USER GUIDE

USRID-16 WHO

LogTag

Distributed by AKRIBIS

USRID-16W

WHO Version

Single-use WHO PQS Pre-Qualified USB PDF Electronic 40-day Shipping Indicator

Product User Guide

Document Release Version: 1.1
Published April 7, 2022
Copyright © 2004-2022, LogTag North America

Contents

Introduction 6

Required Equipment 6

What's in the Box 6

Features 7

Case 7
Buttons 7
Display 7
PDF 8
Software Requirements 9

Configuring the USRID-16W for logging 10

Standard Configuration Options 10
Alarms 11
Advanced Configuration Settings 12
File Settings 12
Finalizing the configuration 13

USRID-16W Start Options 14

Display Overview 15

Operating the Indicator 17

After the Indicator is configured 17
Starting the Indicator 17
During Recording 18
Stopping the USRID-16W 19
Reviewing Min/Max values and Alarms 21
Plugging the USRID-16W into a USB port 23
Accessing the files 24

Interpreting the Data 25

Data Evaluation - Report 25
Data Evaluation - Data List 28

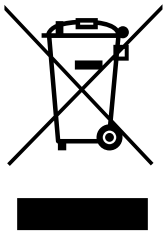
Technical Specifications 30

Appendix 1 - Glossary 32

Appendix 2 - Accuracy and Resolution 36

Temperature Accuracy 36
Temperature Resolution 36

Safety Information



The USRID-16W USB temperature indicator contains a non-replaceable Lithium Battery. When the battery indicates “LOW”, the indicator should be replaced, and the battery recycled or disposed of according to your local regulations.

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

Keep out of the reach of children.

Liability

LogTag 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.

Battery Life

The battery in the USRID-16W is designed to power the device for up to 40 days, provided

- the device was not stored for more than 18 months prior to activation;
- the device is stored and operated according to LogTag North America’s recommendations.

⚠ The USRID-16W indicators are unable to record readings when connected to USB. You cannot use a USB power supply to power the device!

The USRID-16W's data is accessible for 6 months from the end of the trip directly on the display, and can be downloaded indefinitely when plugged into a USB port during the product's lifetime.

Disclaimer

The USRID-16W loggers monitor temperature exposure and not the quality of the goods they accompany. Their purpose is to signal a requirement for further investigation.

Typographical Conventions

Unless this document specifically mentions the models USRID-16WA/B or USRID-16WC, the text USRID-16W is used and refers to both models.

Text **in this font** refers to buttons on the USRID-16W.

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 USRID-16W.

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 USRID-16W indicator

Introduction

LogTag's USRID-16W models are pre-configured, single use USB PDF temperature indicators with a data logging function. They feature a display, which allows select statistical data to be reviewed directly on the unit without the need for a PC. Trip reports can be generated without the need to install proprietary software or hardware at the destination.

Each model is pre-configured to the requirements of the WHO PQS Shipping Indicator specification (while still allowing limited configuration using LogTag® Analyzer) ready to be started and placed with the goods to be monitored . At the destination the USRID-16W can be plugged straight into a computer's USB port and generates a PDF file, which can be accessed using PDF software such as Acrobat Reader. For further analysis, data can be downloaded using the free companion software LogTag® Analyzer, where you can display data in chart, list or summary formats.

Required Equipment

Aside from the LogTag® USRID-16W Single-use WHO PQS Pre-Qualified USB PDF Electronic 40-day Shipping Indicator you will need the following items:

- a PC running Windows 7 SP1 or later and LogTag® Analyzer installed if you wish to configure or download the indicator
- a PC with PDF reader software installed for viewing the generated PDF files

What's in the Box

- USRID-16W
- Waterproof backing card
- 6-language instruction booklet

Features

The USRID-16W Single-use USB PDF temperature indicators feature the familiar LogTag case layout with an additional USB plug at the bottom.

Case

- Mounting lug for secure fastening of indicator to fixtures
- USB plug with protective cap - shields USB connector from moisture and dirt
- Temperature sensor located inside case
- Durable polycarbonate case, IP65

Buttons

- **START/Mark** button (⟲)

  This is used to start the unit and place an inspection mark in the data.
- **STOP/Review** button (⟲)

  This is used to review recorded data at the end of the trip directly on the display and to stop the unit.

Display

- Shows the last recorded temperature and information about alerts
- Allows reviewing statistical data about the current trip
- Shows trip duration and recording status

PDF

The USRID-16W 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. A CSV file of the data list is also available.

The PDF can be shown in several different languages:

- English
- French
- German
- Russian
- Spanish

The default ex-factory language is English. You can select which language to use during configuration in the File Settings tab.

> ⚠ You can only change the language during configuration, but not when viewing the PDF.

Software Requirements

Software requirements vary depending on the type of file you want the USRID-16W to generate when plugged into a USB port.

If you wish to configure USRID-16W products you will need to download the LogTag® Analyzer software from the LogTag® web site at https://logtagrecorders.com/software/lta3/download/. Follow the instructions to install and start the software.

> ⚠ Please note that the USRID-16W is fully configured ex-factory, ready to start. Only a limited number of parameters can be configured, for which you will need this software.

If you only plan to view a report, plug the USRID-16W into a computer's USB port. Depending on the settings made during configuration, a number of on-board files will be generated[1] and made available to you in a new drive:

- a PDF file

  you can open the file directly from the indicator's USB memory storage with Acrobat Reader 4.0 or later, or any other compatible PDF reader software of your choice[2]
- a CSV file

  this file can be imported into a spreadsheet program such as Microsoft Excel
- an LTD file

  LTD files are LogTag® Analyzer's native, encrypted data files. You can open this file in LogTag® Analyzer, where you can analyze data in detail, generate report files or combine data from multiple recorders for comparison

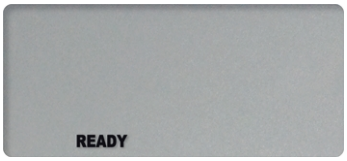
You can also download data directly into LogTag® Analyzer without accessing the indicator's on-board files.

1 Depending on the configuration, the USRID-16W may produce all, some or none of the files.
2 PDF files generated by any USB indicator can be opened directly in LogTag® Analyzer.

Configuring the USRID-16W for logging

Each USRID-16W model is delivered to you pre-configured with the prescribed WHO recording profile, ready to be started.

The display is off. Briefly pressing the **STOP/Review** button shows:



Although the indicator is already configured, you can make a limited number of adjustments to the configuration. These include:

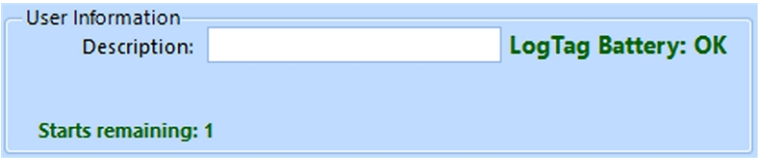
- Adding a description, which will show on the PDF report
- Changing the appearance of the PDF report
- Changing the language in which the PDF report will be printed
- Selecting which files are generated at the end of the trip

This is done using LogTag® Analyzer software, which can also be used for downloading and analyzing data, using the following steps:

- Start the LogTag® Analyzer software.
- Remove the protective cap from the indicator's USB connector, plug it into a USB socket on your computer and wait for the drivers to be installed[3].
- From the menu click **LogTag - Configure**; LogTag® Analyzer will display the configuration options for connected indicators.

Standard Configuration Options

The only parameter in the standard configuration options you are permitted to customize is the Description.



All other parameters are preset to the requirements of the WHO for shipping indicators:

Start Option: Push Button

Number of days to record: 40

Recording Interval: 5 minutes

Start delay: 1 hour

3 You can configure more than one USRID-16W at the same time, however it is practical to limit the number of units to about 6, using a powered USB hub.

Alarms

Configuring alarms for WHO PQS pre-qualified USRID-16W models is not permitted. The alarm trigger requirements are set out in the WHO/PQS/E006/TR07 PQS performance specification for Electronic Shipping Indicators. Each indicator is configured with 3 different alarm trigger conditions for temperature.
Alarm trigger conditions consist of a threshold temperature value, an activation type (which can be instant, consecutive or accumulative) and a delay time. If an alarm trigger condition requires readings to exceed an upper threshold temperature it is called an ***upper alarm***. If an alarm trigger condition requires readings to go below lower thresholds it is called a ***lower alarm***.

An alarm event is generated, when at least one of the alarm conditions is triggered. The threshold values themselves are included in the alarm range, i.e. if an upper alarm threshold is set at +30.0 °C, a value of +30.0 °C will trigger an alarm, but a value of 29.9 °C will not.
According to the PQS specification, alarms are triggered for different models as follows:

Type A/B (Model USRID-16WA/B, formerly Type 2)

Programmed with alarm settings suitable for the international shipment of OPV, BCG,Hib lyophilized, influenza seasonal (lyophilized),JE lyophilized, measles, MR, MMR, meningococcal A, meningococcal ACYW 135 (lyophilized), rabies (lyophilized), rotavirus (Bharat liquid and lyophilized – other than RotaTeq®), rubella, varicella and yellow fever vaccines vaccines.

- Upper Alarm
  Consecutive Readings of 45 °C or above for 1 hour (single event)
- Upper Alarm
  Accumulative Readings of 30 °C or above for a total of 10 hours
- Upper Alarm
  Accumulative Readings of 10 °C or above for a total of 20 hours

Type C (Model USRID-16WC, formerly Type 1)

Programmed with alarm settings suitable for the international shipment of DTP, DT, DTP-HepB-Hib,Hib (liquid),HepA, HepB, HPV,Influenza seasonal (liquid),IPV, JE (liquid), Meningococcal ACYW-135 (liquid), Rabies, TT, Td, OCV,PCV (other than Prevnar) and RV (liquid and other than Bharat liquid) vaccines.

- Upper Alarm
  Consecutive Readings of 45 °C or above for 1 hour (single event)
- Upper Alarm
  Accumulative Readings of 30 °C or above for a total of 10 hours

- Lower Alarm
  Consecutive Readings of -0.5 °C or below for 1 hour (single event)

An alarm event is generated, when either of the entered alarm conditions is triggered.

> ⚠ Note that the type of vaccines approved for each of the indicators is constantly amended, so please check for any updates in the "Guidelines on the international packaging and shipping of vaccines", published by the World Health Organization.

Advanced Configuration Settings

Configuring advanced settings typically available in other indicator models is not permitted for USRID-16W WHO pre-qualified models.
Following options are preset and cannot be changed.

- The "Paused" function is disabled.
- The display is always switched off after 30 seconds until the indicator is started. Once started, the display remains permanently on.
- Resetting the trip's minimum and maximum values on the display during recording is not permitted.
- Clearing and resetting alarms with the **START/Mark** button is not permitted.
- Alarms always remain turned on, even if readings return to the normal temperature range again.
- Users have the ability to stop the indicator with the **STOP/Review** button.

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

File Settings

Click the **File Settings** tab, select which files are generated when the USRID-16W is plugged into a computer's USB port, and what information these files contain. Select as many file formats as you wish to generate.

Please note that the USRID-16W pre-qualified models will only display temperatures in °C, are always reporting times in UTC and always produce a PDF file. These settings cannot be changed.

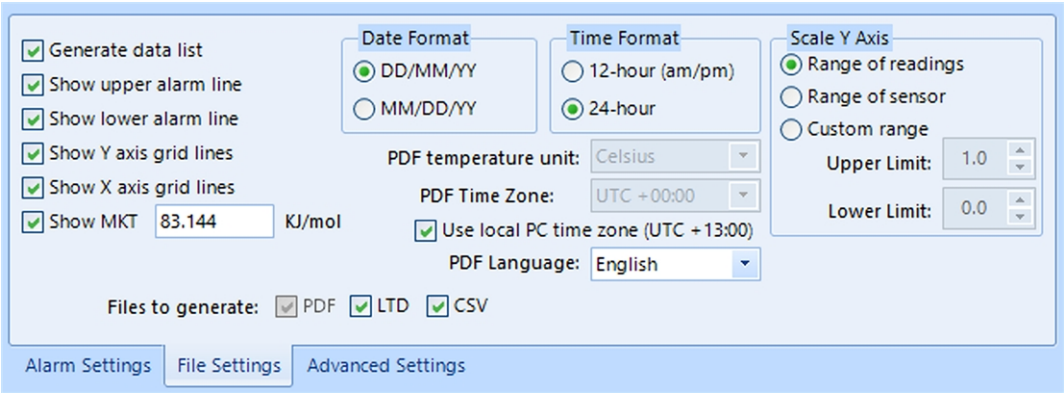


Figure 1: *USRID-16W File settings screen in LogTag® Analyzer 3*

These parameters influence the appearance of all files:

- Date and time format
- 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
- Display language
- 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.

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

Finalizing the configuration

Click Configure to upload the configuration data to the USRID-16W.

When the configuration is complete, unplug the USRID-16W from the USB socket and replace the protective cap.

If you wish to configure more USRID-16W units with the same configuration, insert the next indicators into USB sockets, wait until they are ready for configuration and click Repeat Configure.

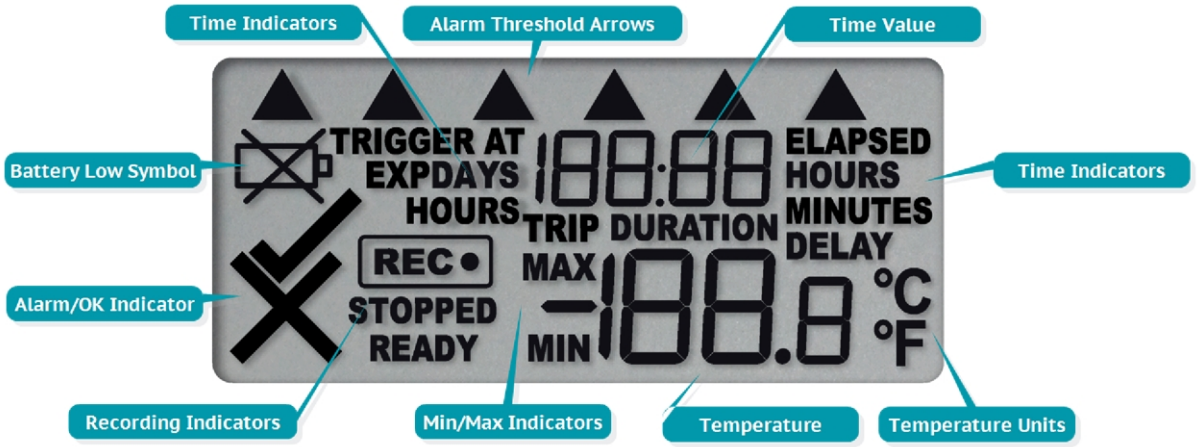
You can upload the configuration to a USRID-16W indicator as often as required, however once started the unit cannot be configured again.

USRID-16W Start Options

USRID-16W pre-qualified models are pre-configured for a push button start with a 1-hour start delay. After you have gone through a specific start sequence of pressing and releasing the **START/Mark** button (see Starting the Indicator on page 17), a 1-hour countdown timer starts, during which no temperature readings will be recorded. The indicator will start recording and displaying temperature readings once the timer has ended.

Pre-start readings are not enabled.

Display Overview



ALARM/OK indicator

The ✕ symbol is shown as soon as the USRID-16W has registered an alarm event. While there are no alarms, or if a previous alarm has been cleared, the ✓ symbol is shown.

Recording indicators

The recording indicators show what the USRID-16W is currently recording:

- If **READY** is shown, the USRID-16W is ready to be started with the **START/Mark** button.
- If the word **DELAY** is shown, the indicator was started with a start delay, and the delay is active.

  The time in hours and minutes until the start is also shown.
- If **REC●** is shown, the USRID-16W is recording temperature at the sample interval defined.
- If the word **STOPPED** is shown, the USRID-16W has finished recording temperature data.

MIN/MAX indicator

The word **MAX** is shown when the temperature on the display represents the maximum recorded temperature for the current trip. The word **MIN** is shown when the temperature on the display represents the minimum recorded temperature for the current trip.

Temperature Units

For USRID-16W pre-qualified models, this always shows °C.

Temperature Value

This shows the most recently recorded temperature while the USRID-16W is recording. Once the indicator has stopped, nothing will be displayed. During review, this will show minimum or maximum temperatures. It will also show the threshold values when reviewing triggered alarms.

Time Value and Time Indicators

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

- The elapsed time since the start of the trip
- The trigger time of an alarm
- The time remaining until the indicator starts recording (for a delayed start)

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

- If **TRIP DURATION** is shown, the time value represents the elapsed time since the start of the trip.
- If **ELAPSED** is shown (typically paired with **TRIGGER AT**), the time value represents the time that elapsed between the start of the trip and the occurrence of an alarm.
- If **DELAY** is shown, the time value represents a start delay, or the time remaining until a date/time start will occur.
- If **DAYS** and **HOURS** is shown, the time value represents the number of elapsed days and hours.
- If **HOURS** and **MINUTES** is shown, the time value represents the number of elapsed hours and minutes.

The word boot appears in place of the clock if new firmware is being uploaded to the USRID-16W.

The word USb appears when the unit is plugged into a USB port.

Alarm Threshold Arrows

An up-arrow (▲) is shown for each triggered alarm threshold. The arrows point to the corresponding alarm value on the label and can represent an upper or lower alarm.

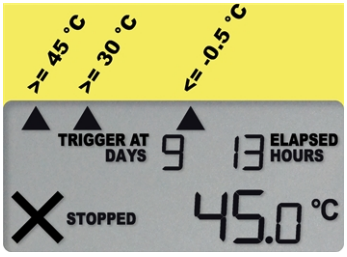


Figure 2: Alarm arrows pointing to the alarm labels

Battery Low

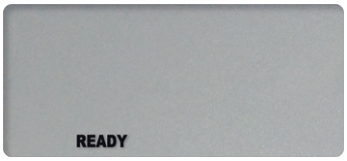
The battery low symbol will appear if the USRID-16W's battery is low. If the symbol is not shown while the display is turned on, the battery is still OK.

Operating the Indicator

The following sections show how to operate the product, and what information you can expect to see on the display.

After the Indicator is configured

The USRID-16W is pre-configured for a push button start, and the word **READY** is shown.



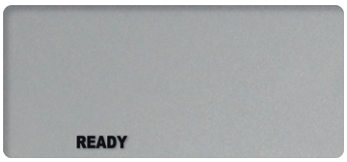
Low Battery

If at any time during the operation the indicator has a low battery, the low battery symbol is shown.

A indicator with a low battery cannot be started and must be discarded.

Starting the Indicator

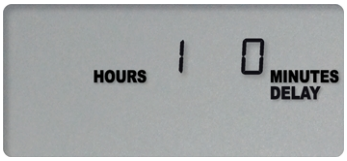
The indicator's display must show **READY** for it to be started.



Press and hold the **START/Mark** button. **READY** turns off, and the REC● symbol starts flashing:

Once the REC● symbol remains permanently on (after approx 5 seconds), release the button within two seconds.

The REC● symbol turns off, and the USRID-16W starts the 1-hour countdown timer.



The delay time is shown in hours and minutes. The time counts down and the USRID-16W starts recording when it reaches 0 00.

The indicator will ***not*** start

- if you release the button while the REC● symbol is still flashing; or
- if you keep holding the button for more than 2 seconds after the REC● symbol remains permanently on.

During Recording

> ⚠ Please study the following sections carefully. Much of the functionality of the USRID-16W indicator differs from our USB temperature logger models! It is, for example, not possible to review alarms while the product is still recording temperatures.

During normal operation, the display shows the most recently recorded temperature. The elapsed time since the start of the trip is also displayed - in hours and minutes for the first 24 hours, and in days and hours thereafter. A tick symbol ✓ is shown as long as no alarm event has occurred.

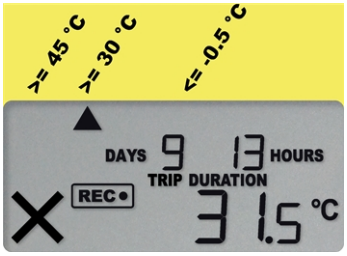
Temperatures are shown in Celsius.

> ⚠ The temperature unit on the display is the same as used for the PDF and CSV files. For USRID-16W pre-qualified indicators, this is pre-set to °C in the factory.

An alarm was triggered

If an alarm event occurred, the alarm indicator ✕ is displayed in the bottom left corner, as shown.

Additionally, one or more of the alarm threshold arrows (▲) indicate, which of the alarms were triggered.



Marking a reading with an inspection mark

When you press the **START/Mark** button while the USRID-16W is recording, the next reading taken will be identified in the downloaded data and on the PDF report with an inspection mark.

Power Save

For USRID-16W indicators, Power Save is enabled until the device is started. The display automatically switches off if none of the buttons have been pressed for 30 seconds.

Pressing either button briefly will switch the display on, and show **READY**, indicating the product is ready to start. It will show the Battery Empty symbol (), if the battery is low.

As soon as the device has been started, the display remains permanently switched on, even when the device has finished recording temperatures.

Battery Low while recording

If the battery is low while the USRID-16W is still recording, the battery low symbol is shown in addition to any other currently displayed information.

At this stage, the product typically has sufficient battery capacity left to finish the trip that was started, however, the length of storage once the product has stopped may be affected.

Stopping the USRID-16W

Automatically

The USRID-16W automatically stops recording temperature when the maximum number of readings specified during configuration has been reached.

For USRID-16W pre-qualified products this covers a duration of exactly 40 days.

Manually

The USRID-16W is configured so it can be stopped with the **STOP/Review** button. Manually stopping it ensures statistics are not falsified with readings taken after the shipment completion. The stop function is automatically enabled for this product during configuration.

Press and hold the **STOP/Review** button. REC immediately disappears, and the **STOPPED** symbol blinks for 4 seconds.

The symbol then shows permanently for 2 seconds. Release the button and the indicator stops taking temperature readings.

If the button is released while **STOPPED** is still blinkingon, or you wait until **STOPPED** disappears, the display shows REC again, and the indicator continues to record data. In this case, an inspection mark will be recorded in the data against the next temperature reading.

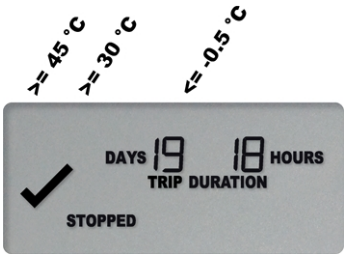
Indicator has stopped

Once the indicator has stopped, the display will show:

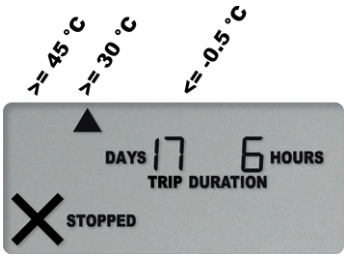
- the **STOPPED** symbol;
- the OK indicator (✓) if no alarm was recorded;
- the total duration for which the indicator recorded data;
- the alarm indicator (✕) and one or more threshold arrows if an alarm was recorded during the trip;
- the battery low symbol (⌧) if the battery is low.

The indicator does not show a temperature reading.

This is shown if the indicator has stopped, and no alarms were recorded during the trip.



Here, the indicator has stopped, and an upper alarm was recorded during the trip.



During the delay countdown the indicator cannot be stopped.

Reviewing Min/Max values and Alarms

> ⚠ Unlike many other loggers from LogTag North America, alarm trigger details and min/max records cannot be reviewed while the USRID-16W indicator is still recording.

Once the indicator has stopped and is not plugged into a USB port, you can review the recorded minimum and maximum temperature readings and alarm trigger events using the **STOP/Review** button.

To initiate the review process, briefly press the **STOP/Review** button. After each additional press of the **STOP/Review** button, the next review screen is shown.

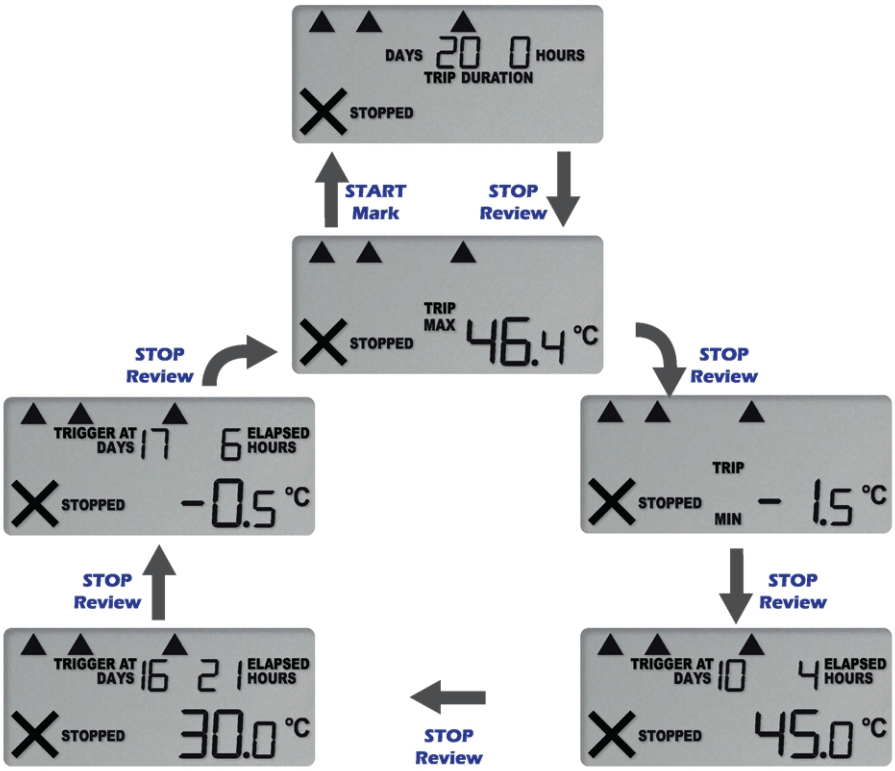


Figure 3: Review cycle

During the review, the alarm cross (×) and the alarm threshold markers (▲) continue to be displayed.

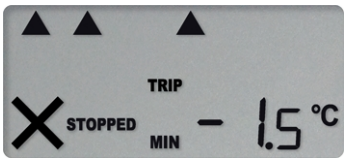
You can exit the review screens at any time by pressing **START/Mark** button or by waiting 30 seconds without pressing any button.

The standard stopped screen will be shown.

After the first button press, the highest recorded temperature during the trip is shown, indicated by **TRIP MAX**.

The example screen shows that the highest recorded temperature was 46.4 °C.

Pressing **STOP/Review** for a second time will show the lowest recorded temperature during the trip, indicated by **TRIP MIN**.



The example screen shows that the minimum temperature recorded was -1.5 °C.

Pressing **STOP/Review** again will show up to 3 more screens, one for each of the configured alarm trigger conditions. A screen for a specific alarm condition will only be shown if an alarm was triggered by this threshold. If none of the alarms were triggered during the trip, only the MIN and MAX screens are shown.

For each of the triggered alarms, its threshold value will be shown, and how far into the trip the alarm for this threshold triggered. The alarm screens will be shown in descending order, starting with the upper most alarm threshold.

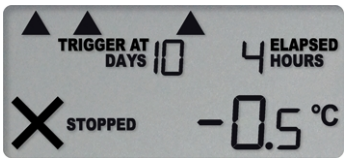
In this example, all three alarms triggered, so all three additional screens are shown.

The first of the alarm screens shows the uppermost alarm threshold, and the time that elapsed between the start of the trip and the time the alarm was triggered.

In the example, the temperatures were equal/above +45 °C for one complete hour, and the alarm was triggered 17 days and 6 hours into the trip.

The second alarm screen shows the next threshold. In the example, the temperatures were equal/above +30 °C for a total of 10 hours, and the alarm was triggered 16 days and 21 hours into the trip.

The third alarm screen shows the lowest triggered threshold. In the example, the temperatures were equal/below -0.5 °C for one complete hour, and the alarm was triggered 10 days and 4 hours into the trip.



Pressing **STOP/Review** again starts the review cycle again with the MAX screen.

Plugging the USRID-16W into a USB port

As soon as you plug the USRID-16W into a USB port, the word USb appears.

If you have configured the indicator to generate files, USb remains turned on until all files have been generated.

As soon as the file generation is finished, USb will blink every second to indicate these files can now be accessed.

> ⚠ The files are generated each time you plug the indicator into the USB port, regardless of whether the indicator is still recording readings or not.

What happens on your computer depends on the operating system of the computer, the settings made during configuration and whether or not LogTag® Analyzer is running.

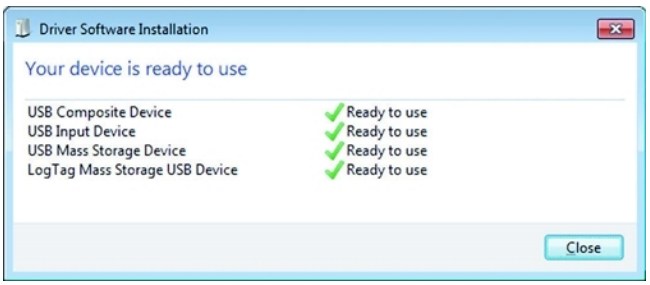
Microsoft Windows

Up to four drivers will now be installed, depending on the USRID-16W's configuration. All drivers are part of the operating system and will typically not require administrator privileges for your computer.

1. Mass Storage Device
2. LogTag Mass Storage USB Device

   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 USRID-16W does not generate files.
3. USB Input Device (HID)

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



macOS 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 USRID-16W using either of these

operating systems, unless you use virtualization software such as Parallels, Fusion or VirtualBox to create a hosted Windows environment. You need to discuss these options with your network administrator.

> ⚠ While a USRID-16W is plugged into USB, no temperature readings are taken. The graph will display a gap and the data list will show `---` followed by the `#` symbol.

Accessing the files

If the indicator 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 USRID-16W. 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. 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. 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 a single file with the *.csv extension. CSV files can be opened with a text editor, or imported into a spreadsheet program such as Microsoft® Excel.

> ⚠ To retain the indicator-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 indicator is retained. Each time you plug the USRID-16W 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

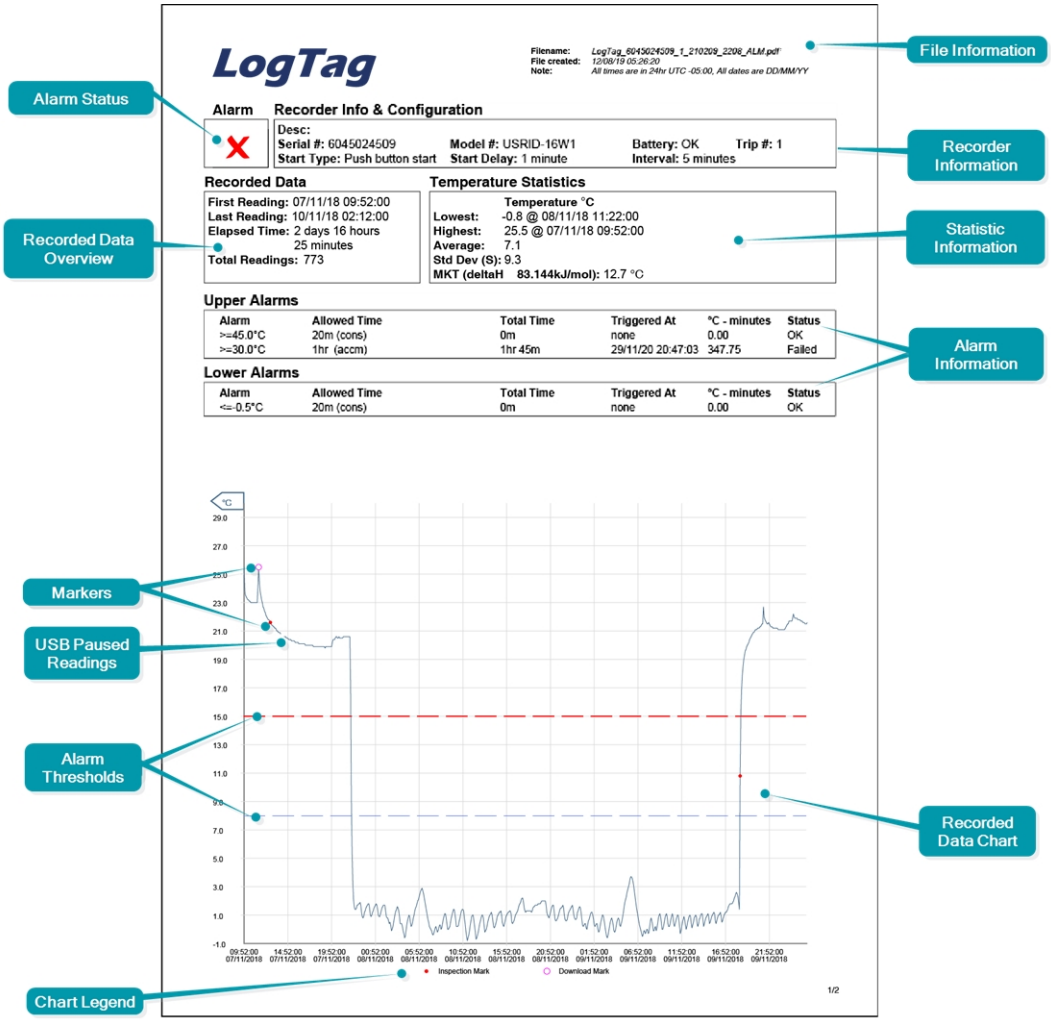


Figure 4: Sample report page

Data Evaluation - Report

Alarm Status

This shows at a glance if the USRID-16W recorded alarm conditions 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 indicator started to record data, when it finished, how many readings were recorded and how long that took.

Markers

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

- A ° symbol will be shown, if the USRID-16W was downloaded with LogTag® Analyzer.
- A • symbol will be shown if an inspection mark was placed with the **START/Mark** button.
- A • symbol will be shown where the indicator was plugged into a USB port at the time it would otherwise have taken a reading.

USB Paused Readings

USB indicators cannot take a reading while plugged into a USB port. A gap is shown in the graph where the USRID-16W was plugged in at the time it would otherwise have taken a reading. The list shows --- instead of the reading.

Legend

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

Indicator 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.

Recorded Data Chart

The chart shows a graphical representation of the data during the trip. As part of the USRID-16W configuration process you set the parameters that influence how the chart is presented.

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.

Indicator Information and Configuration

This section shows general information such as serial number, model number, trip number, battery status and description. It shows how the indicator was started, if a start delay was active and the interval used for taking readings.

Temperature Alarms

This section summarizes the alarm trigger conditions and occurrences during the trip, including:

- Direction (whether it is an upper or lower alarm)
- 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
- The elapsed time after which the alarm was first triggered

Alarm Thresholds

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

Data Evaluation - Data List

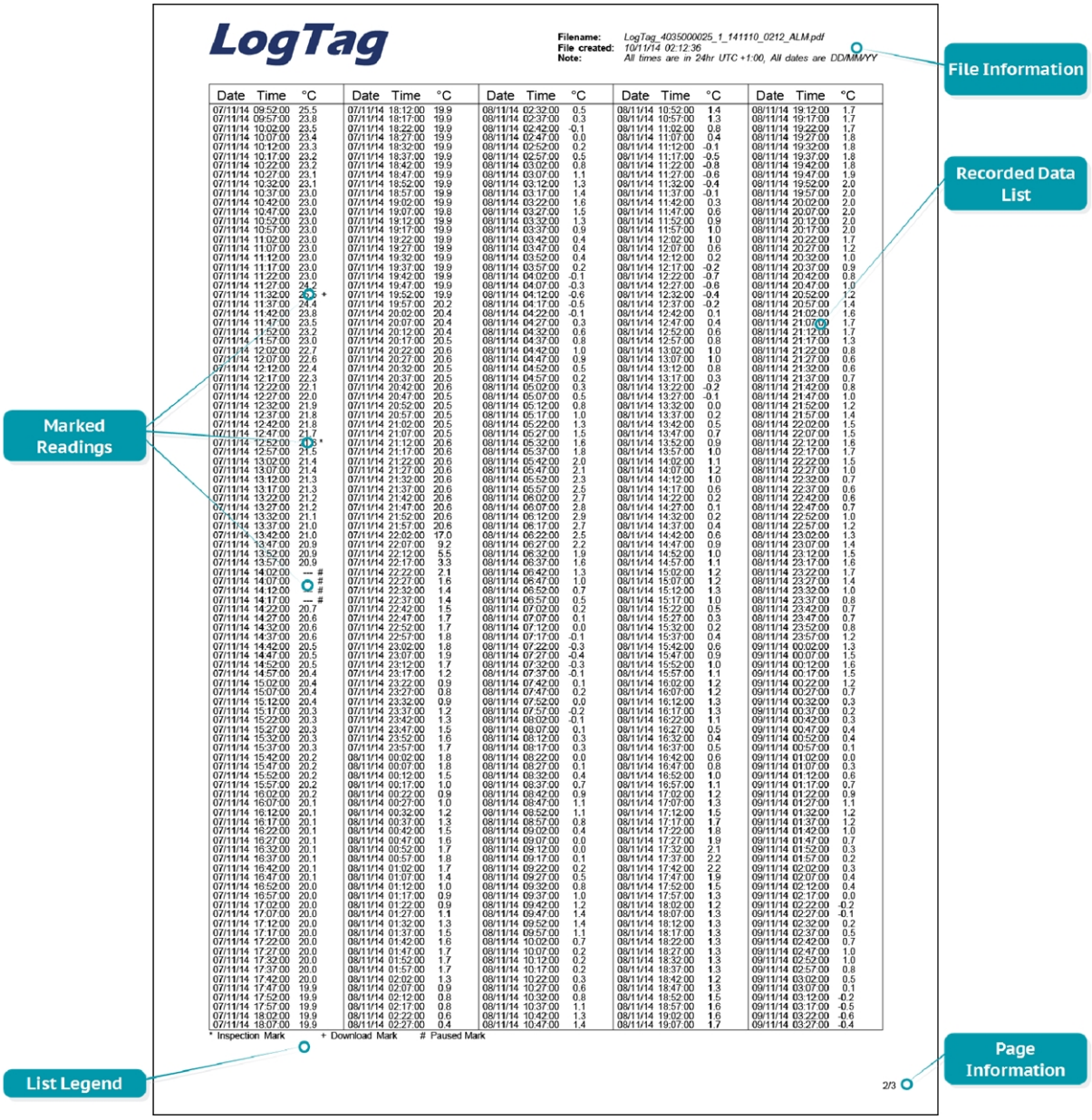


Figure 5: Sample Data List

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.

Recorded Data list

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

Page information

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

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 USRID-16W was downloaded with LogTag® Analyzer.
- A ***** symbol will be shown if an inspection mark was placed with the **START/Mark** button.
- A **#** symbol will be shown where the indicator was plugged into a USB port at the time it would otherwise have taken a reading.

Symbols are shown against the reading following the event.

USB Paused Readings

USB indicators cannot take a reading while plugged into a USB port. A gap is shown in the graph where the USRID-16W was plugged in at the time it would otherwise have taken a reading. The list shows **---** instead of the reading.

Legend

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

Technical Specifications

Model Number	USRID-16WA/B, USRID-16WC
Temperature sensor measurement range	-30 °C to +60 °C (-22 °F to +140 °F)
Operating temperature range	-30 °C to +60 °C (-22 °F to +140 °F)
Ambient temperature range during transport and storage	-30 °C to +55 °C (-22 °F to +131 °F)
Ambient humidity range during transport and use	0 to 95 %RH
Rated temperature resolution	0.1 °C (0.1 °F) across entire range
Rated temperature accuracy	Better than ±0.5 °C (±0.9 °F) for -20 °C to +40 °C (-4 °F to 104 °F) Better than ±0.7 °C (±1.3 °F) for -30 °C to -20 °C (-22 °F to -4 °F) Better than ±0.7 °C (±1.3 °F) for +40 °C to +60 °C (104 °F to 140 °F)
Sensor type	Precision electronic thermistor
Sensor reaction time	Typically less than 7 minutes (T90) in moving air (1m/s), method as detailed in EN12830:2018
Clock accuracy	Quartz crystal-locked real time clock, typical accuracy ±25ppm @ 25 °C (equiv to 2.5 seconds/day) Typical temperature coefficient is -0.034±0.006ppm/°C (i.e. typically +/- 0.00294seconds/day/°C)
Recording capacity	11,520 real time temperature values USRID-16WA/B, USRID-16WC: • Factory-preset to 40 days @ 5 min logging (11,520 readings)
Statistics memory	Display of trip min/max values First occurrence for each triggered alarm threshold
Memory type	Non volatile
Sampling interval	USRID-16WA/B, USRID-16WC: • Factory-preset to 5 Minutes
Start options	USRID-16WA/B, USRID-16WC: • Factory-preset to Push button start with 60 Minute start delay
Alarm functions	• OK tick and Alarm cross on display, linked to alarms • Alarm arrows linked to thresholds USRID-16WA/B: • Preset Alarms (cannot be changed by the customer) >= 45 °C single event 1 hour >= 30 °C cumulative exposure 10 hours >= 10 °C single event 20 hours USRID-16WC: • Preset Alarms (cannot be changed by the customer) >= 45 °C single event 1 hour >= 30 °C cumulative exposure 10 hours <= -0.5 °C single event 1 hour
Vibration	Withstands vibration specification as detailed in EN12830:2018
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 directives (CISPR 11: 2009 + A1: 2010, IEC 61000-4-3:2010, IEC 61000-4-4:2012, IEC 61000-4-6:2008) • RTCA DO-160G:2010, section 21 • Includes electrostatic discharge as prescribed in IEC 61000-4-2:2008 • Complies with FCC Part 15 Subparts A and B • functionality of product unaffected by intense electrical storm activity
Environmental	IEC 60529: IP65 with USB cap fitted Fits into IP67 Protective Enclosure 200-000020
Case material	Polycarbonate

Power source	CR2032 3V Li-MnO_2 coin cell, non-rechargeable, non-replaceable
Battery life	Minimum 18 months of storage before 'start', followed by 40 day recording trip, followed by 6 months of on-device accessibility[4] after 'stop' (data can be accessed for the life of the product when USB powered). Minimum 18 months of storage before 'start', followed by 6 months of recording Battery low indicator Battery life based on: • 5 minute logging • statistics reviewed on the display no more than once daily once the unit has stopped, for no longer than 30 seconds each time • display activation no more than once a day for battery check • keeping theindicator within the storage temperature range when not in use
Size	93mm(H) x 54.5mm (W) x 8.6mm (T) including USB cap
Weight	39g
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 • Multi page report with list of readings including date/time
Download time	• Typically with full memory (11,520 readings) 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 3.1r10 or later to configure and download • PDF reader software to access onboard PDF files
USB compatibility	USB 2.0, type A plug
Warranty	12 months
Serviceability, disposal and recycling	This device contains no serviceable parts, please recycle or dispose according to local regulations
Accessories	• Wall holder 200-000010 • IP67 Protective Enclosure 200-000020 • Replacement protective cap 200-000435

4 Longer storage before logging start may reduce accessibility of data after logging has stopped.

Appendix 1 - 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 humidiy 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 re-configured 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 humidiy value is equal to or above this value it is regarded to be an alarm reading.

Appendix 2 - Accuracy and Resolution

Temperature Accuracy

The following graph shows the typical rated temperature accuracy of a USRID-16W:

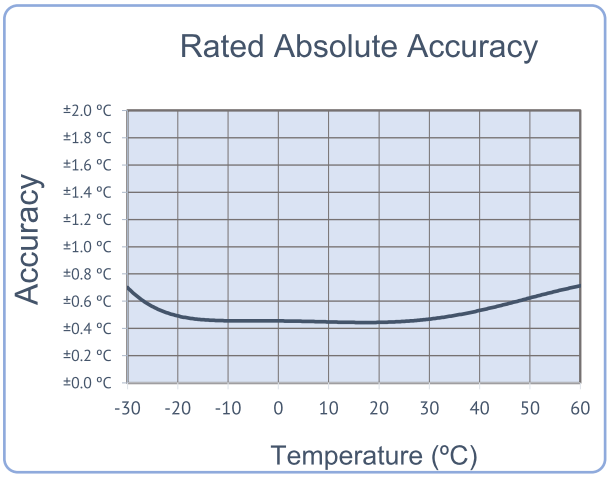


Figure 6: *Rated Temperature Accuracy Chart*

Temperature Resolution

The following graph shows the typical rated native temperature resolution of a USRID-16W:

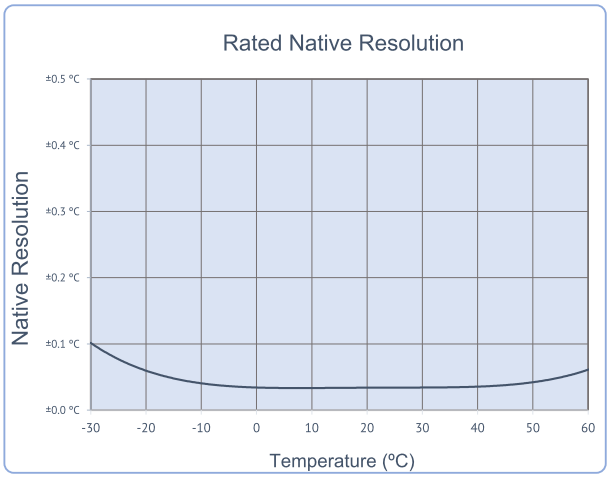


Figure 7: *Rated Temperature Resolution Chart*