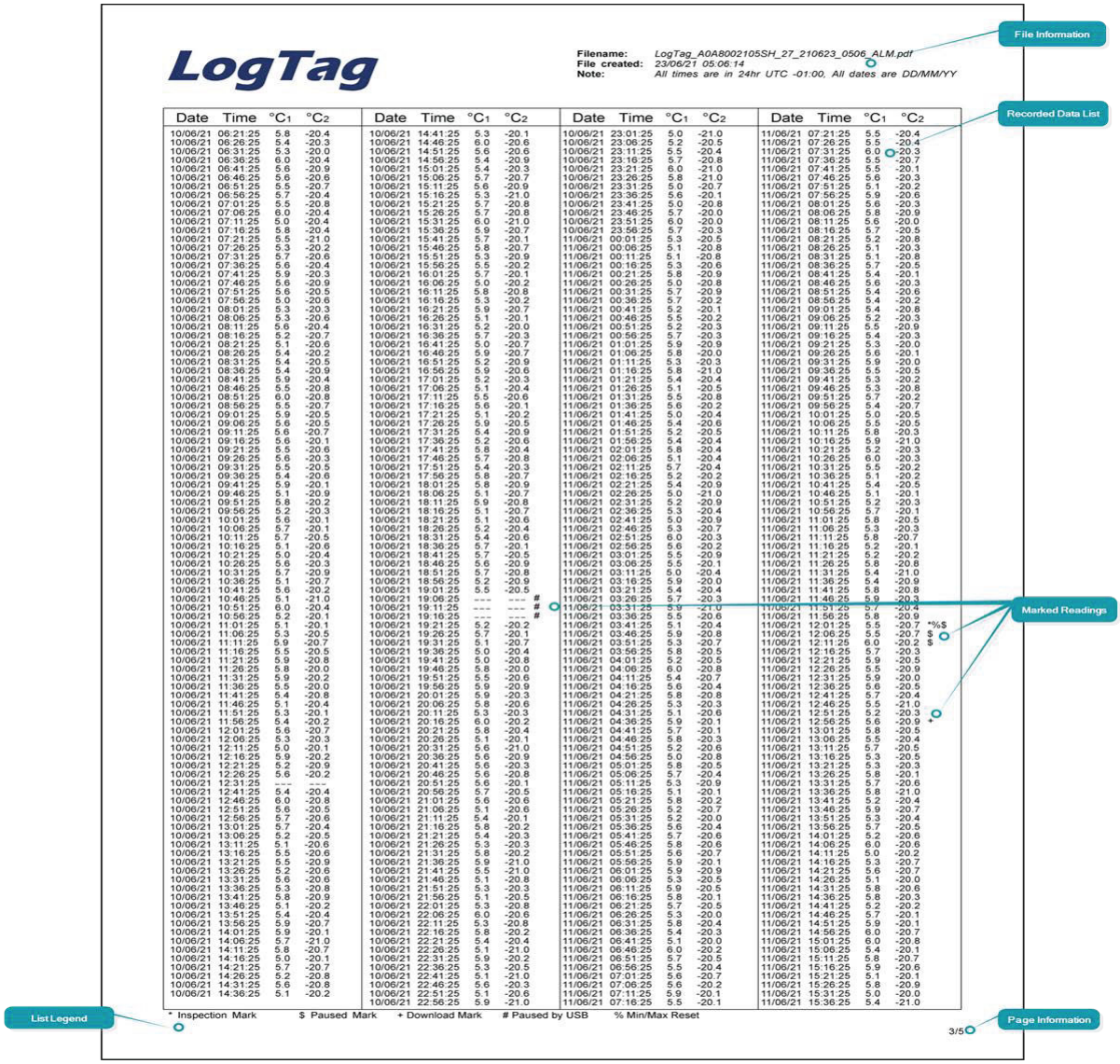
Lower Threshold Lines

Lower alarm thresholds are shown with blue dashed lines ---so you can see at a glance where temperatures went below set limits. You may see up to five lines depending on configuration and zoom settings.

Page information

The current page number and the total number of pages appear on every page.

Data Evaluation - Data List



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 for each channel, plus any special events that were recorded against this reading.

Marked readings

In the data list, each entry may be marked with one or more of the following symbols:

- A **+** symbol will be shown, if the UTREL30-WiFi was downloaded with LogTag® Analyzer.
- A ***** symbol will be shown if an inspection mark was placed with the **REVIEW/MARK** button.
- A **#** symbol will be shown where a reading could not be taken due to USB communication with a PC.
- A % symbol will be shown when the min/max readings of either channel were reset. You will need to identify the channel that was reset in the chart.

Symbols are shown against the reading following the event.

Legend

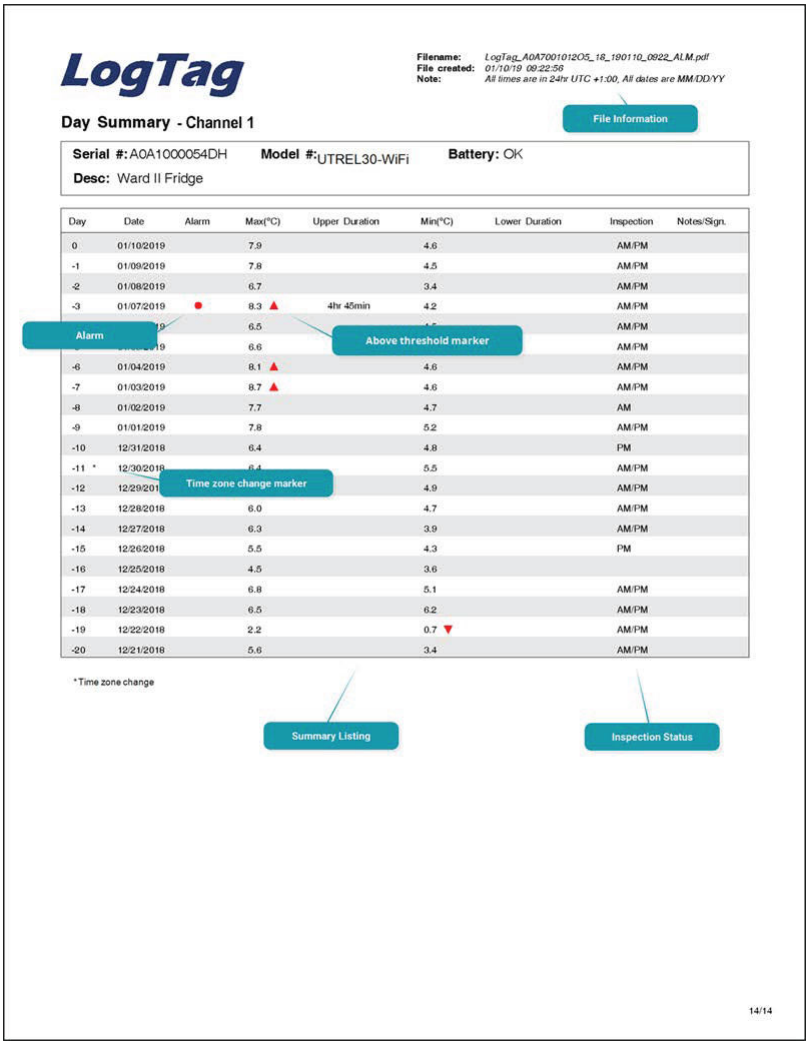
Shows the symbols for **download marks**, **inspections marks** and **paused marks** if they appear in the readings.

Page information

The current page number and the total number of pages appear on every page.

Data Evaluation - Day Summary

For each channel, a separate day summary page is included in the PDF.



LogTag

Filename: LogTag_A0A7001012O5_18_190110_0922_ALM.pdf
File created: 01/10/19 09:22:56
Note: All times are in 24hr UTC +1:00, All dates are MM/DD/YY

File Information

Day Summary - Channel 1

Serial #: A0A1000054DH Model #: UTREL30-WiFi Battery: OK
Desc: Ward II Fridge

Day	Date	Alarm	Max(°C)	Upper Duration	Min(°C)	Lower Duration	Inspection	Notes/Sign.
0	01/10/2019		7.9		4.6		AM/PM	
-1	01/09/2019		7.8		4.5		AM/PM	
-2	01/08/2019		6.7		3.4		AM/PM	
-3	01/07/2019	●	8.3 ▲	4hr 45min	4.2		AM/PM	
			6.5				AM/PM	
			6.6				AM/PM	
-6	01/04/2019		8.1 ▲		4.6		AM/PM	
-7	01/03/2019		8.7 ▲		4.6		AM/PM	
-8	01/02/2019		7.7		4.7		AM	
-9	01/01/2019		7.8		5.2		AM/PM	
-10	12/31/2018		6.4		4.8		PM	
-11 *	12/30/2018				5.5		AM/PM	
-12	12/29/201				4.9		AM/PM	
-13	12/28/2018		6.0		4.7		AM/PM	
-14	12/27/2018		6.3		3.9		AM/PM	
-15	12/26/2018		5.5		4.3		PM	
-16	12/25/2018		4.5		3.6			
-17	12/24/2018		6.8		5.1		AM/PM	
-18	12/23/2018		6.5		6.2		AM/PM	
-19	12/22/2018		2.2		0.7 ▼		AM/PM	
-20	12/21/2018		5.6		3.4		AM/PM	

*Time zone change

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 readings were recorded.

Each row contains the following information:

- Minimum and maximum for the day
- Whether or not an alarm was recorded for that day
- If the minimum and maximum temperatures were above or below the thresholds
- How long temperatures were outside the specifications (even if no alarm was recorded)
- If the logger was inspected in the morning and in the afternoon

If the clock was adjusted on one of the days, a special marker (*) will be displayed for that day.

Page information

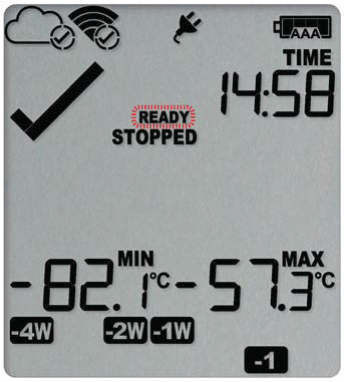
The current page number and the total number of pages appear on every page.

Resetting the Logger

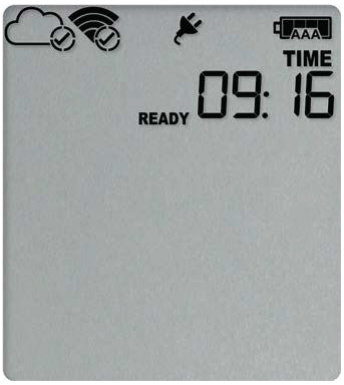
You can reset a UTREL30-WiFi back to its original **READY** state. Once reset, recording can be started again.

⚠ When performing this procedure all recordings and statistics stored in the logger are irrevocably deleted and cannot be recovered. Please ensure your data has been saved!
All configuration settings in the logger, including Wireless and Network settings, are retained.
The logger will NOT connect to LogTag® Online until it has been started using the **START**/CLEAR/STOP button.

For this process to work, the logger must be **STOPPED**.
Press and hold the **START**/CLEAR/STOP button. The **READY** symbol will turn on.



When the **STOPPED** symbol turns off, release the button within 2 seconds. The logger is now ready to be started again. Follow the normal starting procedure (Starting the Logger on page 48).

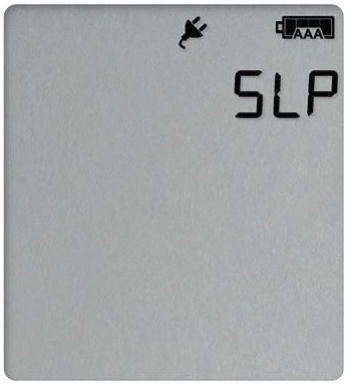


If the button is released while **STOPPED** is still , or you wait until the **READY** symbol disappears, the display shows **STOPPED** again, and the logger remains stopped. This means, the data from the previous trip is still accessible.
The ability to reset a logger is enabled or disabled in the Advanced Settings tab when configuring the UTREL30-WiFi via LogTag® Analyzer.

Hibernating a UTREL30-WiFi

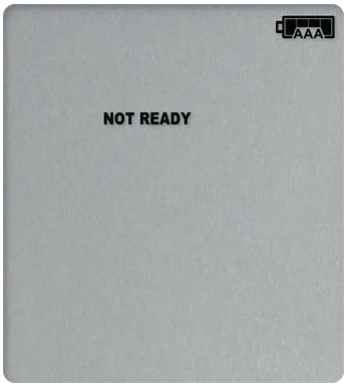
When hibernated, the logger's power consumption is near zero. Hibernating a logger is useful for conserving battery life when the logger is not used for extended periods. If you hibernate the logger for longer than a week, please remove the AAA batteries from the logger to avoid them leaking.
UTREL30-WiFi loggers are placed into Hibernation using LogTag® Analyzer by clicking **Hibernate** from the **LogTag** menu.

Initially, the display shows SLP on the display until you remove the logger from the USB port.

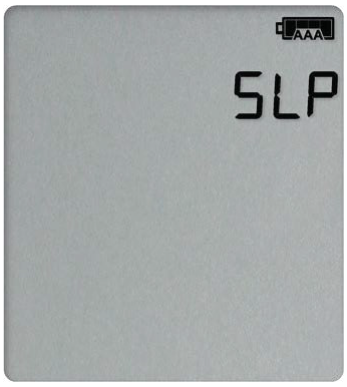


A hibernated logger has no active display, however a button press will wake the logger up briefly. The display will show

- the text **NOT READY**; and
- the battery capacity of the AAA batteries (if the batteries have been removed, the empty symbol AAA will be shown).



After a few seconds SLP will be shown on the display, and the display will turn off.
The logger reverts to being hibernated.



⚠ A hibernated logger cannot be reactivated via the buttons – it must be reconfigured with LogTag® Analyzer, or the app.

Airplane Mode

A UTREL30-WiFi can be switched to airplane mode to comply with airlines' regulations for wireless transmission in aircraft. You can enable Airplane mode using the buttons on the UTREL30-WiFi:

- Press and hold the **Channel**/FUNCTION and **START**/CLEAR/STOP buttons simultaneously.
- Keep holding the buttons while the Airplane mode symbol (✈) on the display blinks.
- After approximately 6 seconds the symbol stops blinking and turns on permanently. Release the buttons.

Airplane Mode is now turned on, and all wireless functionality is disabled. Cloud and WiFi connection symbols are off.

After removal of the logger from the aircraft, airplane mode can be turned off, using the exact same procedure:

- Press and hold the **Channel**/FUNCTION and **START**/CLEAR/STOP buttons simultaneously.
- Keep holding the buttons while the Airplane mode symbol (✈) on the display blinks.
- After approximately 6 seconds the symbol stops blinking and turns on (!) permanently. Release the buttons.

Airplane Mode is now turned off, and the wireless functionality is enabled. Cloud and WiFi connection symbols will turn on successively as they go through the process of connecting to LogTag® Online.

Replacing the Batteries

When the display shows that the battery is almost empty (AAA) new batteries should be fitted. Open the case as described in Inserting the Batteries on page 17. Remove the old batteries and complete the remainder of the procedure.

Model Number	UTREL30-WiFi
Temperature Sensor Measurement Range	-90 °C to +40 °C (-130 °F to +104 °F)
Operating Temperature Range	-30 °C to +60 °C (-22 °F to +140 °F)
Storage Temperature Range	-10 °C to +40 °C (32 °F to +104 °F)
Ambient humidity range during transport, storage and use	0 to 95 %RH
Rated Temperature Resolution	0.1 °C (0.2 °F) for measurements -85 °C to 0 °C (-121 °F to +32 °F) 0.2 °C (0.4 °F) for measurements 0 °C to +18 °C (+32 °F to +64 °F) and -90 °C to -85 °C (-130 °F to -121 °F) 0.3 °C (0.5 °F) for measurements +18 °C to +30 °C (+64 °F to +86 °F) 0.5 °C (0.9 °F) for measurements +30 °C to +40 °C (+86 °F to +104 °F) Please see resolution chart in Accuracy and Resolution
Rated Temperature Accuracy	Better than ±0.5 °C (±0.9 °F) for -20 °C to +10 °C (-4 °F to 50 °F) Better than ±0.7 °C (±1.3 °F) for -50 °C to -20 °C (-58 °F to -4 °F) and +10 °C to +30 °C (+50 °F to +86 °F) Better than ±1.0 °C (±1.8 °F) for -85 °C to -50 °C (-121 °F +-58 °F) and +30 °C to +40 °C (+86 °F to +104 °F) Better than ±1.8 °C (±3.2 °F) for -90 °C to -85 °C (-130 °F to -121 °F) Please see accuracy chart in Accuracy and Resolution
Probe Connectivity	Up to 2
Probe Compatibility	All ST10 precision thermistor external probes and ST10S Smart Probes can be interchangeably connected to the UTREL30-WiFi. Please refer to the page for External Probes on the LogTag North America website.
Sensor Technology	Precision electronic thermistor
Sensor Reaction Time	According to Probe
Clock accuracy	Quartz crystal-locked real time clock, typical accuracy ±25ppm @ 25 °C (equiv to 2.5 seconds/day)[1] Temperature coefficient is -0.034±0.006ppm/°C (i.e. typically +/-0.00294seconds/day/°C)
Recording Capacity	16,065 real time temperature values per channel[2], giving ▫ 6 days @ 6 min logging; ▫ 112 days @ 10 min logging; or ▫ 168 days @ 15 min logging Supports continuous logging ("wrap-around") or specific recording period
Statistics memory	For displaying statistics on the LCD ▫ Trip min/max values, per channel ▫ Max/Min values for the past 30 days, per channel ▫ Alarm duration values for the past 30 days, per channel ▫ AM/PM Inspections for the past 30 days, per channel ▫ Total time above/below alarm thresholds, per channel
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 up to 180 days in the future
Alarm functions	▫ Total of 6 alarms per channel ▫ Up to 5 configurable upper alarms ▫ Up to 5 configurable lower alarms • ✕indicator on display, linked to alarms ▫ Alarm arrows linked to primary thresholds ▫ Red Alert LED ▫ Audible alarm
Vibration	Withstands vibration specification as detailed in EN12830:2018

1 Clock is synchronized with NTP server once every 24 hours when connected to LogTag® Online.

2 The maximum number of available readings does not increase if one of the channels is deactivated.

Model Number	UTREL30-WiFi
Shock	▫ Withstands shock specification as detailed in EN12830:2018 ▫ Withstands 5 drops from 1m onto smooth concrete floor without loss of function or calibration
EMC compliance	▫ EC EMC directive EN 55024:2010 (Immunity) ▫ EC EMC directive EN 55032:2015 (Emission) ▫ 47 CFR Part 15 Subpart B (unintentional radiator) as a Class A digital device as defined in section §15.101 ▫ RoHS2 Directive 2011/65/EU
Environmental	IEC 60529: IP51 with USB cap fitted and hung vertically
Case Material	Polycarbonate, with ABS clear window
Power source	▫ 2 x 1.5V AAA alkaline batteries, user replaceable (optional, recommended) ▫ 1 x 5V power input from commercial 5V USB power supply with Micro-USB plug ▫ 1 x CR2032 3V Li-MnO_2 coin cell backup battery, non-user replaceable, non-rechargeable
Size	141 mm (H) x 72 mm (W) x 18 mm (T)
Calibration	Factory calibration using instruments 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, per channel ▫ Single page day summary with Min/Max report, per channel ▫ Multi page report with list of readings including date/time and both channels
WiFi Standards	802.11 b/g/n
WiFi Authentication Methods	Open, WPA2/PSK (with or without PMF), EAP-PEAP, EAP-TTLS
Wireless Range	50m in open air, clear line of sight (depending on access point capability)
Bluetooth Version	Bluetooth V4.2 BR/EDR and Bluetooth LE
Download time	▫ Typically with full memory (16,065 readings per channel) less than 30 seconds from time of insertion to availability of PDF report. ▫ Typically less than 10 seconds from time of insertion to availability of LTD file in LogTag® Analyzer (if configured)
Software requirements	▫ LogTag® Analyzer version 3.1 or later to configure and download ▫ PDF reader software to access on-board PDF files ▫ LogTag® Online account for accessing real-time readings
USB compatibility	USB 2.0, micro USB plug
Accessories	▫Wall holder

Appendix 1 - Accuracy and Resolution

Temperature Accuracy

The following graph shows the typical rated temperature accuracy of a UTREL30-WiFi, for either channel:

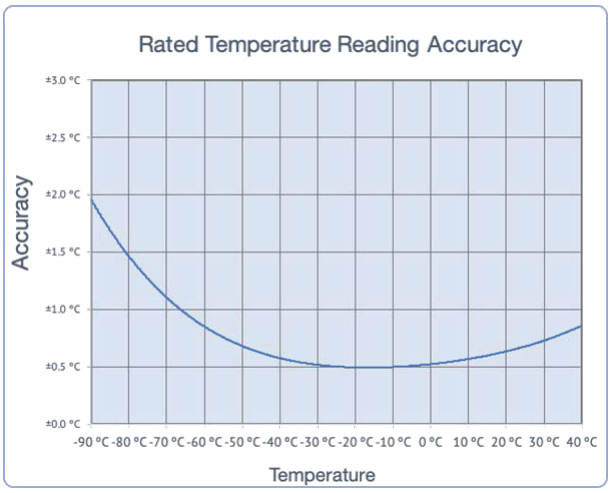


Figure 9: Rated Temperature Accuracy Chart

Temperature Resolution

The following graph shows the typical rated native temperature resolution of a UTREL30-WiFi, for either channel:

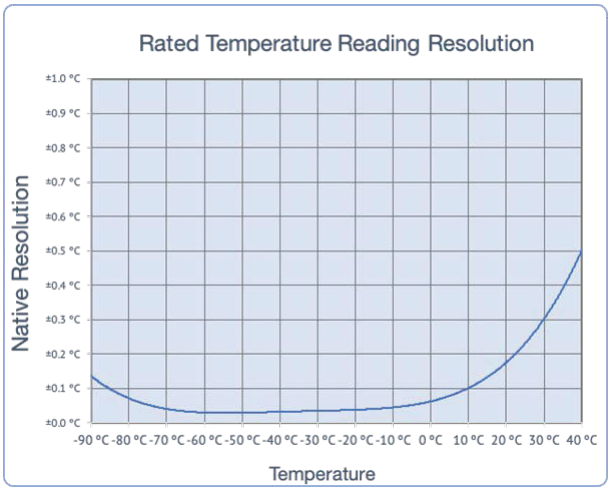


Figure 10: Rated Temperature Resolution Chart

Appendix 2 - Glossary

A

Accumulative alarm

Temperature or humidity readings are above or below the configured threshold for the total of time defined, but readings may not necessarily be sequential.

Active alarm

An alarm/alert that has triggered, but has not been cleared.

Active alert

An alarm/alert that has triggered, but has not been cleared.

Alarm

An alarm is an automatically generated event warning a user that environmental conditions are no longer deemed safe for the monitored location. Alarms are generated by the device based on alarm trigger conditions, such as thresholds, direction and delays. If an alarm trigger condition is met, the device displays an alert and the software reports an alarm event has taken place.

Alarm activation delay

This value is used for consecutive and accumulative alarms and defines the number of recorded values that need to be alarm readings for the trigger condition to be met.

Alarm event

Single occurrence of an alarm

Alarm range

Temperature/humidity range that is outside the -> Non-Alarm range

Alarm reading

Temperature or Humidity value that lies above the upper or below the lower alarm threshold value

Alarm threshold value

The temperature or humidity value at which a reading is regarded as an alarm reading. This can be an upper threshold or a lower threshold

Alarm trigger condition

Set of conditions that cause an alarm to be triggered. This requires a -> threshold value, a -> direction, an -> activation type and a -> delay value.

Alarm trigger time

The time at which all conditions of an alarm were met

Alarm triggered

One of the alarm trigger conditions has been met, the device displays an alert and the software reports an alarm event has taken place.

Alert

Visual or audible representation of an alarm on a device

C

Consecutive alarm

Temperature or humidity readings are above or below the configured threshold for the time defined without interruption.

Cumulative alarm

Temperature or humidity readings are above or below the configured threshold for the total of time defined, but readings may not necessarily be sequential.

D

Delay value

Number of logs that have to be in an -> alarm range to trigger an alarm event

Direction

Whether an alarm is a lower or upper alarm

I

Inspection

Pressing the Mark button on a logging device

Inspection event

Pressing the Mark button on a logging device

Instant alarm

One single temperature or humidity reading is above or below the configured threshold.

L

Latched alarm

An Alert that remains active even if the alarm trigger conditions are no longer met

Lower alarm

An alarm is called a lower alarm if the alarm trigger condition requires readings to go below a low threshold temperature.

Lower alarm threshold

If a recorded temperature or humidity value is equal to or below this value it is regarded to be an alarm reading.

N

Non-alarm range

Target temperature/humidity range where the readings are regarded as acceptable/within specification

Non-alert range

Target temperature/humidity range where the readings are regarded as acceptable/within specification

P

Primary alarm

The alarm threshold closest to the non-alarm range in a multi-alarm device

S

Secondary alarm

The alarm threshold second closest to the non-alarm range

Single event alarm

Temperature or humidity readings are above or below the configured threshold for the time defined without interruption.

T

Tertiary alarm

The alarm threshold third closest to the non-alarm range

Trip

Readings taken sequentially from starting a unit until it has been reconfigured or stopped.

Trip number

The number of times a unit has been started.

U

Upper alarm

An alarm is called an Upper Alarm if the alarm trigger condition requires readings to exceed an upper threshold temperature/humidity.

Upper alarm threshold

If a recorded temperature or humidity value is equal to or above this value it is regarded to be an alarm reading.