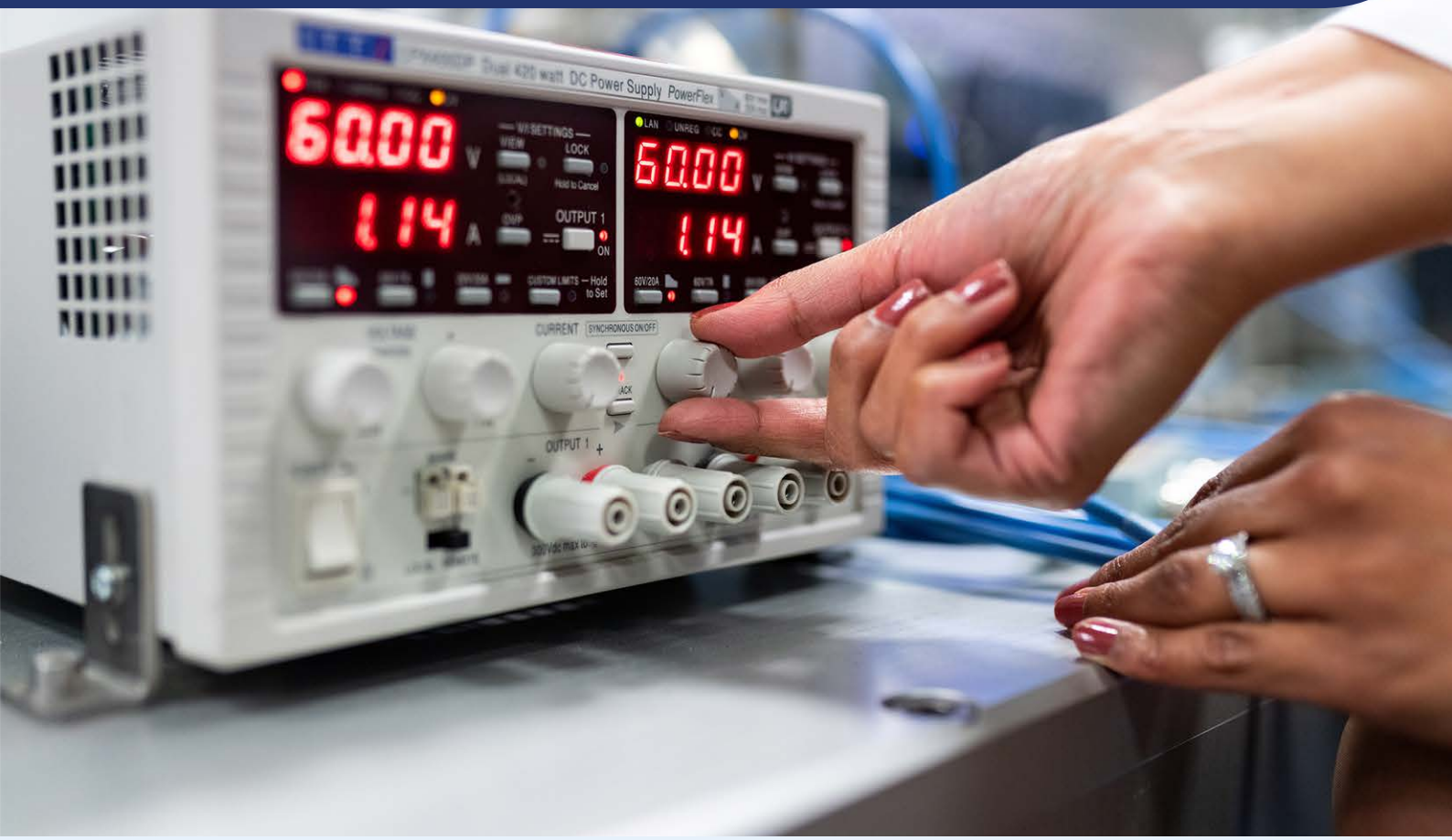

LogTag Calibrate

Calibration adjustment Software for LogTag Products

User Guide

Document Release Version: 1.12

Published December 8, 2025

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LogTag Calibrate is a utility that can perform calibration adjustment, allowing authorized users to manipulate data inside LogTag® Temperature and Humidity & Temperature loggers. As a consequence LogTag North America will release this utility only to distributors and selected end clients who are expected to be familiar with the standard practices used in Temperature and Humidity calibration. It is deemed extremely important that any person undertaking calibration has in depth knowledge about thermal and metrological conditions present during calibration as well as an understanding of their interaction and influence on the results.

If you have limited equipment, or are not familiar with what type of equipment is required to generate the stable environment needed, you should not install or use this software.

LogTag North America will not accept any liability for accuracy claims where LogTag® logger products have undergone any re-calibration process. All LogTag® products have standard published accuracy and resolution specifications, which they conform to when leaving the factory. All loggers can be re-set to these factory settings by using a special "Restore Factory Default Calibration" function. LogTag North America can identify any LogTag® with a calibration other than the factory calibration.

As part of the installation you will need to enter an authorization code in order to enable the use of this utility. This code is unique to your installation. You must not give this code to a third party under any circumstances, and you must not distribute LogTag Calibrate to a third party without express permission of LogTag North America. This code will be installed inside the LogTag® recorder products calibrated with your installation, allowing LogTag North America to trace the calibration back to the Lab where it was performed.

This user guide assumes the use of:

- LogTag Calibrate version 1.11 build 3
- LogTag Analyzer software v3.2 build 4 or later

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Last updated: July 21, 2023

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Introduction

LogTag Calibrate is a powerful Temperature and Humidity calibration adjustment tool. It allows laboratories to adjust the calibration of:

- HAXO-8
- TRIX-8, TRIX-16
- TREX-8
- SRIC-4
- SRIL-8
- TRIL-8
- TREL-8
- TRID30
- TRED30, TRED30-16R and TRED30-16CP
- TREL30-16 and TREL30-16CP
- All USB loggers
- CP100, CP110, CP10 and CP11 Smart Probes

The loggers or Smart Probes are typically subjected to a series of different stable environments while recording, after which each unit can have its calibration adjusted to match the reference instrument's readings. Please study this manual carefully, as some important features of the program are detailed here.

iSoTag, TIC20, TICT and vaxtag® products cannot be calibrated.

With the introduction of Smart Probes in version 1.10, several changes were introduced to this software. Please read this guide carefully to avoid adjusting incorrect parameters.

System Requirements

These are the minimum specifications for a computer intended to operate LogTag Calibrate:

- PC capable of running Windows 10 or later
- 10MB free disk space
- Internet Explorer 5.0 or later
- 1 available USB or serial port, depending on interface cradle used
- 1024 x 768, or higher, screen resolution.
- 256 screen colours

Recommended Specifications are as follows:

- Processor equivalent to Pentium IV or later
- 512MB of available RAM
- Internet Explorer 6.0 or later
- 65535 (16bit), or more, screen colours.

Installation

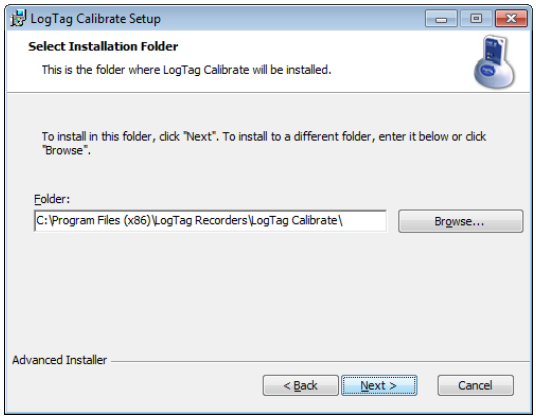
LogTag Calibrate is installed by executing the installation file (ltcalibrate_111r3.exe or similar). LogTag Calibrate is a restricted application not intended for general release to the public domain.

Once downloaded, install the software by double clicking the downloaded file.

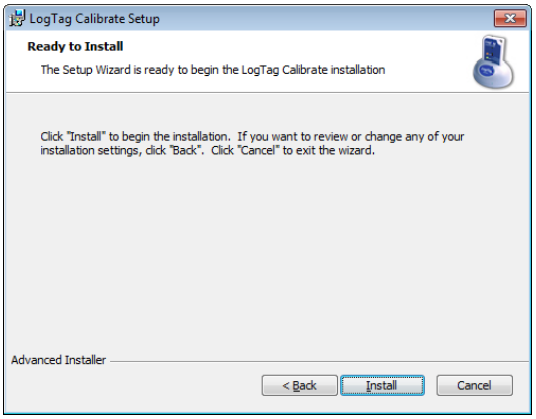
Note: All software is supplied as a single executable self installing file called "ltcalibrate_111r3.exe" or similar. You will need local administrator rights to install this software.

The installer will open and lead you through the installation. Click **Next** to start.

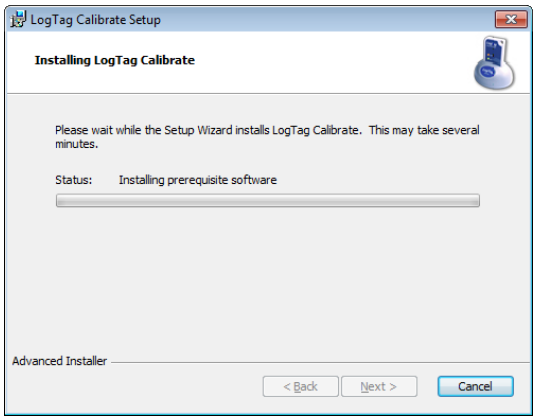
Accept the license. Click **Next** to continue



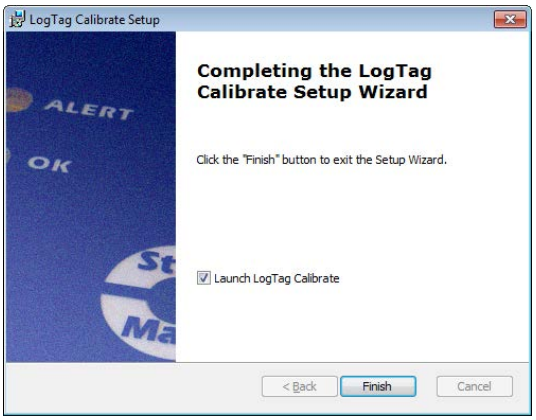
If needed, change the installation directory and click **Next**.



All required data are now available so the installation can be completed. Click **Install**.



The installer is now proceeding with the installation.

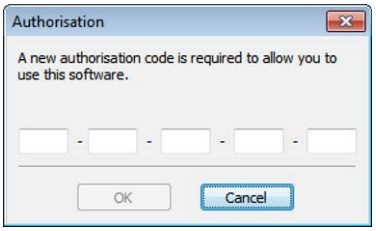


The installation is complete. Select "Launch LogTag Calibrate" if you wish to start the software immediately and click **Finish**.

If you are upgrading from an earlier version the screens displayed will look similar.

Using LogTag Calibrate

When you start LogTag Calibrate for the first time you will be prompted for an authorisation code, which is required to run the software.

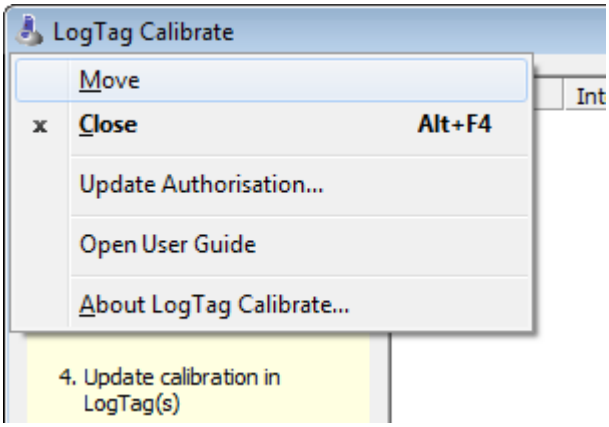


Once entered, LogTag Calibrate will not prompt again for a code unless the authorisation code expires or becomes corrupted.

LogTag North America will make this code available to approved users, who can demonstrate they have adequate capabilities to undertake instrument calibration. Typically, this will be restricted to laboratories with ISO17025 accreditation or an equivalent.

You can request the code by emailing to support@logtagrecorders.com. If your access to the application is approved, you will receive an email with the authorisation code, which is unique to the company for which it was issued. You will also receive a date on which the software expires.

To enter a new authorisation code, access the above dialogue through the system menu (which opens when clicking the system icon) and click on Update Authorisation.... You can also check for product upgrades and contact LogTag North America for assistance.



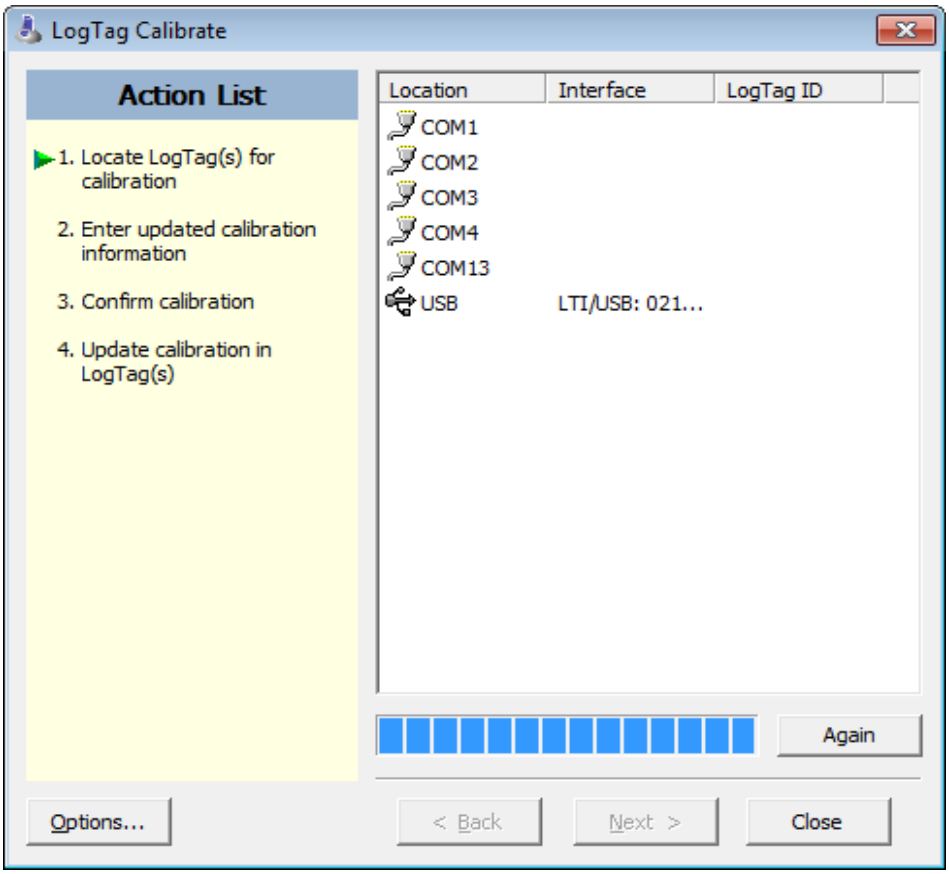
The next chapters describe how you can install new calibration information into a LogTag®. Before you do so you must familiarise yourself with the recommended calibration procedure as described in A Typical Calibration Run.

Locate and identify Window

LogTag Calibrate will scan all available communication ports for connected interfaces. The serial number of any connected USB interface is displayed to assist identifying multiple interfaces.

LogTag Calibrate can only communicate with one logger at a time. You can leave more than one LogTag® interface connected to your computer, but only one of them will be used for communication. To avoid confusion we recommend you unplug all interfaces but one.

If a USB logger is detected in one of the USB ports, USB interfaces are no longer interrogated for loggers.



If a supported LogTag® was found after start-up the software will immediately go to the next screen. If not, insert the LogTag® to be calibrated and press **Again**.

Warning !! TRIX-8/TREX-8 units that have been re-calibrated will only operate with LogTag Analyzer versions 1.5R13 or later.

HAXO-8 units that have been re-calibrated for temperature will only operate with LogTag Analyzer versions 1.7R1 or later.

TRID30 units that have been re-calibrated will only operate with LogTag Analyzer versions 2.1R1 or later.

Temperature Calibration

This section only applies to "temperature only" loggers, not to humidity loggers.

Technical Background

Temperature calibration adjustment is achieved by storing a look up table inside the LogTag® logger. This table contains up to 5 reference temperature readings, each paired with an adjustment value at that temperature. LogTag® Analyzer applies the correction values to the recordings stored inside the logger and displays the result as the calibrated readings. If a recorded temperature value (T_R) falls between two reference temperatures (T_A and T_B), the resulting adjustment value (C_R) is the linear interpolation between the two corresponding adjustment values (C_A and C_B) at the two closest reference temperatures.

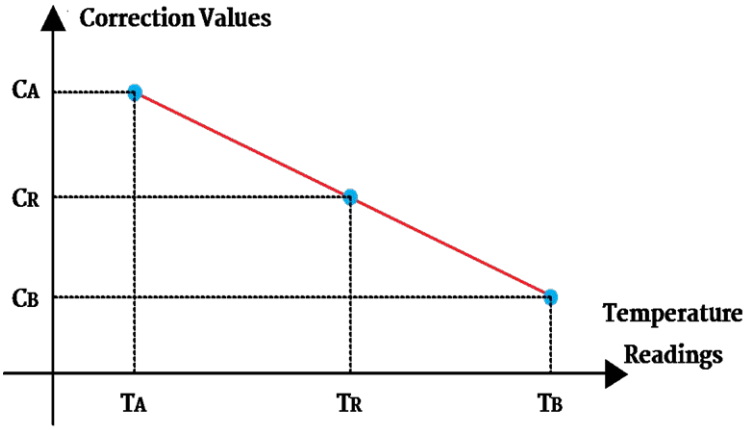


Figure 1: Temperature Calibration Curve

To make the input of values more user friendly the LogTag®s reading is entered into the software instead of the adjustment value, which is then calculated from the reference reading and the LogTag® reading.

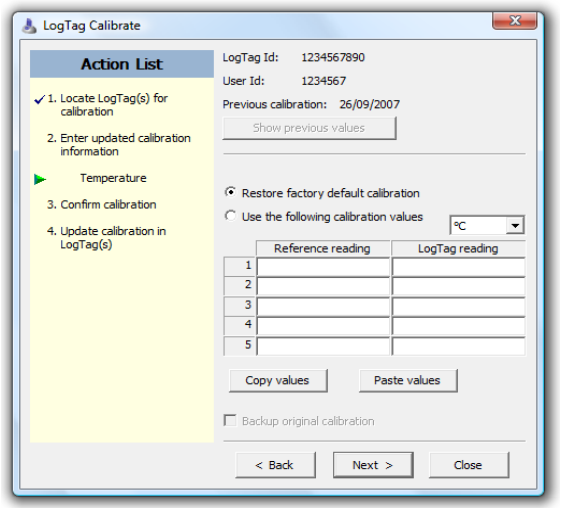
Two pairs of readings are automatically stored in addition to the 5 values above – these are the maximum and minimum readings the LogTag® can record, with an adjustment value of zero. No calibration can be entered that uses values above this maximum or below this minimum temperature.

If an adjustment table is uploaded to a product that can display readings without the need for a PC, values shown will already be adjusted.

This affects display logger products such as TRID30, TRED30, PTID30-7F and PTED30-7F as well as any USB loggers that can generate a PDF.

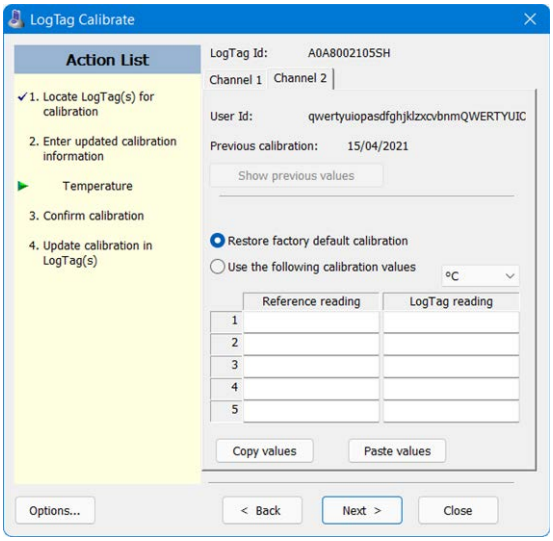
Process

When a "temperature only" LogTag® is found in the interface, the main temperature calibration screen is displayed.

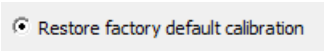


If an option cannot be selected, it is not available for this product.

For Dual-Channel loggers, two tabs can be selected, and adjustment values can be entered independently for each channel[1].

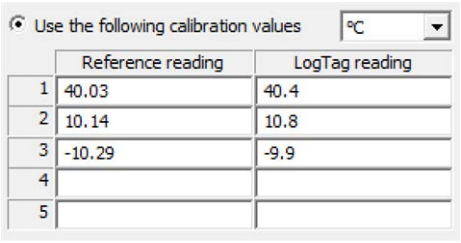


The dialogue window shows the serial number and the User ID of the LogTag® to be adjusted in the upper left. If the logger has previously been re-calibrated, the date of this calibration is also shown. If you cannot click the "Show previous values" button, the LogTag® contains the original factory calibration.



If you choose this option, the ex-factory calibration will be re-instated. In other words, any calibration table that has previously been stored inside the LogTag® will be deleted.

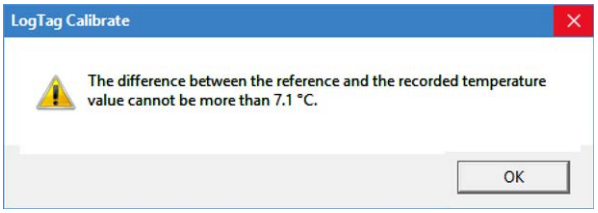
[1]Please note: If a Smart Probe is connected to CH1 of a dual-channel logger, the probe calibration screen will be shown, not the logger calibration screen! Please see Smart Probes on page 16.

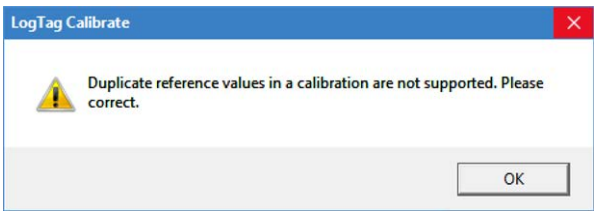


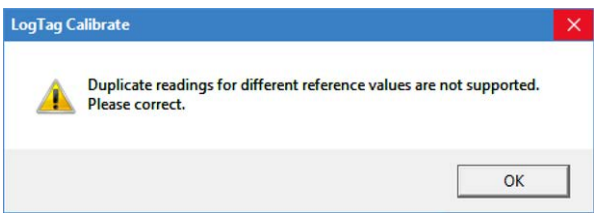
The pairs of reference and logger readings can be entered here. A typical calibration data set would be as displayed above. You can select the temperature unit in which this is done as ºC, ºF or K. The maximum allowed difference in readings between the reference and the logger is 7ºC/12.7ºF. This allowed difference may be less if a calibration is already installed. In practice, this value will be considerably smaller.

LogTag®logger products have a proven accuracy track record and generally have no discernible drift with age. If you encounter large differences between your reference instrument and the LogTag® in calibration please check the stability of the environment, the accuracy of the reference instruments and your setup. You may also need to restore the factory calibration and re-check the results of the calibration run before entering new data.

Warning messages will be displayed if attempts are made to input incorrect calibration value combinations, e.g. if you try to allocate the same reference reading to multiple logger readings or enter a value combination with a difference larger than allowed.





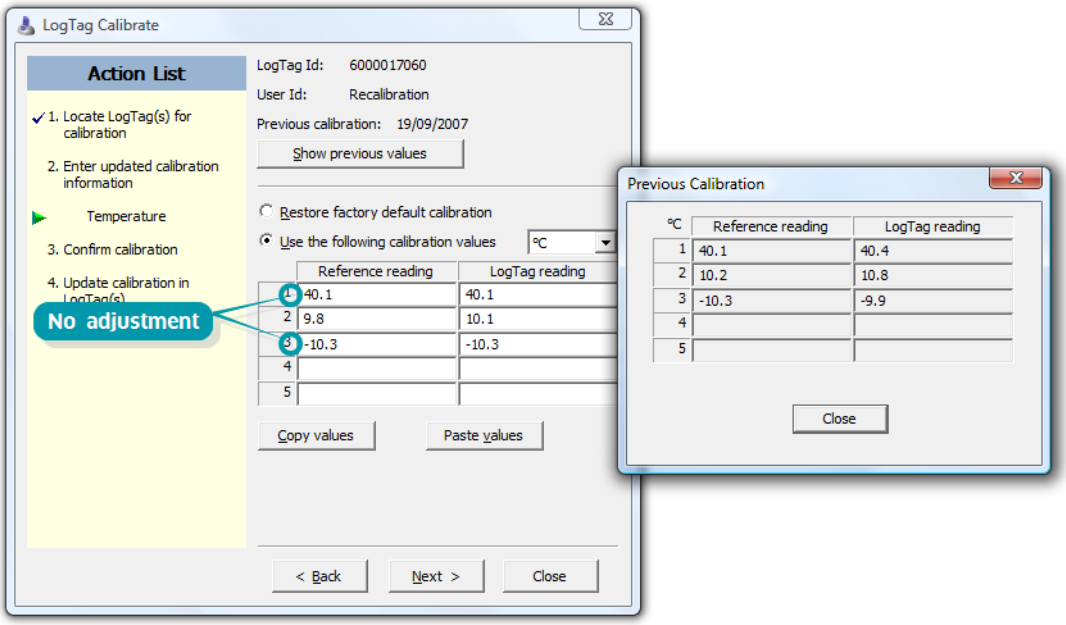


Tip: If you wish to calibrate a number of different LogTag® units, and the reference reading is the same for all of them, you can use the copy and paste function instead of

having to enter the values again for each logger. Please note these are not the usual CTRL-C and CTRL-V Windows clipboard functions, but internally stored values which will not be available on the clipboard outside LogTag Calibrate. You can access these on the keyboard through ALT-C and ALT-V, or click the buttons **Copy values** and **Paste values**.

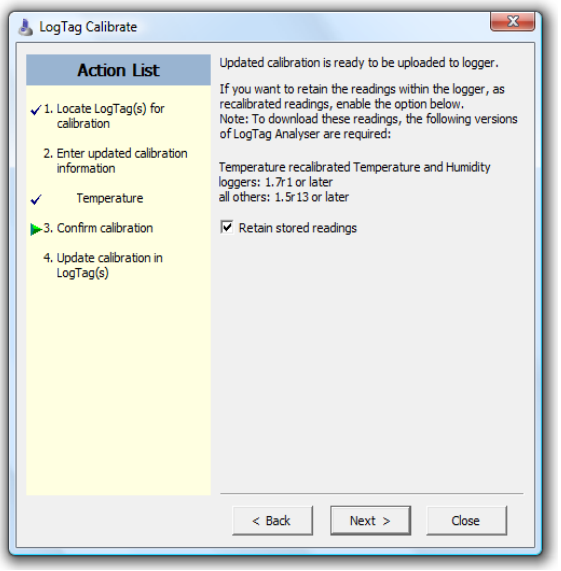
Please also note although all fields are copied and pasted, the LogTag®'s values are expected to be different for each different unit, so check them carefully before applying the calibration.

If your LogTag® has already been adjusted before, **Show previous values** is available for selection; when clicked, the currently installed calibration values will be displayed. This is often useful to track the accuracy of a unit over time.



Once you have entered the calibration adjustment table, click **Next** to continue.

This will bring up the "Confirm Calibration" Screen. If you do not wish the readings to be available in LogTag Calibrate after the calibration, remove the tick next to "Retain stored readings".



We strongly recommend you leave this box ticked and download the readings back into LogTag Calibrate for a before/after comparison[1].

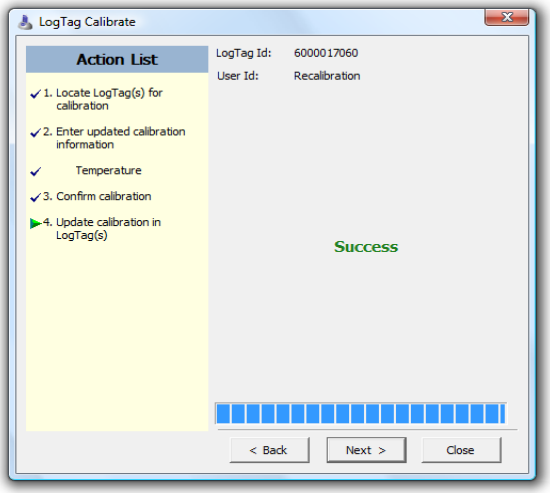
Please note that by installing the calibration certain restrictions apply regarding the version that can be used for configuring and downloading the logger. Please see Temperature Calibration and Earlier Versions of LogTag® Analyzer on page 31.

Click **Next** to install the calibration adjustment, or **Next** to return to the calibration entry screen.

Note: As soon as you press **Next** the LogTag® will stop logging.

After the calibration adjustment has been successfully uploaded to the LogTag®, you will see the message on the right.

Insert a new LogTag® for calibration update into the interface and click **Next** to continue.



[1] This feature is not available for Smart Probes and loggers supporting those.

Smart Probes

Starting with version 1.10, LogTag Calibrate supports adjusting the calibration of LogTag® Temperature Smart Probes. Each Smart Probe contains its own unique measurement circuit and calibration table, which is used for measuring temperature. Calibrated temperature data are then transmitted to the logger it is connected to. The logger acts only as a display and storage device, which requires no additional calibration[1].

For each different model of Smart Probe you must use the corresponding logger model, or you will not be able to adjust the probe. The logger is required, as it is used to facilitate communication between the software and the probe. When this process is performed as described, only the calibration data in the Smart Probe is adjusted, with the calibration data in the logger remaining untouched.

For a successful calibration run and subsequent adjustment, you must use one of the following combinations:

Smart Probe Model	Logger Model
CP100	UTRED30-WiFi or UTRED30-16
CP110	TRED30-16CP
CP10	UTREL30-16 or UTREL30-WiFi
CP11	TREL30-16CP

Any other combination will result in an error.

To calibrate CP100 or CP10 Smart Probes, you must connect it to the CH1 probe input of a dual-channel logger that supports operation with Smart Probes.

Although you can only adjust the probe currently attached to channel 1 of a dual-channel logger, you can still record both channels during the original calibration run. Do this as you would with analogue probes by enabling both channels during configuration, then adjust the probe in channel 1. Remove the probe in channel 1 and add the probe from channel 2 to the channel 1 input. Adjust channel 1 again, using the channel 2 data (which is for the probe now plugged into channel 1).

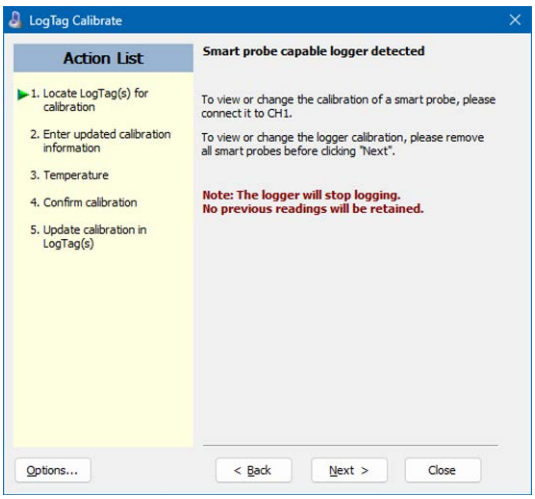
When adjusting CP110 or CP11 Smart Probes, the corresponding logger (TRED30-16CP or TREL30-16CP) must be used with an LTI-HID interface. A warning message will be displayed if using an older LTI USB interface, and you will not be able to proceed with the adjustment.

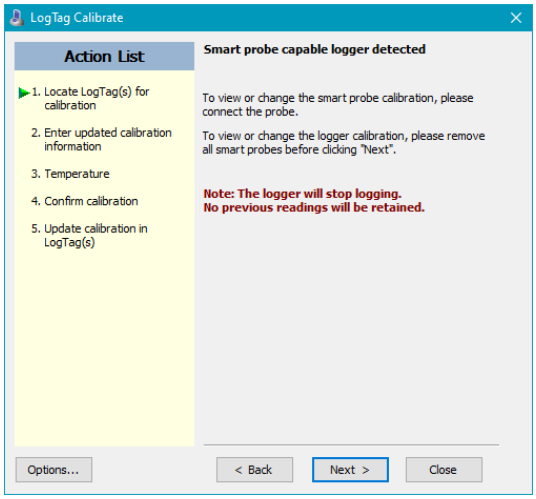
[1] This is only true if the logger is used with a Smart Probe (CPxxx models). If the logger is used with an Analogue Probe such as the STxxx models, the internal calibration table will still be used.

Adjustment Process

Please see the information provided in A Typical Calibration Run on page 27 as well as Important Hints on page 30.

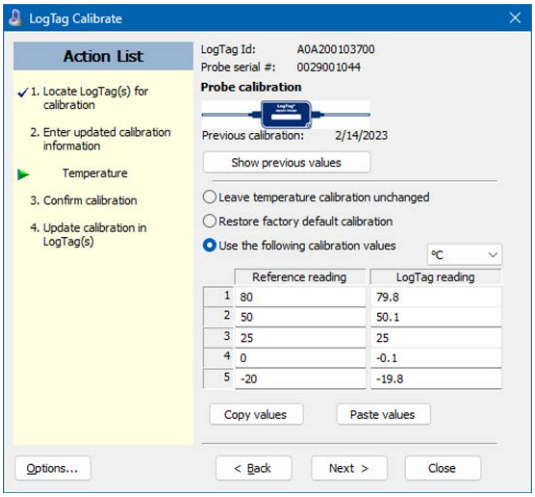
When LogTag Calibrate detects a Smart Probe capable logger, you will see a notification advising you to add the probe to the CH1 input of the logger, or to simply plug it in if the logger only has a single probe socket.



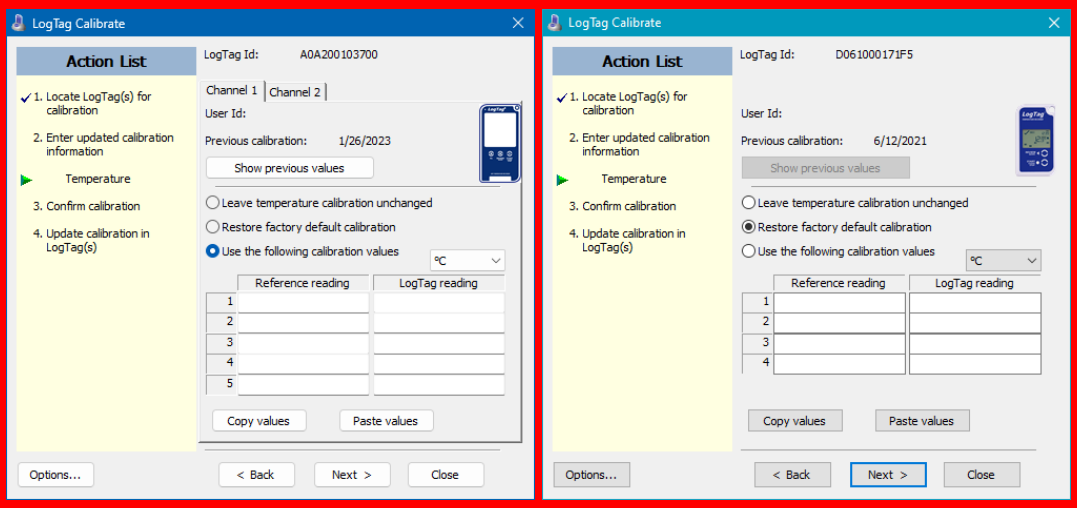


Due to a change in storage format for loggers supporting Smart Probes, the logger will stop recording at this point, and previously logged data cannot be retained in the logger. Please ensure you have the temperature data saved to a file before proceeding with the next step! At the end of this process, the logger will be hibernated and must be re-configured for further use.

After you click **Next**, LogTag Calibrate communicates with the probe and downloads its current calibration details. This process can take up to 20 seconds, during which the screen is not updated. Please wait until you see the next screen.

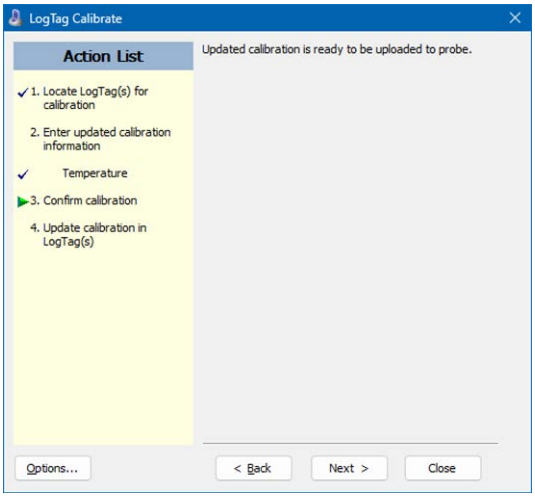


⚠ **At this stage, please make sure you can see the image of the probe depicted in the dialogue, as shown above. If you see the following image, depicting a logger and two channel tabs, or simply a logger, you are adjusting the logger's internal calibration, which will only be used with analogue probes.**

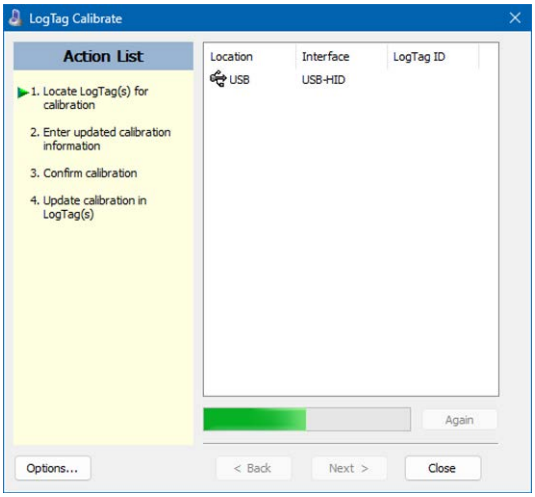


When the probe data transfer has completed, the calibration is adjusted in the same way a logger calibration would be adjusted, using reference and logger temperature values.

Once the data have been entered, click **Next**. The calibration table is now ready to be written to the Smart Probe.

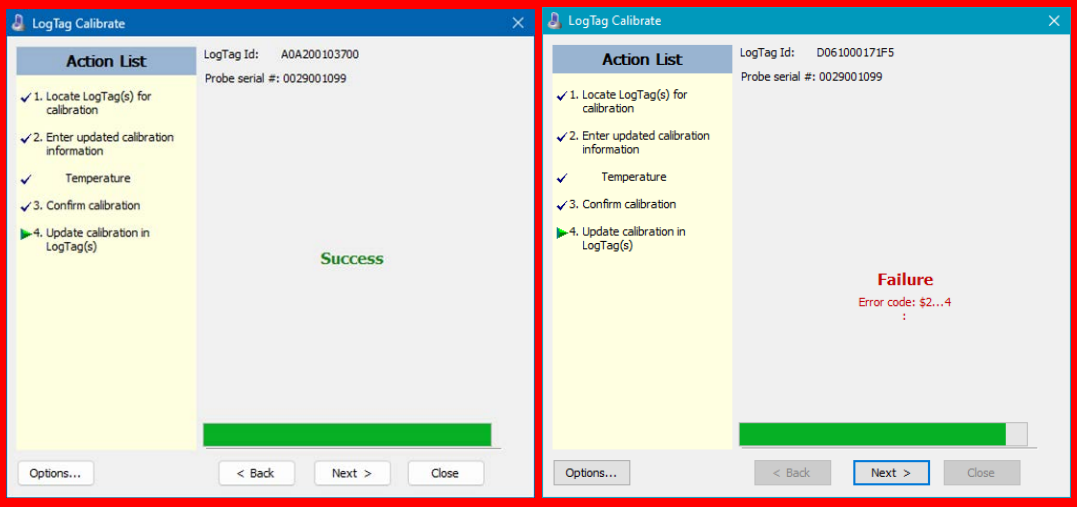


Press **Next** again to start this process.



Due to the serial nature of the communication between the logger and the Smart Probe, this process can take up to 30 seconds.

⚠ Do not disconnect the probe or logger during this stage. You must wait until you see the "Success" message on-screen. If you see the "Failure" message, a communication error between the logger and the Smart Probe occurred, and you will need to repeaty the data entry process.



At the end of the process the logger is hibernated and must be re-configured if a new calibration run is to be recorded.

The adjustment process for the Smart Probe is now complete.

Single use Loggers

Starting with version 1.6r5, LogTag Calibrate will add an extra trip to single use loggers, so a calibration can be performed without using up the only available trip. In previous versions this required the return of the logger to the distributor. Now, this is done automatically when the calibration values are written to the logger at the end of the adjustment process.

Following loggers will have the extra trip added:

- SRIC-4
- SRIL-8
- USRIC-8
- USRIC-8M
- USRIC-4

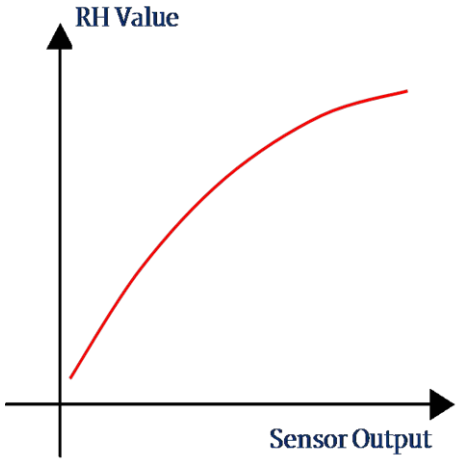
Attention: Only one single trip can be added! A logger that is configured for the second time, started, and then processed in LogTag Calibrate will not have another trip added and can no longer be used for temperature recording.

Humidity and Temperature Calibration

Technical Background

Humidity Calibration for HAXO-8, HASO-8 and UHADO-16 loggers is different from temperature calibration. There are no adjustment values stored inside the logger; instead the relation between sensor output values and the RH values these represent is changed.

This relation is quadratic in nature, and the curve's parameters are re-calculated when a calibration is performed, so the curve fits the new set points.



A single set point or two set points can be used, however the curve can be adjusted most accurately with 3 set points.

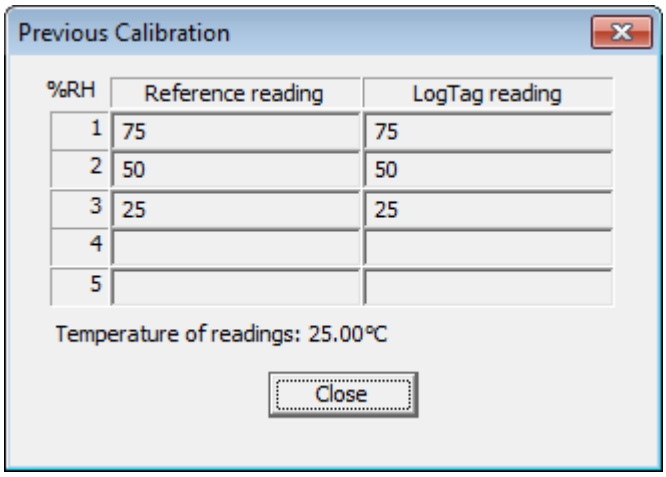
Figure 1: *RH calibration curve*

To allow a successful curve adjustments, a few rules are in place:

- For a set point to become the "high" set point, RH levels have to be between 65%RH and 90%RH. In turn, any set point between those levels is deemed to be a high set point. A typical high set point value is 75%.
- For a set point to become the "mid" set point, RH levels have to be between 35%RH and 65%RH. In turn, any set point between those levels is deemed to be a mid set point. A typical mid set point value is 50%.
- For a set point to become the "low" set point, RH levels have to be between 10%RH and 35%RH. In turn, any set point between those levels is deemed to be a low set point. A typical low set point value is 33%, although 25%RH is also common.
- Adjacent set points must be at least 10% apart.
- If less than 3 set points are entered, the software calculates the new curve based on existing set points. In this case you will need LogTag Analyzer 2.7r8 or later to configure and download HAXO-8 loggers manufactured after October 2016. You will receive a warning message, if you write a calibration to such a logger.
- RH values in HAXO-8 are temperature compensated, hence it is important that the set points are performed at the same temperature to allow the curve adjustment to work correctly. If not all three set points are entered, the calibration must be done at the temperature of the previous

calibration.

This is either 25°C if a factory calibration is installed, or the value in the previous calibration table, which can be accessed by clicking **Show installed setpoints**.



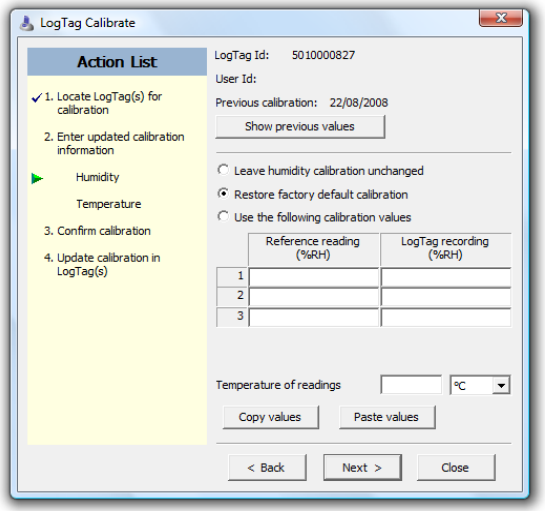
This screen also shows the previous RH set points (but not the previous calibration reading).

Due to the complex nature of the calculations not all calibration value combinations will result in a valid calibration curve throughout the entire 0-100%RH range, especially if the environment is less stable than desired and the set points are close together. You will receive a warning message if this is the case, and it would be recommended you check your set up and the accuracy of your input values.

Please note that at this stage it is assumed that all RH set points for a single logger are performed at the same temperature.

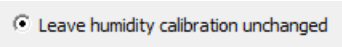
Process

When a HAXO-8 is found in the interface, the main humidity calibration screen is displayed.

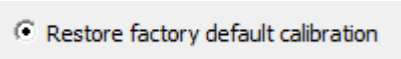


If an option cannot be selected, it is not available for this product.

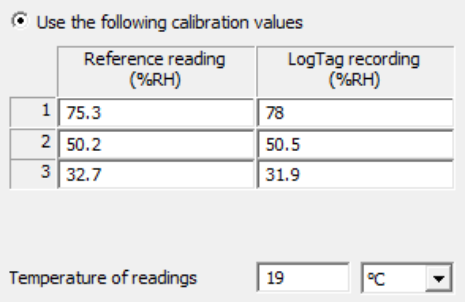
The dialogue window shows the serial number and User ID of the logger to be adjusted in the upper left. If the logger has previously been re-calibrated, the date of this calibration is also shown.



Choosing this option does not change the RH calibration. Select this option, if you only wish to adjust the temperature calibration of a HAXO-8.



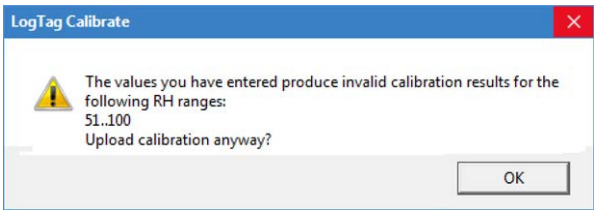
If you chose this option, the ex factory calibration will be re-instated. Effectively this means that the curve parameters are re-set to the same values that are installed when the HAXO-8 leaves the factory.



The pairs of reference and logger readings can be entered here, as well as the temperature at which the calibration was done, in either ºC, ºF or K. Since Relative Humidity is directly related to temperature, it is important that you input the correct value, as an incorrect setting will result in incorrect readings.

A typical calibration data set would be as shown.

There is no maximum allowable difference as is with temperature, however as detailed earlier the result of incorrect data entry could mean an invalid calibration curve. Sometimes this error message will only affect a very small RH% range (e.g. 0-4%RH). This may not in fact be problematic; however a large error such as in the screen is most certainly the result of an incorrect calibration.



In this case you may be able to improve the accuracy by entering the data in two separate steps:

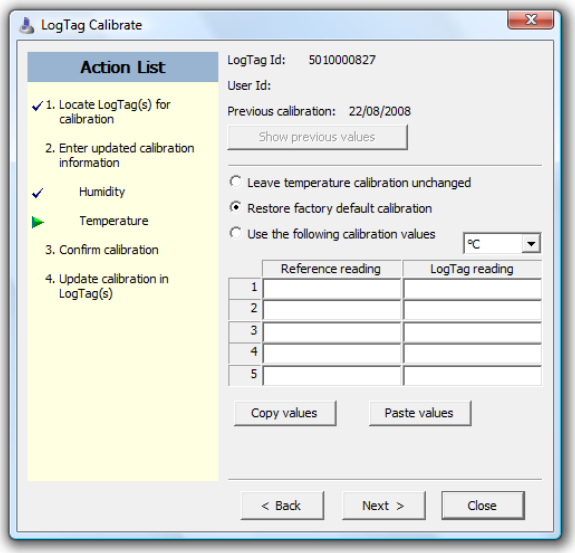
- enter all set points, however instead of entering the reference reading you enter the mean between the LogTag®'s recorded value and the reference instrument and apply the calibration. Retain the readings and download the unit. The displayed readings should now be closer to the required values.

- Now use these new readings as the LogTag®'s readings and the correct reference readings. In most cases this procedure will result in a correct calibration.

Note !! The value entered in "Temperature of readings" is the value the HAXO-8 records at the set points, not the value of the reference instrument. This is required so the temperature compensation can be accurately calculated, specifically if the HAXO-8 also requires temperature calibration.
If discernible temperature adjustments need to be made, we would recommend to perform an independent temperature calibration first before adjusting RH values.

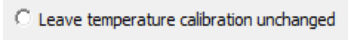
Tip: If you wish to calibrate a number of different LogTag® units, and the reference reading is the same for all of them, you can use the copy and paste function for temperature as well as humidity instead of having to enter the values again for each logger. Please note these are not the usual CTRL-C and CTRL-V Windows clipboard functions, but internally stored values which will not be available on the clipboard outside LogTag Calibrate. You can access these on the keyboard through ALT-C and ALT-V, or click the buttons **Copy values** and **Paste values**.

Please also note although all fields are copied and pasted, the LogTag®'s values are expected to be different for each different unit, so check them carefully before applying the calibration.



Once you have entered the Humidity calibration table, click **Next** to continue.

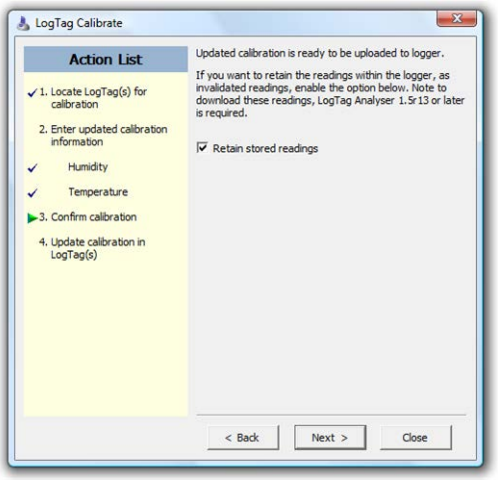
This will bring up the "Temperature Calibration" Screen. This screen is identical to the calibration screen for temperature only loggers. Please refer to Temperature Calibration of Temperature only s on page 1 for a detailed explanation on temperature calibration. The only difference is following additional option:



Selecting this option will leave an existing temperature calibration unchanged. You would select this, if RH and temperature calibration are performed independently from each other, which is LogTag North America's recommended procedure.

Once you have entered the Temperature calibration table, click **Next** to continue.

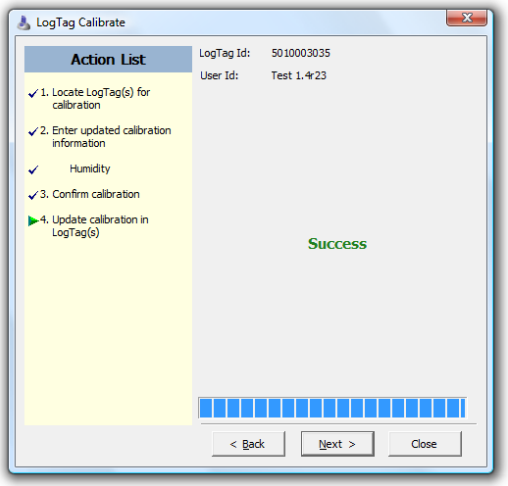
This will bring up the "Confirm Calibration" Screen.



If you do not wish the readings to be available in LogTag® Analyzer after the calibration, remove the tick next to "Retain stored readings".

We strongly recommend you leave this box ticked and download the readings back intoLogTag® Analyzer for a before/after comparison.

After the calibration has been successfully installed in the logger, you will see the following success message:



Insert a new HAXO-8 for calibration update into the interface and click **Next** to continue.

Note: Once the calibration has been installed in the logger it will stop logging.

At the time this guide is published updated RH calibration is only backward compatible with older versions of LogTag® Analyzer if no temperature calibration is performed at the same time. Please see Temperature Calibration and Earlier Versions of LogTag® Analyzer.

A Typical Calibration Run

Removing a previous calibration

As a first step we strongly advise to delete any calibration data from the logger or Smart Probe before starting the new process. This will make it significantly easier to enter the new values. This must be done before the calibration recording is started. The algorithm calculating the adjustments across the range works significantly better if the factory calibration is used, and reduces potential rounding errors.

This step is not required when the logger or probe is calibrated for the first time, and **MUST NOT** be completed for single-trip loggers.

Start LogTag Calibrate with the logger connected to the PC or in the interface, select "Restore factory default calibration", click **Next** and complete the adjustment process.

Changing the battery

Before the calibration run is performed, we strongly advise to install a fresh battery into loggers with replaceable batteries and into Smart Probes. Instructions for battery change can be found in the user guides for each product, or for Smart Probes, at the end of this guide in Battery Replacement for Smart Probes on page 35.

Preparation of Loggers with LogTag® Analyzer

Configure the LogTag® to be calibrated with LogTag® Analyzer for a date/time start with the smallest interval the product supports (typically 30 seconds or 1 minute). Observe that the LogTag® starts at the desired time and bring it into the stable environment. Please read the tips related to Recalibration of Temperature LogTag®s.

If you are calibrating a USB PDF logger please ensure the "create LTD" check box in **Advanced Options** is selected.

If you are calibrating Smart Probes you can add two probes to a logger to record the run, but please note, they cannot be adjusted together (see Smart Probes on page 16).

Preparing your Reference Instrument

If your reference instrument has the capability of logging measured values, please ensure its time is synchronized to the computer on which the loggers were configured. Place your reference instrument into the environment, ensure it is close to the unit under calibration and no environmental effects are present that could falsify your results or increase the uncertainty of your measurement.

Performing the Calibration Run

Adjust the chamber settings for your initial set point. Stabilize the chamber at the first set point. Once a stable environment has been reached, keep the chamber at this value for at least another 30 minutes (preferably 1 hour). It is the environmental condition at the end of the stabilization period which will give you your most accurate results. If your reference instrument is not logging,

you will need to note down the readings against the time of the computer on which the LogTag® has been configured. If calibrating for RH, you also need to note the temperature at which you are performing the calibration. For RH, typically the stabilisation period is also much longer.

After the first set point at least two more set points should be added in similar fashion. You may typically enter up to 5 Temperature set points, or up to 3 RH set points.

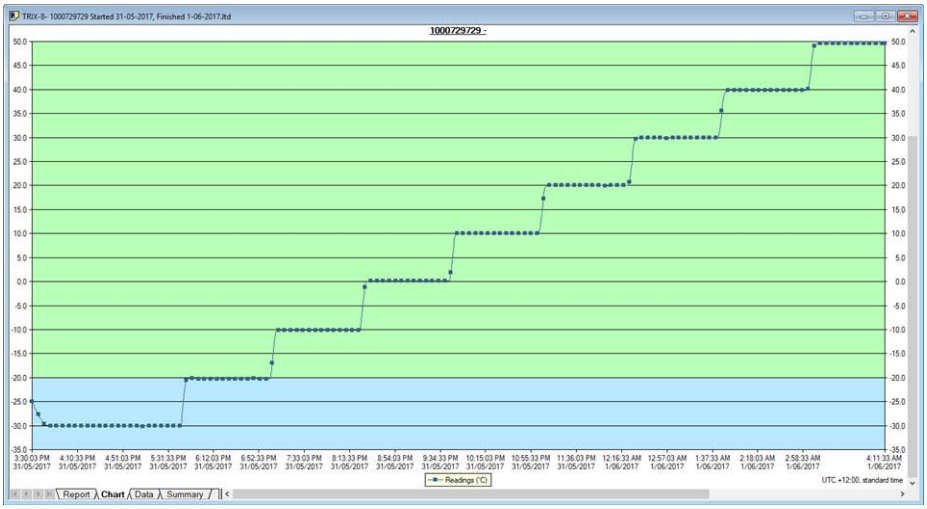


Figure 1: A typical calibration recording for a TRIX-8 logger

For temperature only loggers, you can use a single set point if the logger is typically only used at this temperature.

Obtain Reading Pairs

After the calibration run you should download the logger under test and observe the readings in LogTag® Analyzer. Compare them to your reference instrument's readings. This will give you pairs of Reference readings and Logger readings, which will be the basis of your calibration adjustment.

Entering the Calibration

Start LogTag Calibrate. Please note that you can not use LogTag® Analyzer and LogTag Calibrate simultaneously, as each software will block the communication port it is using for the other software. Enter the calibration pairs as determined earlier and install the calibration. We strongly recommend to retain the readings in the LogTag® where this is possible.

⚠ For UTRED30-WiFi Dual-Channel loggers, the option to retain readings is not available, regardless of whether a Smart Probe is being calibrated or not. The logger will stop recording, and will be hibernated at the end of the adjustment process.

Checking the Calibration

For loggers that do not support Smart Probes, the readings before and after the calibration run can be compared by downloading the readings from the logger under test into LogTag Analyzer again. You should now see the readings marked as “recalibrated”, and at your selected reference points the LogTag® should now display the same values as your reference instrument.

Note: USB PDF loggers will not display a PDF after they have been adjusted with LogTag Calibrate.

Important Hints

Stable and uniform environment

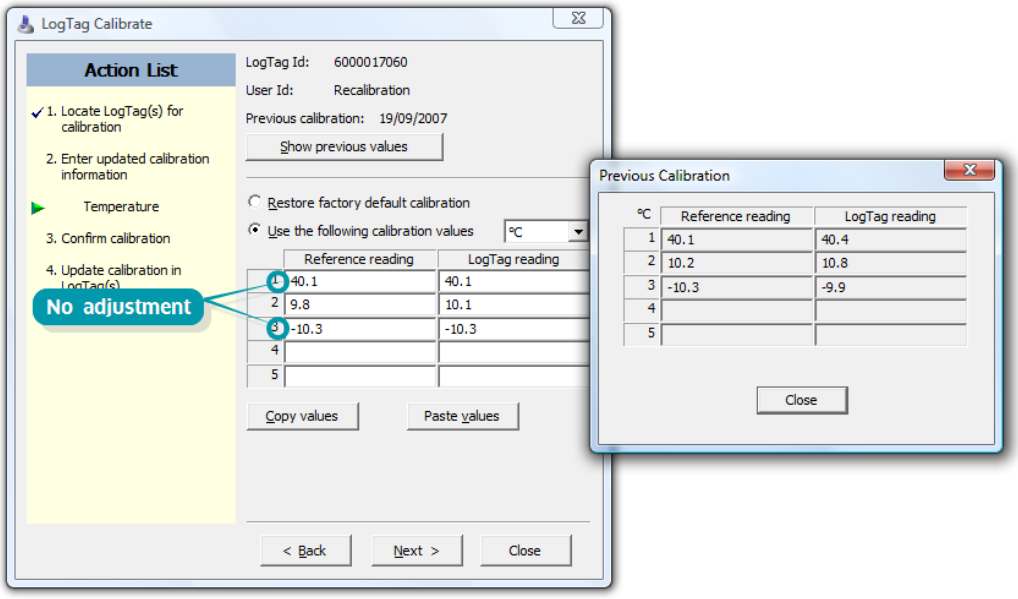
LogTag Calibrate allows you to influence how accurately a logger measures temperature or humidity. This is why it is absolutely necessary that you have experience with temperature calibration or humidity calibration before attempting to adjust LogTag® logger products. Entering incorrectly obtained reference readings will result in incorrect recordings.

It is also extremely important that you only calibrate in an environment that is stable and can guarantee that reference instrument and the LogTag® unit under test are subjected to the same environmental conditions. Both relative humidity and temperature can form micro-climates with larger than desired gradients between two different locations in a chamber. There is no point in calibrating painstakingly to 0.1ºC accuracy if your chamber has a 0.5ºC gradient between the two locations measured.

Recalibration of Temperature LogTag®s

Temperature only loggers can be calibrated more than once. Entering a new calibration takes into account any previous calibration already present in the logger. If you wish to retain any of the existing set points you need to be aware of the following:

Let's assume you are tasked with calibrating a TRIX-8 with an existing 3-point calibration at around -10 ºC, +10 ºC and +40 ºC. Due to time constraints you can only perform a single set point at +10 ºC, your reference shows 9.8 ºC and the LogTag® reads 10.1 ºC. If you wish to retain the previous set points at -10.3 ºC and +40.1 ºC you must enter following into the new calibration table:



Entering the old calibration points with no correction value ensures that the software retains the calibration adjustment from 40.4 ºC to 40.1 ºC and from -9.9 ºC to -10.3 ºC. If you would only enter the set point you have just measured, the software would delete any old set points, and the logger would behave as if only a single set point had been performed.

Therefore, if your intention is to completely re-calibrate a LogTag® for temperature we strongly recommend you run LogTag Calibrate before the intended calibration run and restore the factory calibration.

Temperature Calibration Method

LogTag® logger products are not waterproof and cannot be directly immersed in a fluid bath without adequate protection.

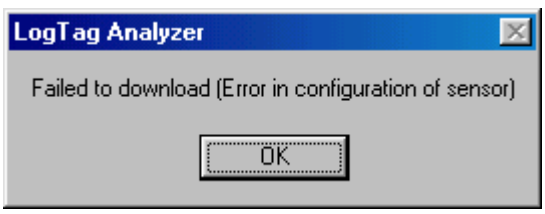
We recommend sealing the LogTag® in a thick (at least 70micron) plastic bag with as little air enclosed as possible, or if only calibrating at temperatures above 0°C, using LogTag North America's waterproof enclosure (part number 200-000020). Ample stabilization time will be required for the sensor to reach equilibrium. Applying a vacuum may force the buttons to activate, so use this with caution.

Temperature Calibration and Earlier Versions of LogTag® Analyzer

Once you install a new temperature calibration adjustmen, certain restrictions for configuring or downloading loggers with LogTag® Analyzer apply, depending on the model.

- Re-calibrated temperature only loggers require LogTag® Analyzer 1.5 Release 13 or later, but at least the version that supports the model.
- Re-calibrated HAXO-8 loggers require LogTag® Analyzer 1.7 Release 1 or later.
- Re-calibrated TRID30, PTID30-7F, TRED30 and PTED30-7F loggers require LogTag® Analyzer 2.1 Release 1 or later.

If you attempt to configure or download a unit with a prior version following error message will appear:



Earlier versions of LogTag® Analyzer do not have the capability of adjusting the readings according to the correction table and would display a wrong result - hence the error message will appear.

You can reverse this by selecting “Reset to factory calibration” and by un-checking the box next to “retain stored readings”. Such a LogTag® will then work again correctly with earlier versions of LogTag® Analyzer, albeit in its non calibrated state.

Re-calibrated HAXO-8 models are backward compatible, provided their temperature calibration has not been affected. In this case the option “Leave temperature calibration unchanged” must be selected during the calibration process.

Re-calibrated TRID30, PTID30-7F, TRED30 and PTED30-7F loggers cannot be made to work with earlier version than listed above.

Single / Dual set point Humidity Calibration

It is important to emphasize that RH calibration is based on adjusting parameters of a quadratic curve, rather than processing correction values.

If a single set point is performed -leaving two of the set points unchanged- the curve's parameters may change such that the values near the unchanged set points also shift, which may be undesirable. This is a result of the shape of the curve and can only be avoided by using all three set points.

Smart Probes

Throughout this guide we have highlighted the need to carefully observe which part of the logging system you are adjusting.

If a logger is predominantly or exclusively used with analogue probes (ST100 family), you will want to create a calibrated set of logger and probes, each probe marked with a serial number, and if applicable, a channel number. During the adjustment process, make sure:

- no Smart Probes are connected when you upload the adjustment to the logger
- the screen that shows the adjustment table shows a logger image, and not the Smart Probe image

Only when you see the logger image can you be sure you are adjusting the logger's table. The calibration certificate for such a set would only be valid if the probes are used with the logger they were calibrated with. For two-channel loggers, it is also important calibrated probes are used with the correct channel.

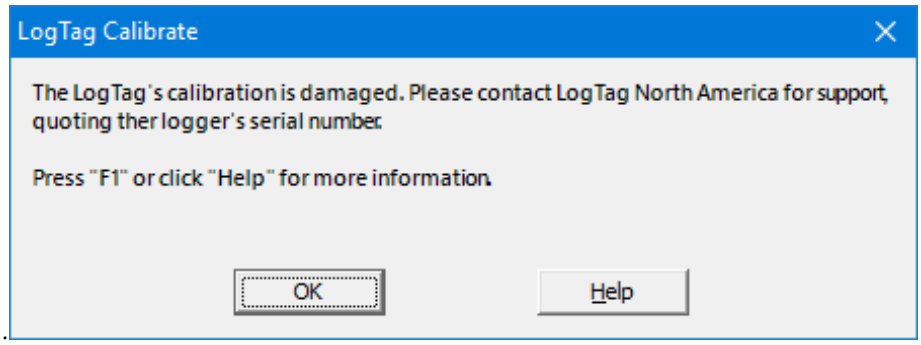
When you enter calibration information for a Smart Probe, make sure the probe is connected to CH1 if you use a dual-channel logger, and you see this image in the dialogue:

Smart Probes do not require matching with a specific logger. They hold their own calibration information and can be used with any corresponding logger model that supports the model of Smart Probe.

Always use the correct model of Smart Probe with the logger.

Corrupted Calibration

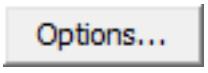
On rare occasions the following dialogue may be displayed:



If you receive this error, please do the following:

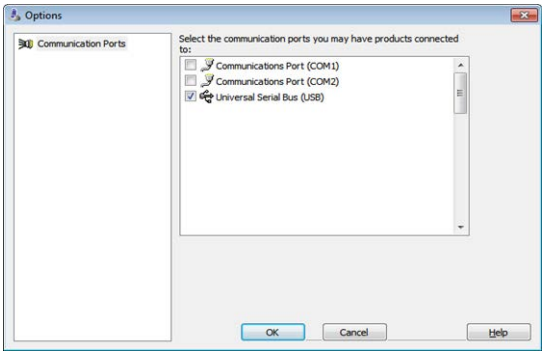
- close LogTag Calibrate
- start LogTag Analyzer and generate a diagnostic email by clicking Request Help from the Help menu. The logger must still be placed in the interface. A draft email is generated in your email client; please advise that you are having a calibration corruption issue with this unit.
- Do not re-configure the logger, especially if you have already performed a calibration run in a temperature controlled environment.
- Wait for LogTag North America to respond to your request. On most occasions LogTag North America will be able to repair a corrupt calibration without losing the data from the calibration run by providing a special repair tool. This way there is no requirement to do the calibration run again.
- If a repair is possible, follow the instructions received from LogTag North America
- Once the logger has been successfully repaired, continue with the calibration.

Communication Ports

Clicking 

in either of the action windows brings up the communication ports configuration screen, which allows you to define which communication ports will be checked for connected interface cradles. You should exclude any ports which are not used to connect interfaces, or which are regularly used for other applications.

As the software supports multiple communication ports, it is possible to connect and use more than one Interface Cradle at the same time, however only one product may be placed in any of the interfaces.



Note: USB ports cannot be disabled; if you do not wish the software to communicate with USB ports you must unplug any interface currently connected.

Battery Replacement for Smart Probes

Although the battery in the product is expected to last for several years, it is highly recommended to replace a Smart Probe's battery before a calibration run as a precautionary measure. Batteries in Smart Probes are not meant to be replaced by the end user, and a low battery can lead to undesired results when performing the calibration run.

The battery can be changed using these steps. Please read all steps carefully before commencing any work:

1. Remove the front label.

   To do this, insert a flat tool such as a knife or scalpel into the slot next to the lug and carefully lift the label. Please note you may need a new Smart Probe label, however, our experience is that the labels can be re-attached at least once.

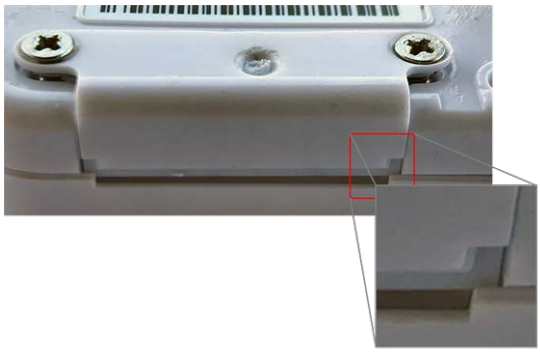
2. With the label removed, remove the two screws from the battery door and set aside. Remove the battery door (slide up) and set aside.

3. Slide a small non-conductive stick into the slot above the serial number label and push the battery forward as far as you can. Exercise caution - you do not want to damage any parts inside the case.

4. Now remove the battery. It is best to use rubber/nitrile gloves to provide some grip on the battery. Do not use a conductive tool to grip the battery, such as tweezers.

5. Insert the new battery, with the correct polarity (the positive terminal facing towards the front label). Use a battery from a reputable manufacturer.

6. Slide the battery cover into the grooves. Ensure the battery cover sits correctly in the groves, then press down until the cover sits flush.



Refit the screws and label. Do not overtighten the screws.

7. The battery replacement is complete.