



TecnoCalib

User's Manual

Version date 05/05/2011

**Calibration Software for
*SterilDisk, PasteurDisk,
SterilCyl, PasteurCyl*
all versions (standard, Jumbo, Radio)
Temperature Dataloggers**

Software version 1.0.0.0

Index

LICENSE AGREEMENT	4
INTRODUCTION	5
AVAILABLE DEVICES	5
SYSTEM REQUIREMENTS	6
HARDWARE	6
SOFTWARE	6
INSTALLATION	7
INSTRUMENTS AND ACCESSORIES	8
CONNECTING THE DiskINTERFACE	8
USB DRIVER INSTALLATION UNDER WINDOWS XP.....	8
USB DRIVER INSTALLATION UNDER WINDOWS VISTA/7.....	8
UNSUCCESSFUL INSTALLATION.....	8
DEVICES CONNECTION	8
BASIC OPERATIONS	10
LAUNCHING THE PROGRAM	10
THE MAIN WINDOW	10
ONLINE HELP	10
EXIT THE PROGRAM	10
CONFIGURATION	11
HIGH TEMPERATURE	11
CALIBRATION EQUIPMENT.....	11
REFERENCE INSTRUMENT.....	11
CERTIFICATION AUTHORITY.....	12
CALIBRATED FROM.....	12
NOTES.....	12
OPERATOR.....	12
MISSION PATH.....	12
GENERAL	12
CERTIFICATES.....	12
LOADING MISSION DATA	13
FROM FILE	13
FROM DEVICE	13
INPUT CALIBRATION DATA	14
GENERAL	14
ACCOUNTING	15
DEVICE	16
SAVE THE REFERENCE FILE (CCD)	16
CALIBRATING A DEVICE	17
CALIBRATION PROCEDURE	18
INSTRUMENTATION	18
PROCEDURE TO FOLLOW WITH TECNOSOFT DATA LOGGERS	18
TROUBLESHOOTING	19
SOMETIMES I CANNOT CONNECT TO ANY STERILDISK	19

License agreement

Read this license agreement thoroughly before using the Software. Using and copying this Software is subject to the acceptance of this agreement.

If you choose to refuse the following conditions, please return this Software to the point of purchase for a complete refund. This agreement involves Tecnosoft srl, Peschiera Borromeo, Milano, Italy (henceforth called Tecnosoft) and the User (be it a physical or juridical person) for the following software products (henceforth called Software):

"Program" and any software product accompanying it.

Tecnosoft grants the user a non-exclusive right to use a copy of the software on a single computer provided that the user accepts the following conditions.

1. **User license.** The Software is property of Tecnosoft and cannot be copied nor sold without the prior written authorization of Tecnosoft. The Software is protected by Italian and European Laws and by International Treaties concerning intellectual properties.
2. **Additional licenses.** The purchase of additional licenses conveys the right to use the Software on a corresponding number of computers at the same time.
3. **Exclusion of liabilities.** Except for what stated by applicable laws, in no case can Tecnosoft be considered liable for damages or losses, direct or indirect, including, but not limited to, loss or missing income, suspension of activities, loss of information or any other monetary or economical damage, deriving from proper or improper use of the Software even if Tecnosoft has been advised of the possibility of such damages. In any case, the responsibility of Tecnosoft for such damages will be limited to the price paid for the Software. This clause is applied even if the User does not accept the Software.
4. **Use of Software results.** It is User's responsibility to check that results given by the Software are correct and appropriate. In no case the Software should be used if such use can be threatening to the health or life of human beings. This clause is applied even if the User does not accept the Software.
5. **Updates.** If the Software is an update of a previous version, the license is transferred from the old version to the update. Only the update can be used, unless the update is destroyed.
6. **Separation of components.** The Software is licensed as a single product. Components cannot be separated.
7. **Limitations.** The User cannot convert, decode, decompile or disassemble the Software, except for what is explicitly requested by applicable laws.

Introduction

TecnoCalib is the software program used to create and upload calibration files for Tecnosoft loggers. The process is easy:

- start the loggers with their proper software and interfaces;
- make the calibration process and record data from the reference devices (thermometers, hygrometers etc.): you can also track down them manually indicating the exact time of the reading;
- download the loggers with their proper interface and software and upload the acquisition file in the TecnoCalib software and type in values from the reference devices;
- or
- directly download data using the TecnoCalib software;
- create a match file and send it to Tecnosoft (CCD format);
- wait for the calibration file from Tecnosoft (TCD format);
- upload the calibration file into proper logger.

Available devices

Following the list of the devices currently supported by the TecnoCalib software, with the needed accessories (all with their product code).

Interface + software	Data logger
DiskInterface + SPD (ts04spdu)	PasteurDisk (ts01pd)
	PasteurDisk Probe (ts01pdp)
	SterilDisk (ts01sd)
	SterilDisk Probe (ts01sdp)
	PasteurDisk Can (ts01pdds, ts01pddm, ts01pddl, ts01pddd)
	SterilDisk Can (ts01sdds, ts01sddm, ts01sddl, ts01sddd)
DiskInterface + SPD (ts04spdu) and adapter (ts10spca)	PasteurCyl (ts10pca, ts10pcg, ts10pcb, ts10pcc)
	SterilCyl (ts10sca, ts10scg, ts10scb, ts10scc)
DiskInterface + SPD (ts04spdu) and adapter (ts04spdja)	PasteurDisk Jumbo (ts01pdj1, ts01pdj2, ts01pdj3, ts01pdjd)
	SterilDisk Jumbo (ts01sdj1, ts01sdj2, ts01sdj3, ts01sdjd)
DiskInterface + SPD (ts04spdu) and adapter (ts04spcja)	PasteurCyl Jumbo (ts10pcj1, ts10pcj2, ts10pcj3, ts10pcjd)
	SterilCyl Jumbo (ts01scj1, ts01scj2, ts01scj3, ts01scjd)
DiskInterface + SPD (ts04spdu) and adapter (ts04spcra); USB Radio Receiver (ts04rr)	PasteurCyl Radio (ts10pcra, ts10pcrd, ts10pcrb, ts10pcrc, ts10pcrh)
	SterilCyl Radio (ts10scra, ts10scrd, ts10scrib, ts10scrc, ts10scrh)

System Requirements

Hardware

<i>Description</i>	<i>min</i>	<i>Recommended</i>
Microprocessor	1 GHz	2 GHz
Memory	64 MB	128 MB
Video	800x600; 256 colours	1024x768; 16 Mil. colours
1 free USB port for the DiskInterface 1 free USB port for the USB hardware protection key		

Software

<i>Description</i>	<i>Supported</i>
Operating system	Windows XP / Vista / 7 (32 bit and 64 bit)

Installation

To install TecnoCalib simply insert the installation CD into your CD-ROM; click on **Start – Run** and type “D:\setup.exe” (N.B. Your CD-ROM device could have a different name to “D”).

Select the installation menu language and click on **Install**, then select TecnoCalib and click **Install** again; from this menu you can also open the PDF manual or the USB driver installation instructions.

Follow the instructions to complete the installation. You may be required to install Microsoft .NET 4.0 before installing the software: accept and proceed. We suggest to install TecnoCalib for all users (*Everyone*). At the end click on **Finish**.

Instruments and accessories

All loggers currently managed by the TecnoCalib software are connected to the PC by means of a single interface, the DiskInterface. Initially developed for PasteurDisk and SterilDisk, with and without probe, it can accept also other kind of loggers using dedicated adapters. The only other loggers that don't require such an adapter are the PasteurDisk Can and the SterilDisk Can.

The first thing to do is connect the interface to a free USB port and install the drivers.

Connecting the DiskInterface

In the kit there is also a USB cable: connect the biggest flat end in the free USB port of your PC while the other smaller end in the USB connector on the device.

As soon as the device is connected to the PC, Windows will detect its presence and will begin the driver installation procedure. According to your operating system, proceed as follows.

USB driver installation under Windows XP

In the *Add New Hardware* window, select *No, not now* (last option) and click **Next**. Then, select always the last option, which requires manual installation of the driver (for expert users) and click **Next**. Set in the path field, the following path (make sure the CD is in drive): "D:\Drivers\XP_2000 (32 bit)" (your driver might not be called "D") and click **Next**. If, during installation, Windows would give you a warning about the origin of the unsigned drivers, click **Continue**, and after the procedure, click **Finish**.

If you change the connection port of the interface, you might be required to reinstall the drivers.

Note: the DiskInterface drivers is available on the Tecnosoft website and are also found in the installation folder of the program, if you lose the installation CD.

USB driver installation under Windows Vista/7

Windows will install the driver, without success. When you will get the option, ask to specify a path to look for the drivers. Set in the path field, the following path (make sure the CD is in drive): "D:\Drivers\Vista_7 (32 and 64 bit)" (your driver might not be called "D") and click **Next**. If, during installation, Windows would give you a warning about the origin of the unsigned drivers, click **Continue**, and after the procedure, click **Finish**.

If you change the connection port of the interface, you might be required to reinstall the drivers.

Note: the DiskInterface drivers is available on the Tecnosoft website and are also found in the installation folder of the program, if you lose the installation CD.

Unsuccessful installation

If, for various reasons, the installation fails, go to **Control Panel - System - Device Manager** (or **Hardware - Device Manager** for Windows XP), select *USB Ports* and click the right button on *SDI* and select **Update Driver**. Then, follow the instructions above.

Devices connection

The devices must be inserted in the interface in a specific way: if, however, you insert them in the wrong way, it simply won't communicate with the data logger but there is no risk of damage to the instruments. In general, this rule applies: the face of the logger on which the serial number is engraved is facing the side on the reader interface identified by the label "Serial number here". In cases of cylindrical data loggers, the tip should always be directed towards the USB connection.

Following, the images with the data loggers inserted in the interface with the data logger with the proper adapter and in the correct direction (the USB connection is facing upward).



PasteurDisk, SterilDisk



PasteurDisk Probe, SterilDisk Probe, PasteurDisk Can, SterilDisk Can



PasteurCyl, SterilCyl



PasteurDisk Jumbo, SterilDisk Jumbo



PasteurCyl Jumbo, SterilCyl Jumbo



PasteurCyl Radio, SterilCyl Radio

It is possible to connect multiple devices simultaneously and start and download them in series, one after another.

Note: some interfaces, for special purposes (for example, when a logger is connected to a dummy unit of product and should not be taken away from it and so cannot be placed in the *Disk Interface* or in its adapter), might have a cable with two clips, red and black. The red one must be connected to the probe or to the end where the probe would have been, if you have the version without the probe, while the black one should be connected to the other end. If you misplace the two clips the interface simply won't be able to communicate with the logger. If you get an error message, just invert the two clips on the two ends of the logger.

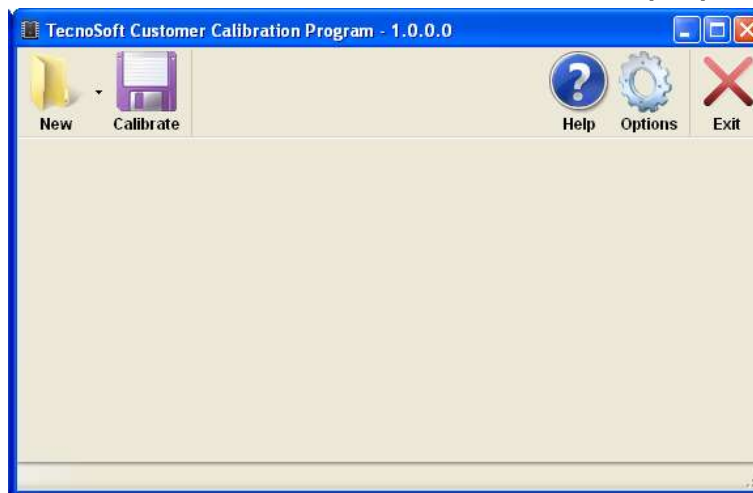
Basic Operations

Launching the Program

Once the installation is complete, double click on the **TecnoCalib** icon on the desktop to start the program, alternatively navigate to **Start – Program Files** (or **All the Programs**, if you're using *Windows XP*) – **Tecnosoft - TecnoCalib – TecnoCalib**.

The Main Window

The top part of *Main Window* holds the function buttons: **New**, **Calibrate**, **Help**, **Options**, **Exit**.



Online Help

Click on the **Help** button to open the PDF manual. Browse through the pages to obtain more information on the program functions.

Exit the program

To exit the program just click on the **Exit** button.

Configuration

Click on the **Options** button to open the *Options* window, where you may set the program parameters. Here you can set standard parameters and information for your certificate so you don't have to write them again each time. If a field is filled here, it will appear filled also during certificate creation. Select the tab you want to complete.

The screenshot shows the 'Options' dialog box with the following fields and values:

- Calibration Equipment:** Type: Thermostatic Bath; Name: Giussani; Accuracy: +/- 0.02 °C; Notes: (empty)
- Reference Instrument:** Type: PT100; Name: HP 34401A; Certificate Number: 10TS/0190; Certificate Authority: Authority 1 - 169; Certificate Date: 05/03/2010; Accuracy: +/- 0.02 °C; Notes: (empty)
- Certification Authority:** Name: Authority 1; Number: 169
- Calibrated From:** Name: Tecnosoft srl; Address 1: Via Galvani, 4; Address 2: Palazzina, I piano; ZIP Code: 20068; City: Peschiera Borromeo; Province: MI; State: Lombardia; Country: ITALY; Phone: +39 0226922888; Fax: +39 0226922875; Web: www.tecnosoft.eu; E-Mail: info@tecnosoft.eu; VAT: IT 09553010159
- Notes:** (empty)
- Operator:** John Smith; System Error: +/- 0.2 °C
- Mission Path:** C:\Programmi\TecnoSoft\SPD\Data

High Temperature

Here are the description for each field in this tab.

Calibration equipment

- *Type*: the type of equipment used to calibrate such as thermostatic bath, thermostatic chamber etc.
- *Name*: the name of the equipment, you can write the model and brand
- *Accuracy*: the accuracy of the calibration equipment
- *Notes*: some notes

Reference Instrument

- *Type*: the type of the reference instrument, such as thermometer, multiplexer etc.
- *Name*: the name of the reference instrument, you can write the model and brand
- *Certificate Number*: the number of the calibration certificate for this instrument
- *Certificate Authority*: the body who issued the certificate
- *Certificate Date*: date of issue of the certificate
- *Accuracy*: the accuracy of the reference instrument
- *Notes*: some notes

Certification Authority

These fields must be filled if the body who is making the calibration is a certification authority:

- *Name*: the name of the certification authority
- *Number*: the name of the certification authority

Calibrated From

Type here the details of the company or person who made the calibration:

- *Name*: the name of the calibrator
- *Address 1*: first line of the address
- *Address 2*: second line of the address
- *ZIP code*: postal code
- *City*: city of the calibrator
- *Province*: province of the calibrator
- *State*: state of the calibrator
- *Country*: country of the calibrator
- *Phone*: phone number of the calibrator
- *Fax*: fax number of the calibrator
- *Web*: website of the calibrator
- *E-Mail*: e-mail account of the calibrator
- *VAT*: VAT number of the calibrator

Notes

Type here some additional notes.

Operator

Name of the person who made the calibration process.

Mission path

Browse here the folder from where to search for the acquisition files automatically.

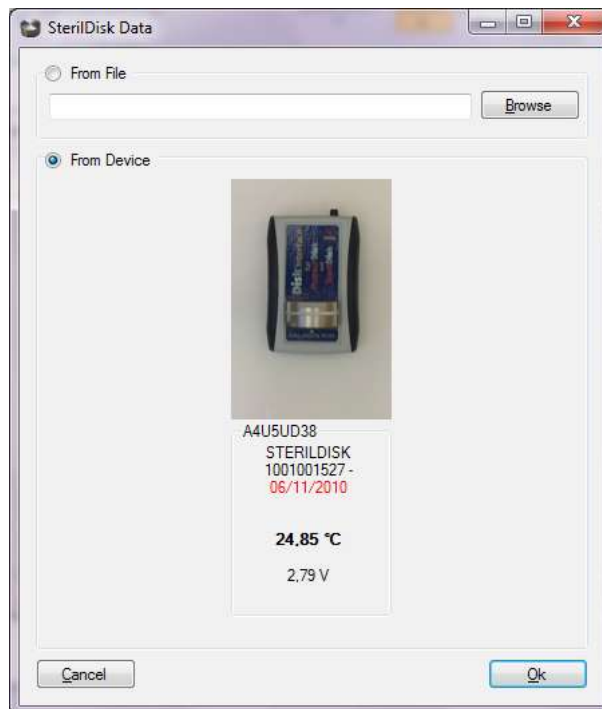
General

Certificates

Browse here the folder where the certificates in PDF format must be saved.

Loading mission data

Click on **New** and then on High Temperature in the *Main Window*.



Here you can choose to load a file from the SPD software or download directly the data from a device.

From File

Click on **Browse** and select the folder and the file you want to load. Click on **Open** and then on **Ok** to load these data.

From Device

Select *From Device* after you have connected the DiskInterface to the PC and inserted the logger in it. The window will display some information on the connected data logger:

- Type of logger, serial number and calibration expiration date (if this line is red, either the calibration is expired or in its last month of validity)
- Temperature value
- Battery status (if this line is red the battery is very low)

Press **Ok** to start downloading data.

Input calibration data

Make sure that the loaded data are correct and are from a calibration process. You can see it by the “steps” the mission graph will have in the *Device* tab.

General

Here you will find all the details for the certificate that you should already have filled in the Setup window. You change and update them from here, anyway.

The screenshot shows a software window titled "SteriDisk Send Calibration Data" with three tabs: "General", "Accounting", and "Device". The "General" tab is active and contains the following fields:

- Calibration Equipment:** Type (Thermostatic Bath), Name (Giussani), Accuracy (+/- 0,02 °C), and Notes.
- Reference Instrument:** Type (PT100), Name (HP 34401A), Certificate Number (10TS/0190), Certificate Authority (Authority 1 - 169), Certificate Date (05/03/2010), Accuracy (+/- 0,02 °C), and Notes.
- Certification Authority:** Name (Authority 1) and Number (169).
- Calibrated From:** Name (Tecnosoft srl), Address 1 (Via Galvani, 4), Address 2 (Palazzina, I piano), ZIP Code (20068), City (Peschiera Borromeo), Province (MI), State (Lombardia), Country (ITALY), Phone (+39 0226922888), Fax (+39 0226922875), Web (www.tecnosoft.eu), E-Mail (info@tecnosoft.eu), and VAT (IT 09553010159).
- Notes:** A text area for additional information.
- Operator:** John Smith
- System Error:** +/- 0,2 °C

At the bottom of the window, there are buttons for "Cancel", "Help", "Load", and "Save".

Accounting

Type here the data of the Customer for whom you are performing the calibration, if there is one. After you have filled the fields, click on **Save** to save these data in an XML file that you can later load by clicking on the **Load** button.

The screenshot shows a Windows-style dialog box titled "SterilDisk Send Calibration Data". It has three tabs: "General", "Accounting" (which is selected), and "Device". The "Accounting" tab contains a section titled "Calibrated For" with the following fields:

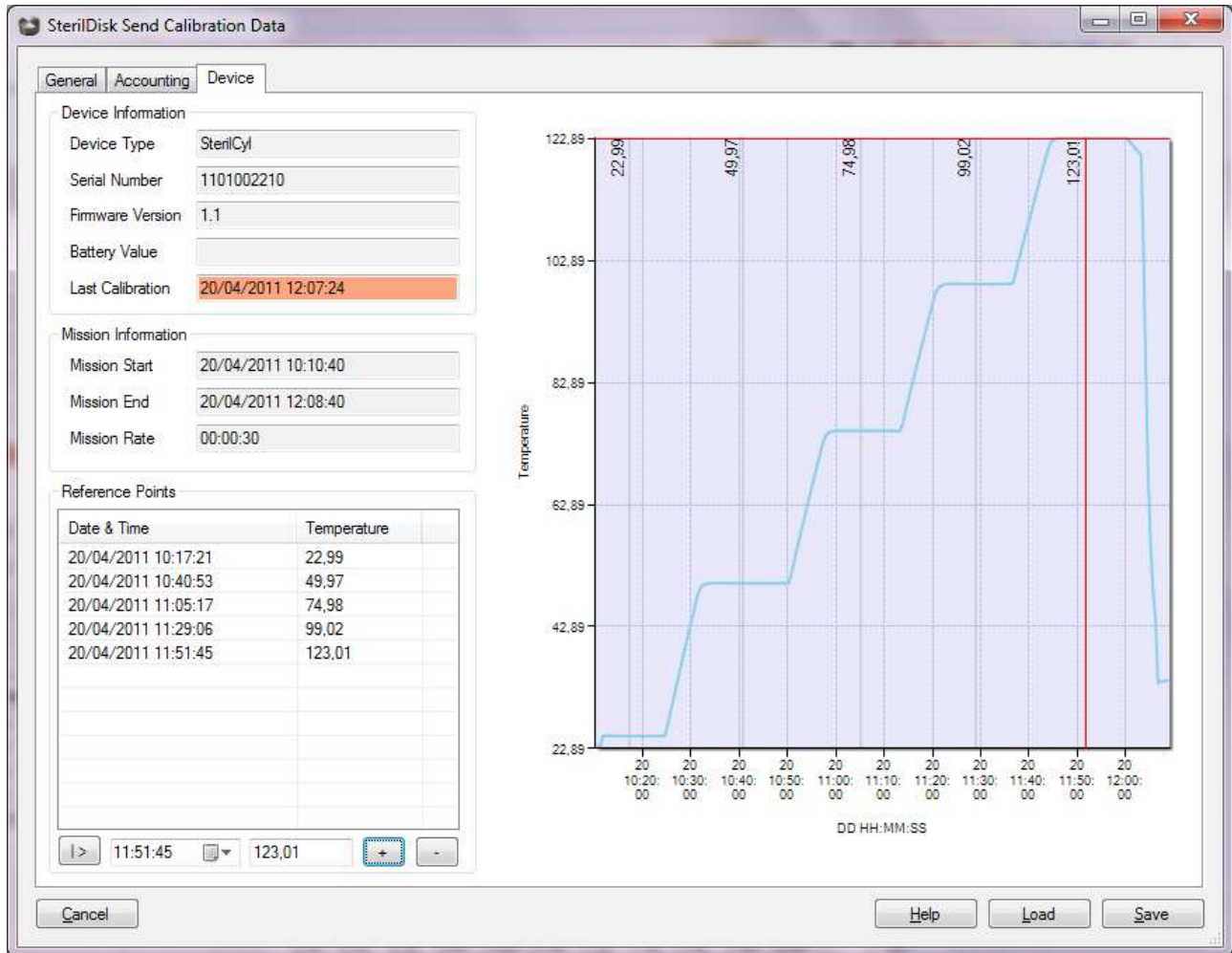
- Name: Company A
- Address 1: Main Street, 5
- Address 2: (empty)
- ZIP Code: (empty)
- City: Milan
- Province: MI
- Country: ITALY
- Phone: (empty)
- Fax: (empty)
- Web: (empty)
- E-Mail: (empty)
- VAT: (empty)

Below the fields are two buttons: "Load" (with a floppy disk icon) and "Save" (with a save icon). At the bottom of the dialog box are three buttons: "Cancel", "Help", "Load", and "Save".

Device

Here you see the graph of the data. In the *Reference Points* you can input the data from the reference instrument.

To do so, click on the graph where you want to set the matching point between the recorded data and the reference data. Choose a place where the data are still for some time. Then click on the **|>** button (bottom left corner) to put the cursor on an exact acquisition and then type in both the exact time when you took the value from the reference instrument and the value from the reference instrument and click on **+**. The new reference value will be added to the list. To remove a value, select it and click on **-**.

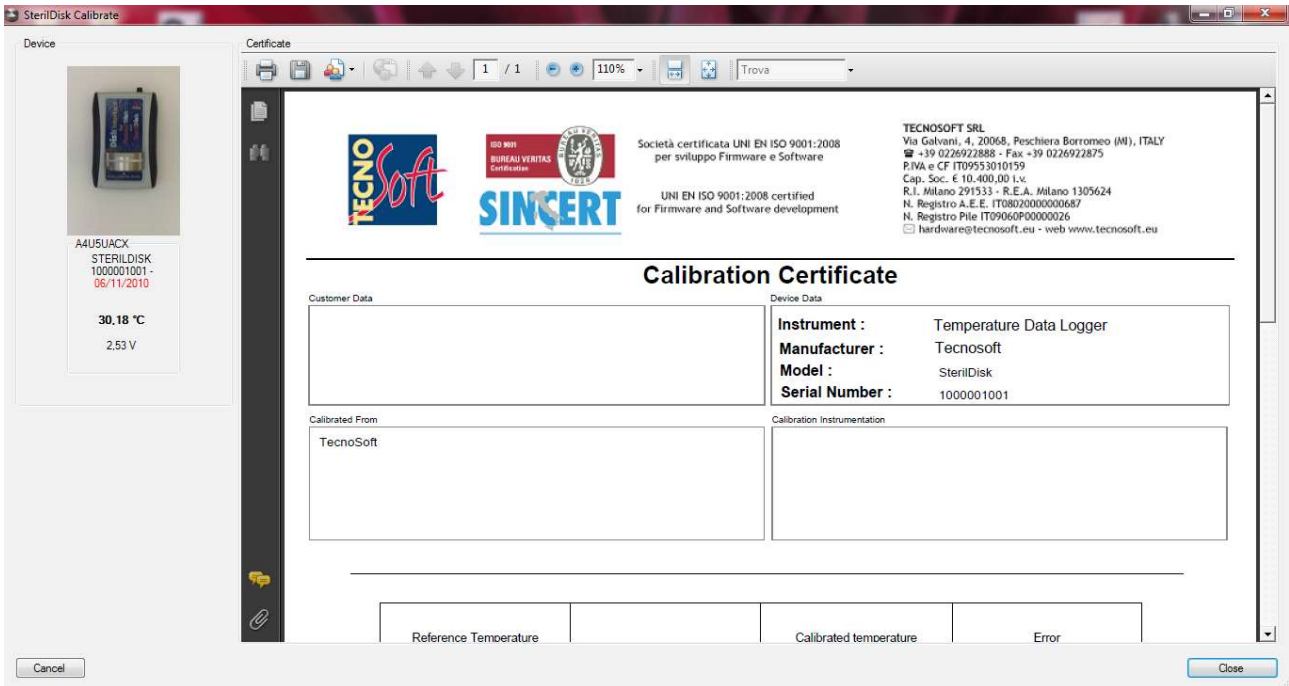


Save the reference file (CCD)

Click on **Save** to save a file with all these data in a CCD file. Send it to Tecnosoft to get a TCD file for calibration. You can also load a TCD file here, by clicking on **Load**.

Calibrating a device

When you get the CCD file from Tecnosoft, insert the logger in the interface connected to the PC, click on **Calibrate** from the *Main Window*, load the CCD file and click on **Ok** and the device will be calibrated.
 In order to properly upload calibration data in a device you must use the same device (serial number) from which the acquisitions come from and the same USB hardware key.



If you want to customize your certificate, ask to Tecnosoft.

Calibration procedure

Calibration is a delicate process requiring good instrumentation and skilled people.

Instrumentation

You will need:

- a calibration bath with fluid (water or silicon oil). Dry calibrators are less stable and accurate;
- a reference thermometer. NIST or similar calibration certificates are necessary for the reference thermometer.

Procedure to follow with Tecnosoft data loggers

1. Use a PC, possibly with time calibrated with an official time standard (i. e. <http://www.time.gov/timezone.cgi?UTC/s/0/java>)
2. Start the data loggers with an acquisition rate of 30 seconds (1 minute for Tempsticks). Use the PC with the time standard to start the acquisition.
3. Put the loggers in the calibration bath using appropriate stainless steel holdings according to the calibration bath.
4. Put the reference thermometer probe close to the sensing point of the data logger. Many errors are due to the different depth of the data logger probe and the reference thermometer. Also horizontal different positions can cause errors.
5. Set the first temperature on the calibration bath controller.
6. Wait for the stability. For our purposes a bath starts to be stable when the reference temperature is stable within $\pm 0.1^{\circ}\text{C}$ in 10 minutes.
7. Wait for at least 20 minutes and read the reference thermometer; read the time from the PC with the official time standard and write the values.
8. Wait for at least 2 minutes before changing setting.
9. Set the second calibration temperature on the calibration bath controller.
10. Repeat points 6, 7, 8.
11. Repeat points 5 to 10 for the other temperature points. A total of 4/5 points are suggested.

Troubleshooting

Sometimes I cannot connect to any SterilDisk

There can be several causes for a communication problem (interface not found, TecnoCOM Port TimeOut, ecc.).

Be sure that the interface is inserted correctly, that the cable is correctly inserted in the PC and that the logger is correctly inserted in the interface (or in the adapter if it is a cylinder logger).

Be sure the drivers are installed correctly, from the Control Panel of Windows – System – Hardware – Device manager: if the interface name is next to an attention sign, it means the drivers are not installed correctly.

If you changed the port to which the interface was connected to, you will have to install the drivers again.

Check you have selected the USB port in the Configuration of the SPD.

It might happen that the USB drivers of the *Disk Interface* are in conflict with some other drivers or applications installed on the PC. If you face a communication error, try to disconnect the Interface and reconnect it again to the PC and try to communicate again. If it should fail, please contact Tecnosoft technical centre.



Tecnosoft s.r.l.

Via Galvani, 4 - 20068 Peschiera Borromeo (Milano) - telephone +39 02 26922888 - fax +39 02 26922875
e-mail: info@tecnoSoft.eu - web: www.tecnoSoft.eu

Certified UNI EN ISO 9001:2008 fo Software development

