SMART CERTIFICATE – v.1.2.5

USER MANUAL

Summary

1. INTRODUCTION

Smart Certificate is a software that provides the solution for obtaining calibration data from ECILCAL SMART FULL dry block series to the computer, via a USB connection, making it possible to save the data and/or generate a PDF certificate, providing agility and practicality in issuing certificates.

The purpose of this manual is to guide users in using all the software's features, ensuring a better user experience.

2. MINIMUM REQUIREMENTS

For the software to work, you need a computer that meets the minimum requirements, which are:

- **Operating System:** Windows 7, 8, 8.1, 10 or 11.
- **Storage:** 130MB of free space.
- **Program:** PDF Viewer.

3. INSTALLING ON THE COMPUTER

Click on the link below:

https://ecil.com.br/SMART-CERTIFICADO-UPDATE/

Download the corresponding version, unzip the "**Setup.zip**" file and open the executable, follow the steps on the screen until completed. The program will be installed by default in the "**C:**" folder. It is mandatory that the user has administrative access to the installed path for the program to function correctly.

4. UNDERSTANDING THE INTERFACE

Through the installed executable 

, open the software. The interface clearly represents each field to be filled in by the user and the data to be obtained from the dry block.

4.1. Main Screen

The main screen is divided into groups, which contain fields that must be filled in by the user manually or by the software when the button  is clicked. See item **5. MAKING THE COMPUTER X DRY BLOCK CONNECTION.**

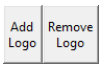
Below are the groups contained in the interface:

Issuer Data: "**Name**", "**Address**", "**Information 1**" and "**Information 2**" to be filled in by the user.

Client Data: The user must fill in the fields: "**Client**", "**Address**" and "**Client document**".

Unit Data: The software will fill in the fields "**Calibration units**" and "**Serial number**" when the button  is clicked, the other fields in this group must be informed by the user.

Calibration Procedure, Calibration Results and Notes: The fields contained in these groups have standard texts, which can be changed by the user.

Certificate Data: The user must enter the certificate issuance data as well as the technical person in the fields. It is also possible to add or remove a logo, using the corresponding buttons. 

Data Obtained: This group contains the fields that are filled in by the software when the user clicks on the "**Get Data**" button  . If the "**Keep certificate and validity data**" button is checked, the software will not obtain the certificate and validity data from the dry block/sensor and will leave it with the information provided by the user.

Table: It is automatically filled when the button  is clicked, except for the Uncertainty column where the values are calculated from the data registered within the program.

Standards Traceability Table: The data is filled in by the software when the user clicks the button  , except for the "**Traceability**" and "**Identification**" columns, which must be filled in by the user. The button "**Keep certificate and validity data**" must be checked if the user wishes to maintain the identification and traceability data already provided.

4.2. Top Menu

The top menu contains quick action buttons for the following functions:

New  - Clears screen data.

Load  - Loads a ".csf" file that contains calibration data.

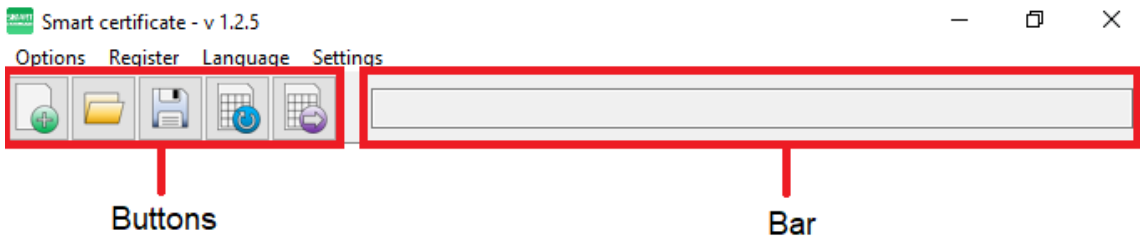
Save  - Saves screen data.

Get Data  - Obtains the results of the last dry block calibration.

Recover Data  - Retrieves the last results obtained from the dry block.

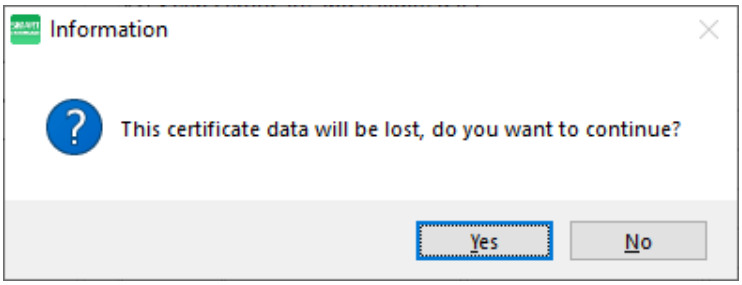
In addition to these buttons, the top menu contains a "**bar**", which is filled with the file location when the user saves or loads a certificate.

It is also possible to perform an action through "**Options**", located above the group of buttons. Next to it is "**Register**" which will be explained in the following chapters.

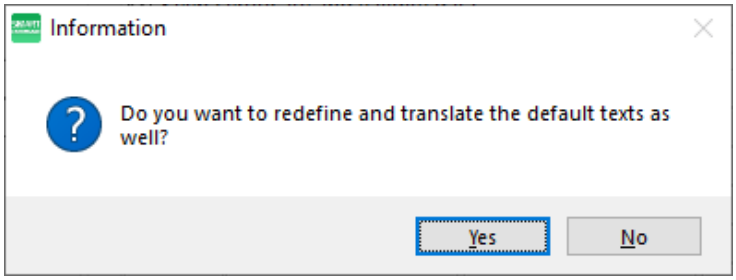


4.2.1. Changing the Language

To change the language, click on "**Language**" in the top menu and then on the desired language. A confirmation message will appear, select the "**Yes**" option.



Another confirmation message will appear, select the desired option.



If the option is "**Yes**", the default texts will be redefined and translated, if the option is "**No**", the default texts will be maintained. After choosing, the program will restart.

4.3. Generating a Certificate

Click on the button  in the top menu of the main screen and fill in the data according to item **4.1. Main Screen**, then click on Calculate Uncertainties on the desired channel and click on Generate Certificate. If a window appears asking for the file name, simply enter it and click "**Save**". The certificate will be issued according to the model in item **10. PDF FILE LAYOUT.**

Attention: Before performing an automatic calibration on the "**dry block**", select the correct unit for temperature: (°C) or (°F), as if the user changes it later, the results will not change.

5. MAKING THE COMPUTER X DRY BLOCK CONNECTION

With the supplied USB 2.0 type B cable on hand, connect one end to the oven and the other to the computer, open the software and check the "**Status**" field, which should say "**Connected**" and the button  enabled. If this does not happen, check that the cable and USB port are in perfect working order.

6. REGISTERING THE STANDARDS

The Smart Certificate Software allows the user to generate a certificate with uncertainty values, as the calculation is determined according to the Ecil calculation spreadsheet, and for this, it is necessary to register these standards with the essential values for the calculation.

The registrations that accompany the software are:

Dry block: BT, AT, MT (refer to the side of the dry block used and not the model).

Sensor: Pt100 IEC, Pt1000 IEC, TC B, TC R, TC S, TC K, TC J, TC N, TC E, TC T, Pt100 JIS, Pt100 SAMA, Cu10, Ni120.

EcilCal: Pt100 IEC, Pt1000 IEC, TC B, TC R, TC S, TC K, TC J, TC N, TC E, TC T, Pt100 JIS, Pt100 SAMA, Cu10, Ni120.

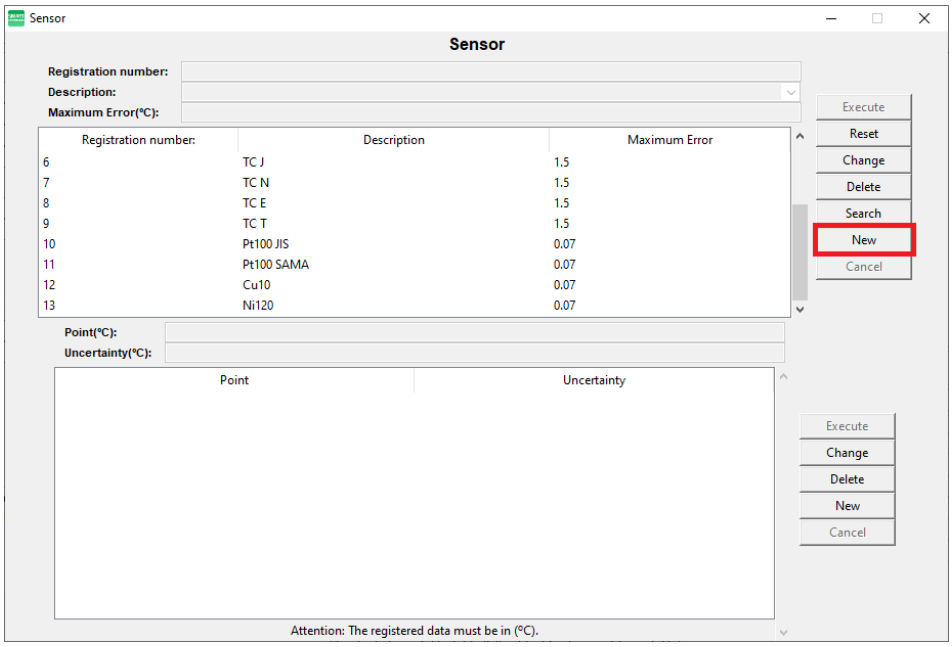
Note: If you wish to change these registrations, see items: **6.1. Standard Sensor, 6.2. EcilCal and 6.3. Standard dry block**

6.1. Standard Sensor

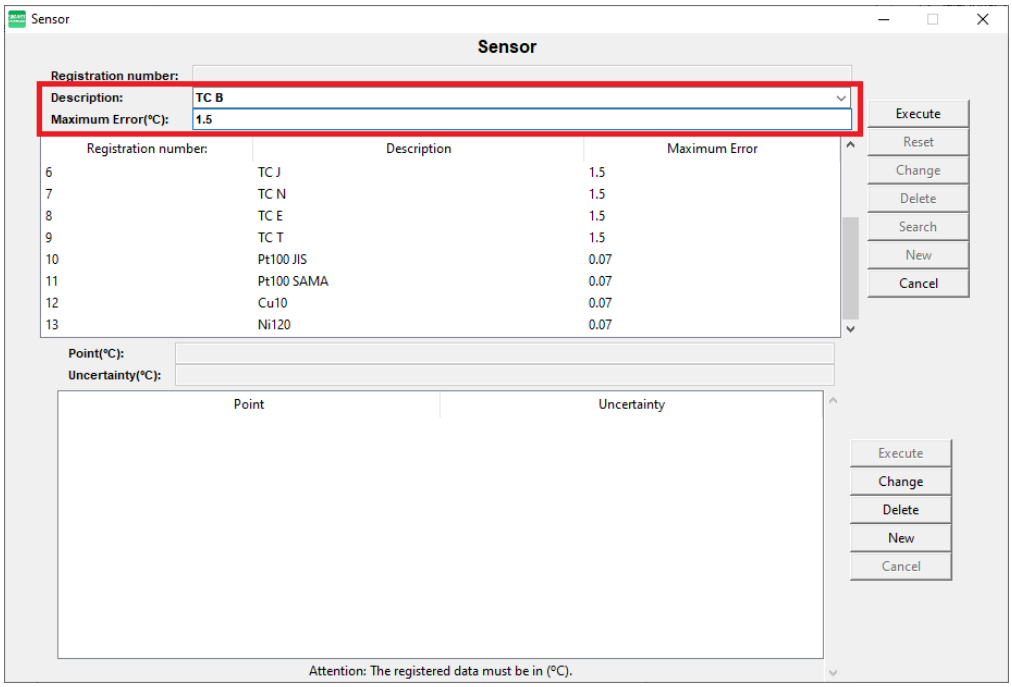
On the main screen, locate the top menu, click on “**Register**” and then “**Standard sensor**”.

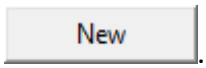
With the last certificate in hand, locate the following values: Maximum Error, Point and Uncertainty. Then, complete the steps below:

- Click on New.



- Fill in “**Description**” and “**Maximum Error**”.
- Click on Execute.



- Select the registered "**Registry**" by clicking with the left mouse button, and at the bottom, right side, click on 

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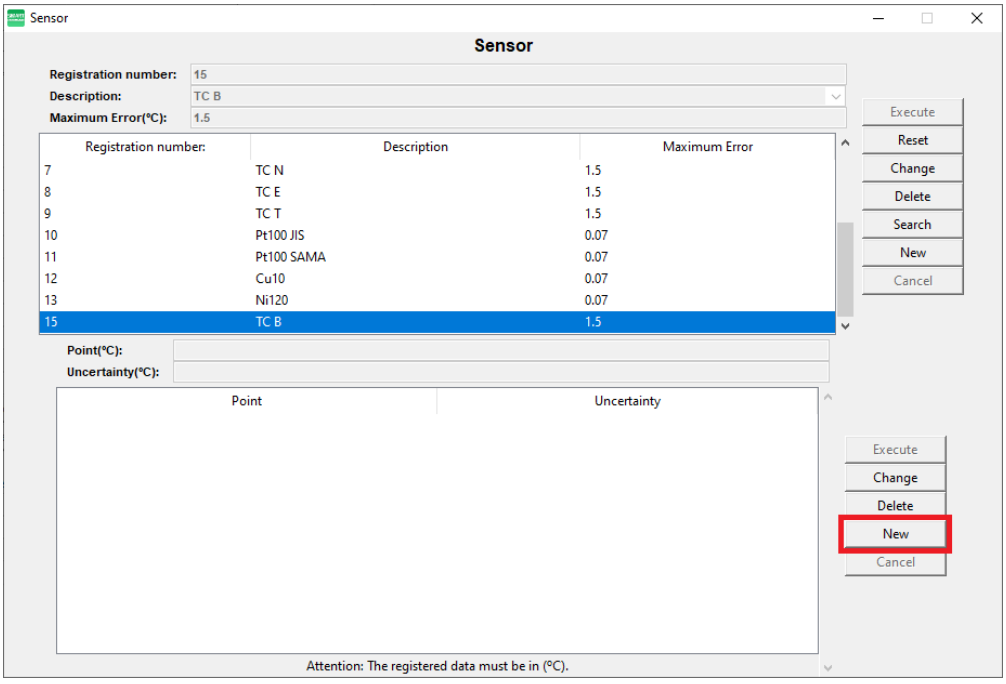
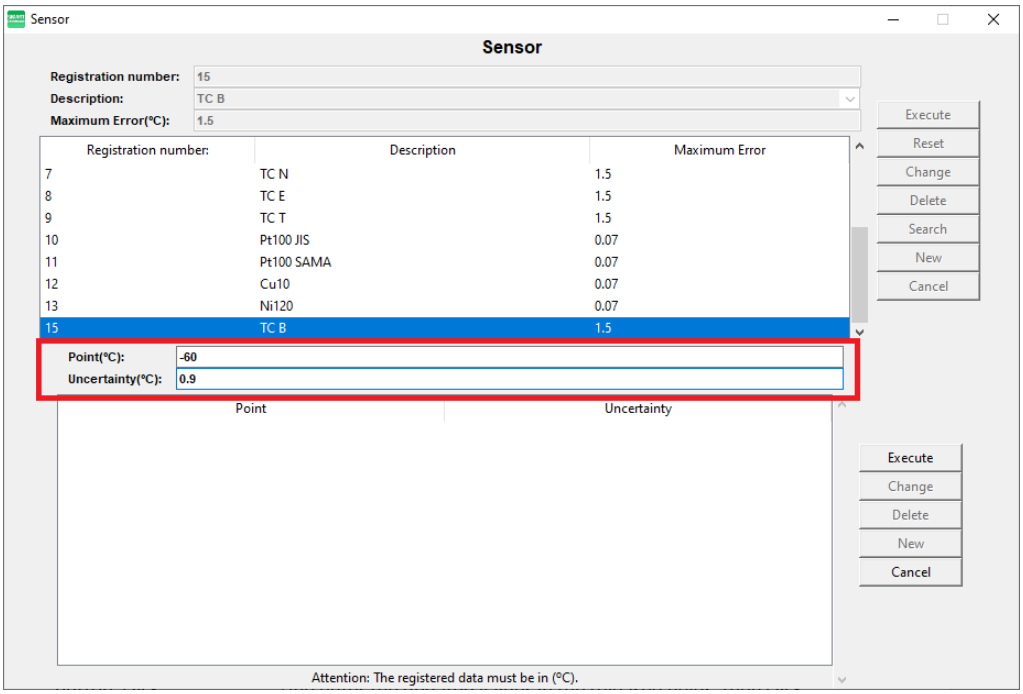


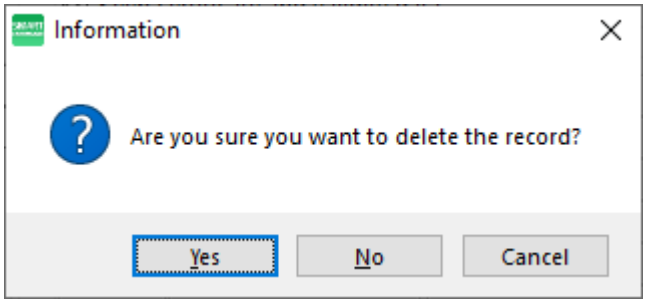
- Enter the "**Point**" and "**Uncertainty**".



- Click on Execute.

To "**Change**" a registered data, select the record by clicking the left mouse button, click on Change and enter the updated values in the released fields, then click on Execute.

To "**Delete**", select the registered data by clicking with the left mouse button and then click on Delete. A message will appear on the screen, inform the desired option.



To "**Search**", click on Search and enter the data in the released fields, and click on Execute.

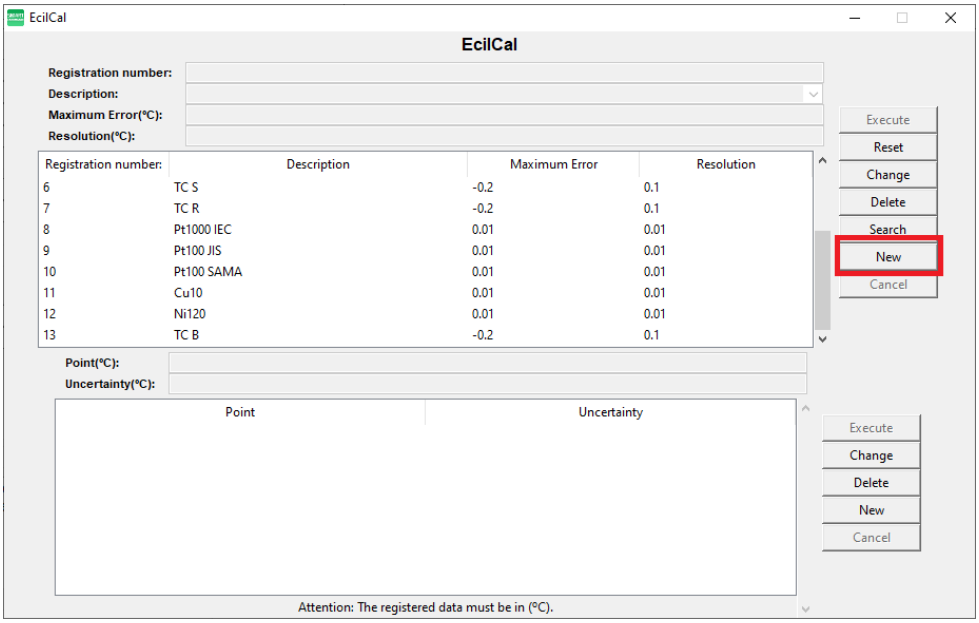
To view all records, click on Reset.

6.2. EcilCal

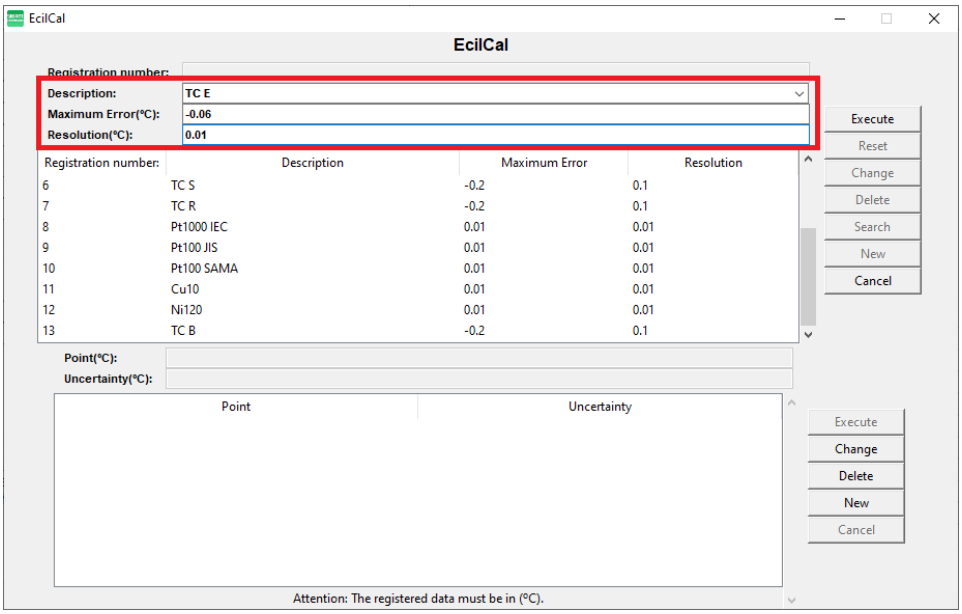
On the main screen, locate the top menu, click on “**Register**” and then “**EcilCal**”.

With the last certificate in hand, locate the following values: Maximum Error, Resolution, Point and Uncertainty. Then complete the steps below:

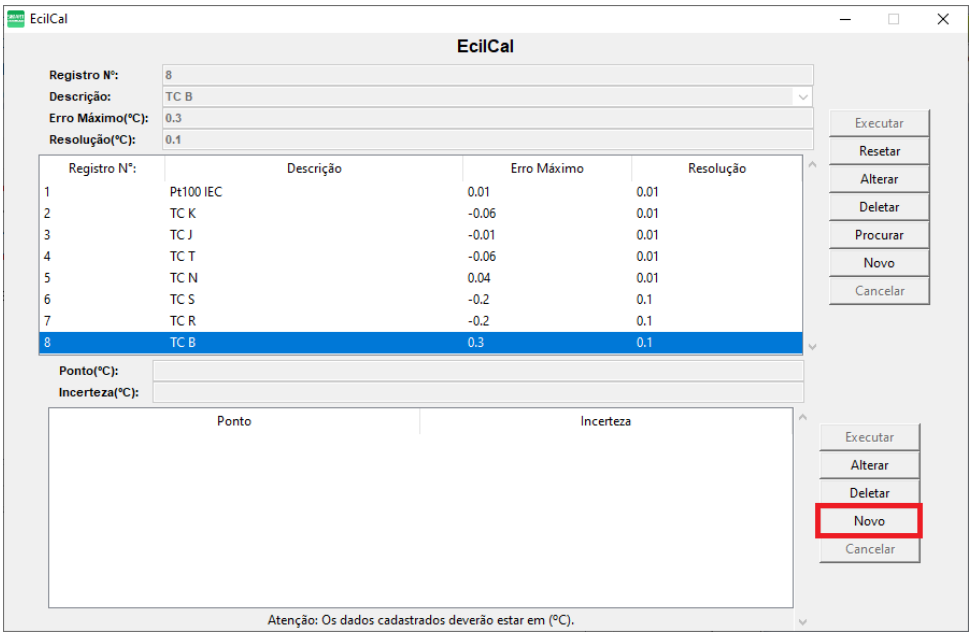
- Click on New.



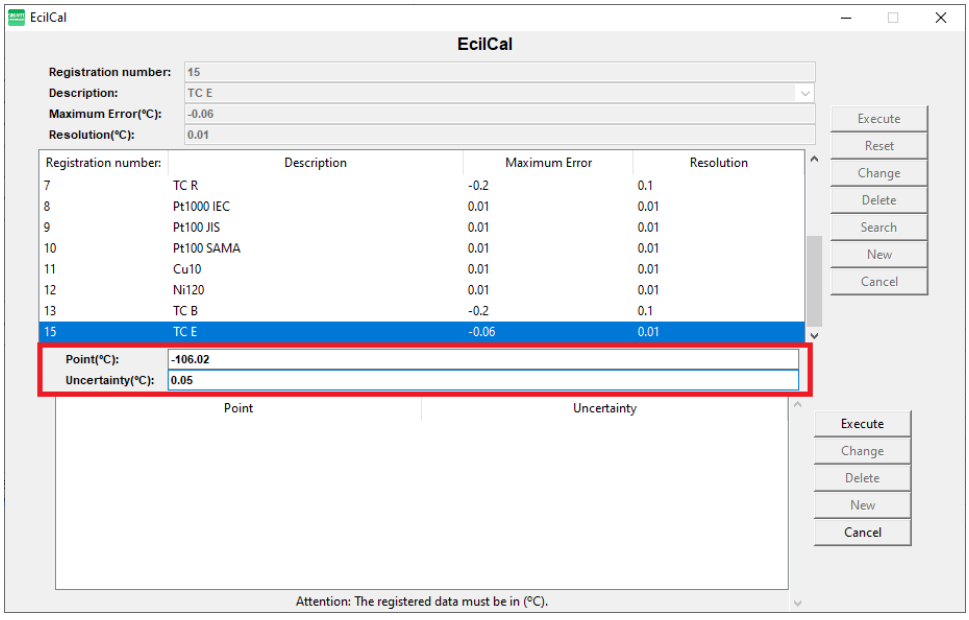
- Fill in “**Description**”, “**Maximum Error**” and “**Resolution**”.
- Click on Execute.



- Select the registered "**Registry**" by clicking with the left mouse button, and at the bottom, right side, click on New.



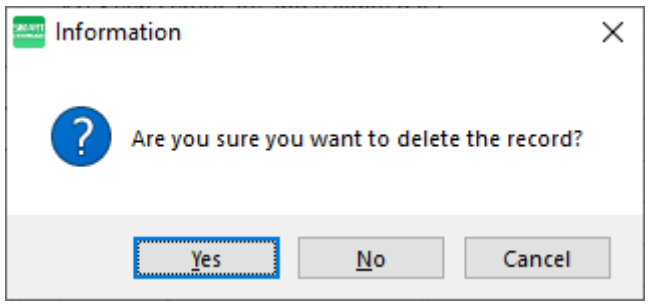
- Enter the "**Point**" and "**Uncertainty**".



- Click on Execute.

To "**Change**" a registered data, select the record by clicking the left mouse button, click on Change and enter the updated values in the released fields, then click on Execute.

To “**Delete**”, select the registered data by clicking with the left mouse button and then click on Delete. A message will appear on the screen, inform the desired option.



To “**Search**”, click on Search and enter the data in the released fields, and click on Execute.

To view all records, click on Reset.

6.3. Standard Dry block

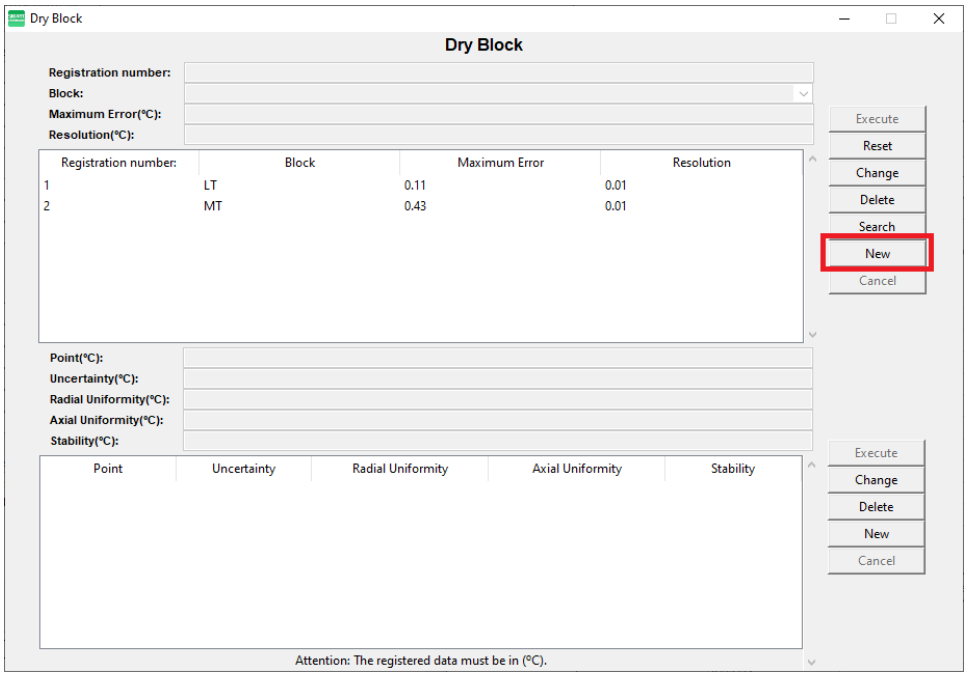
On the main screen, locate the top menu, click on “**Register**” and then “**EcilCal**”.

With the last certificate in hand, locate the following values: Maximum Error, Resolution, Point and Uncertainty. Then, complete the steps below:

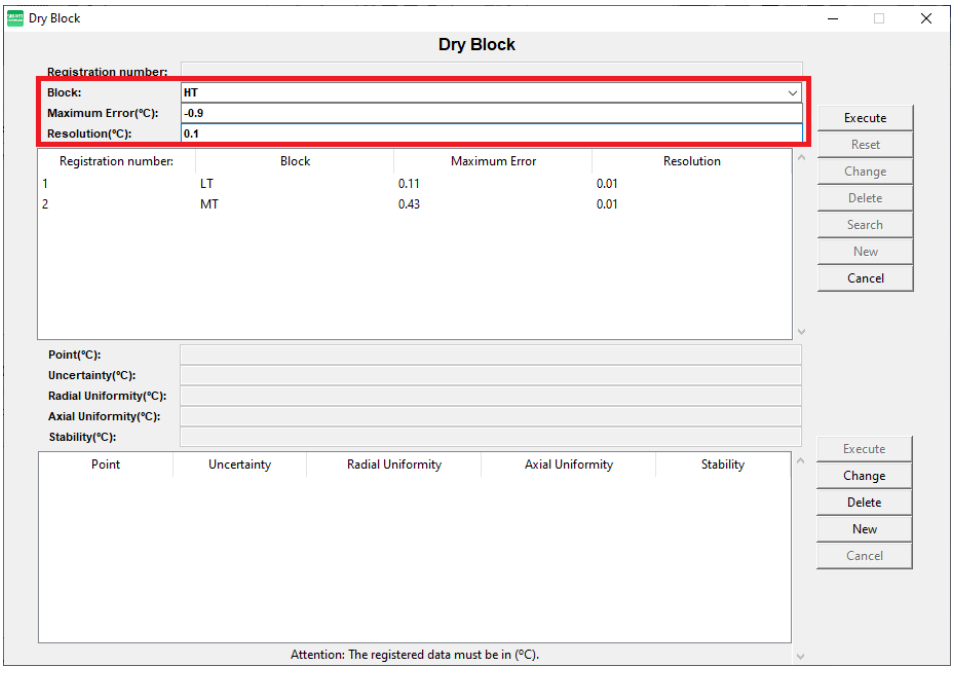
On the main screen, locate the top menu, click on “**Register**” and then “**Standard Dry block**”.

With the last certificate in hand, locate the following values: Maximum Error, Resolution, Point, Uncertainty, Radial Uniformity, Axial Uniformity and Stability. Then complete the steps below:

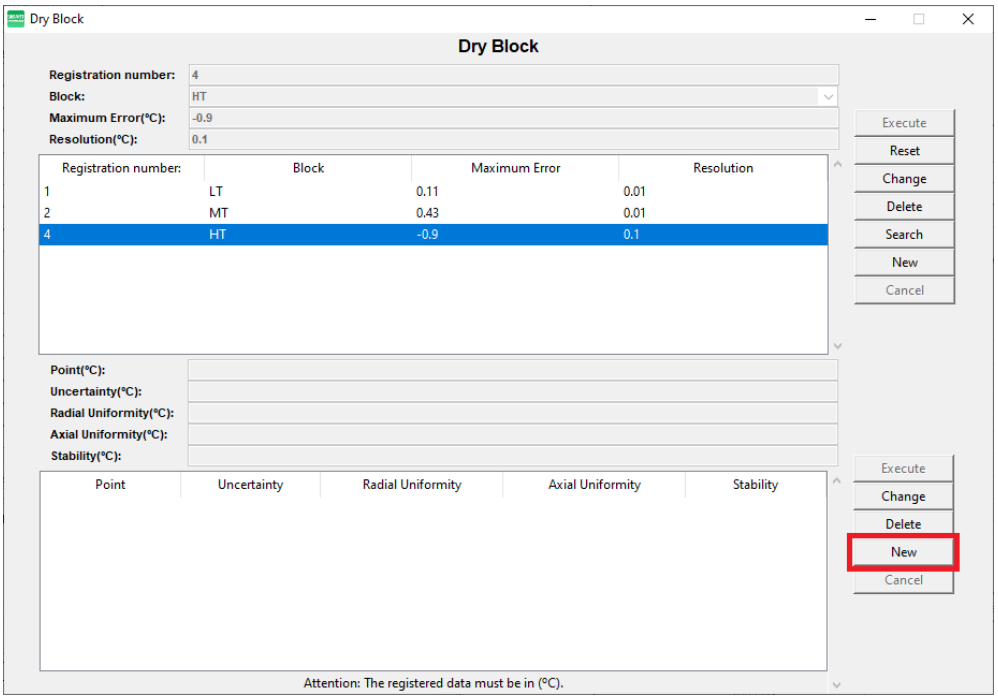
- Click on New.



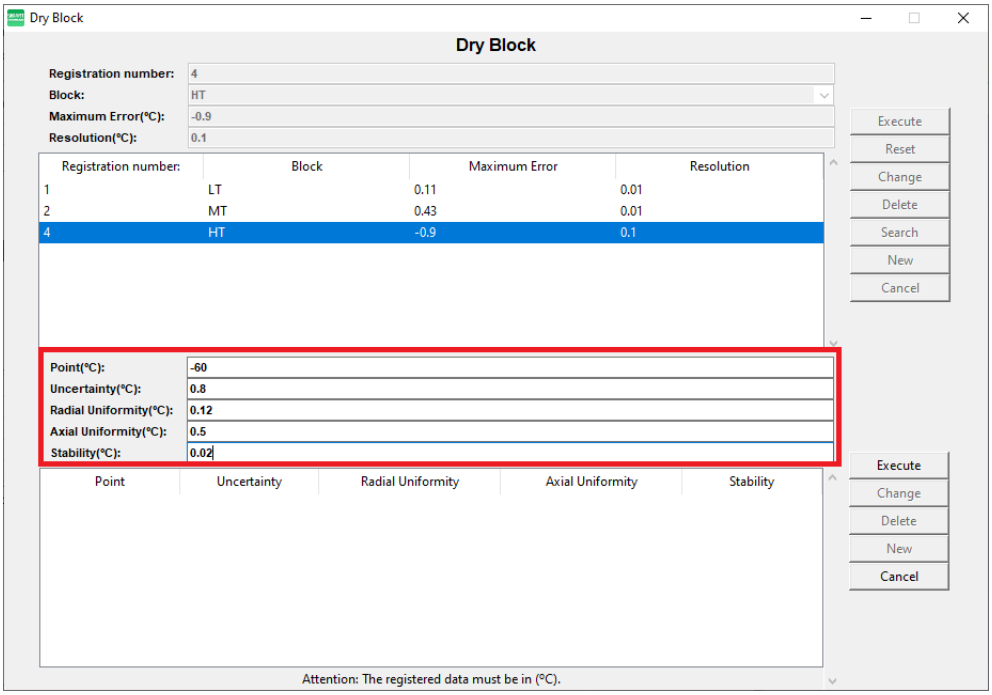
- Fill in “**Block**”, “**Maximum Error**” and “**Resolution**”.
- Click on Execute.



- Select the registered “**Registry**” by clicking with the left mouse button, and at the bottom, right side, click on New.



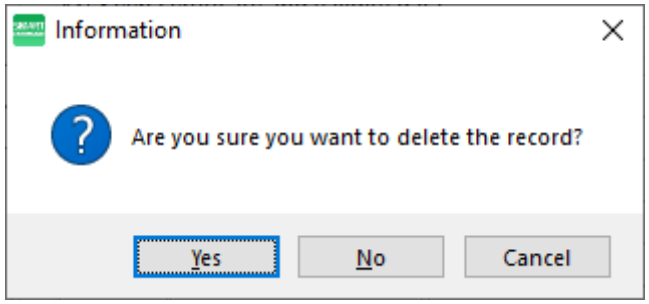
- Enter the "**Point**", "**Uncertainty**", "**Radial Uniformity**", "**Axial Uniformity**" and "**Stability**".



- Click on Execute.

To "**Change**" a registered data, select the record by clicking the left mouse button, click on Change and enter the updated values in the released fields, then click on Execute.

To “**Delete**”, select the registered data by clicking with the left mouse button and then click on Delete. A message will appear on the screen, inform the desired option.



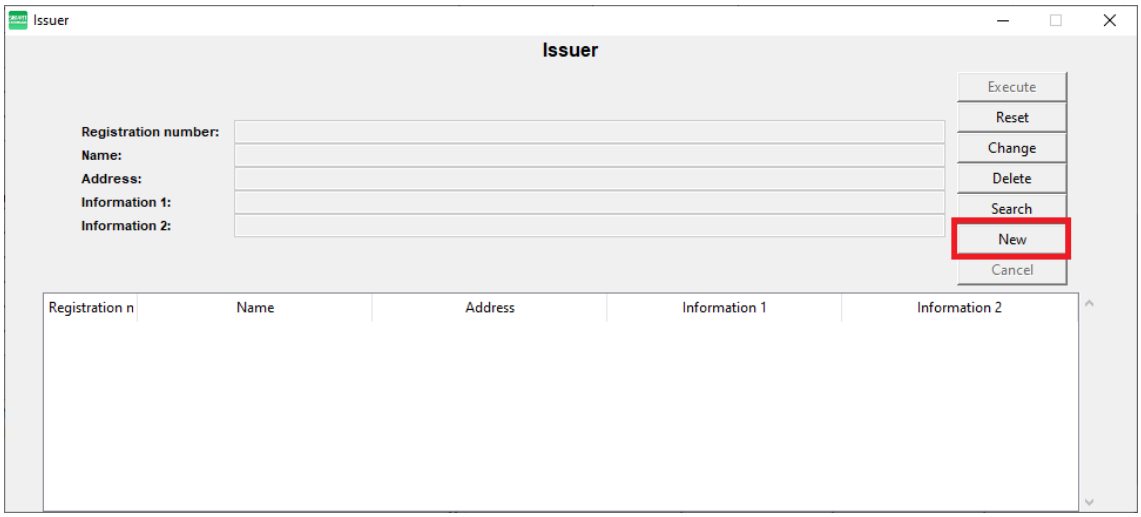
To “**Search**”, click on Search and enter the data in the released fields, and click on Execute.

To view all records, click on Reset.

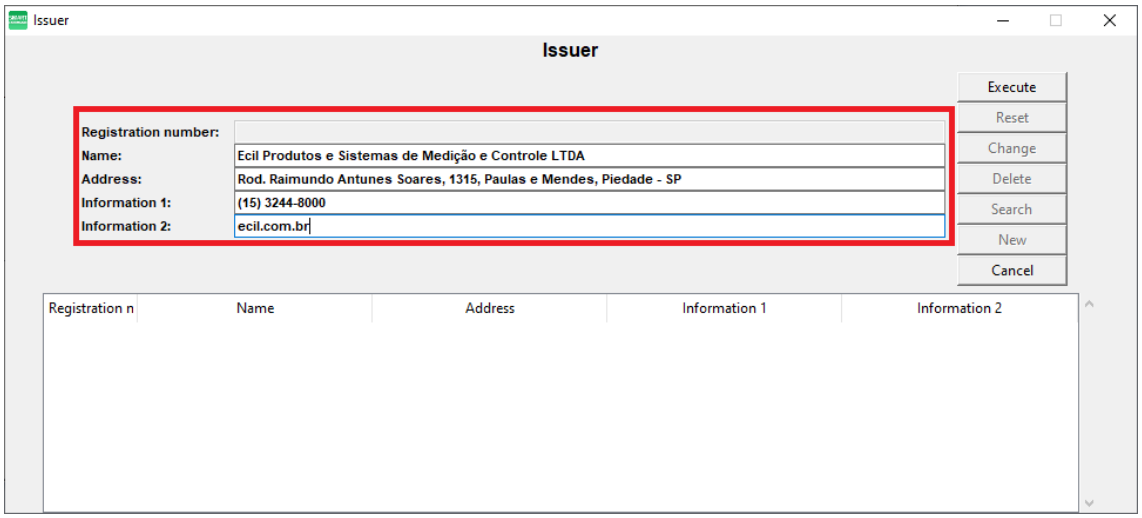
7. REGISTERING AN ISSUER

It is possible to register a certificate issuer in the software, this registration is intended to minimize the time it takes for the user to complete the certificate. To register, follow the steps below:

- Locate the top menu on the main screen, click on “**Register**” and then “**Issuer**”.
- Click on New.

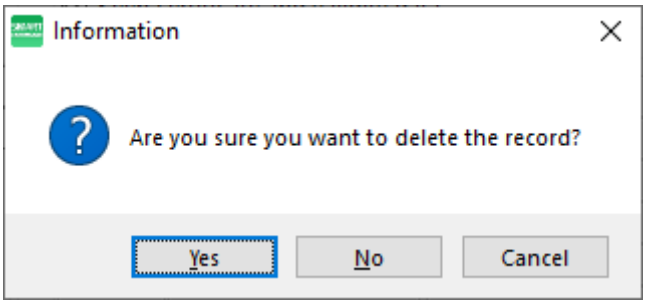


- Fill in “**Name**”, “**Address**”, “**Information 1**” and “**Information 2**” (This information will appear in the footer of the certificate, see item **10. PDF FILE LAYOUT**).
- Click on Execute.



To “**Change**” a registered data, select the record by clicking the left mouse button, click on Change and enter the updated values in the released fields, then click on Execute.

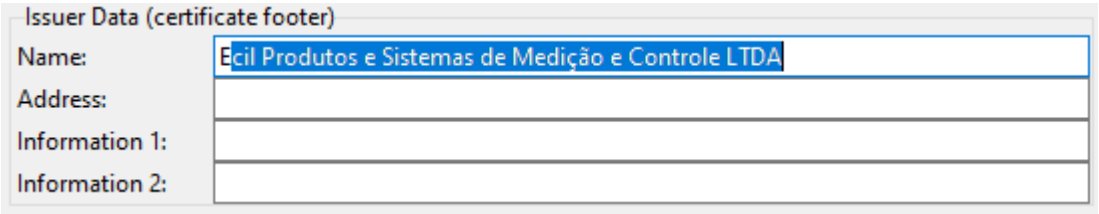
To “**Delete**”, select the registered data by clicking with the left mouse button and then click on Delete. A message will appear on the screen, inform the desired option.



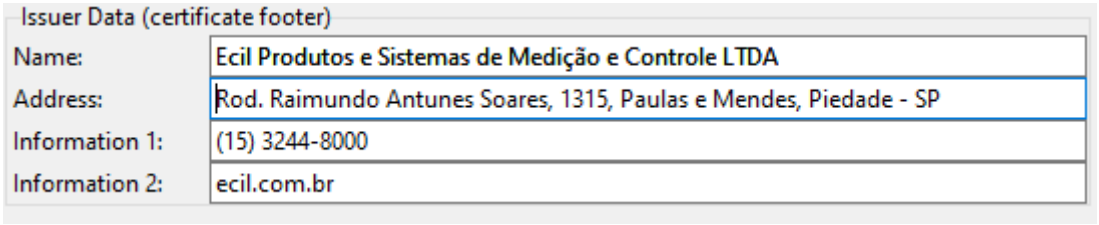
To "**Search**", click on Search and enter the data in the released fields, and click on Execute.

To view all records, click on Reset.

On the main screen, clicking  , locate the "**Name**" field in "**Issuer Data**". Enter the first letters of the registered issuer, this field will be automatically filled in.



By clicking on another field or pressing the "**TAB**" key, the "**Address**", "**Information 1**" and "**Information 2**" fields will also be filled.

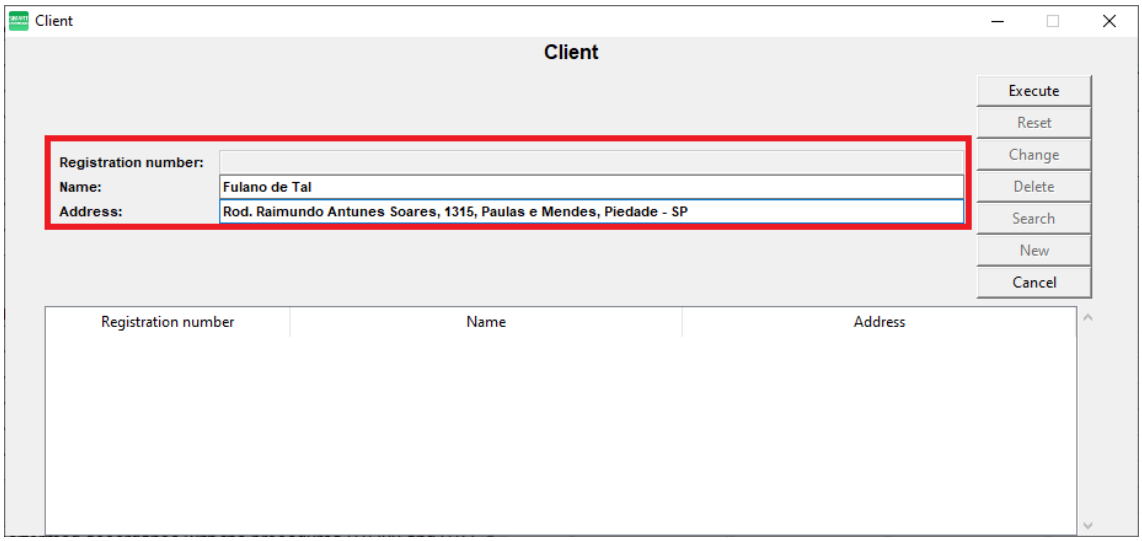


8. REGISTERING A CLIENT

It is possible to register customers in the software, this registration is intended to minimize the time it takes for the user to fill out the certificate. To register, follow the steps below:

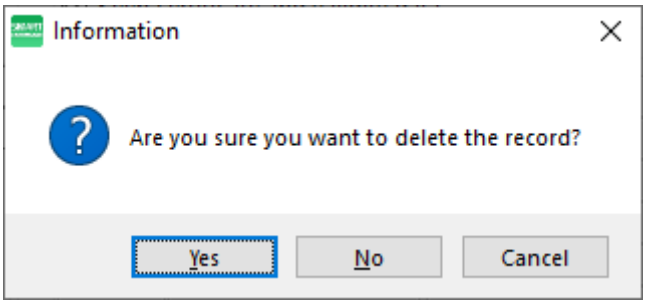
- Locate the top menu on the main screen, click on "**Register**" and then "**Client**".
- Click on New.

- Fill in "**Name**" and "**Address**".
- Click on Execute.



To "**Change**" a registered data, select the record by clicking the left mouse button, click on Change and enter the updated values in the released fields, then click on Execute.

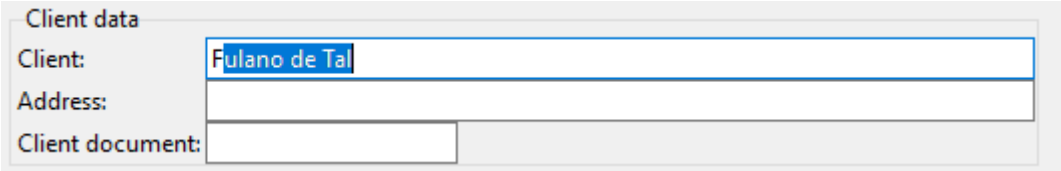
To "**Delete**", select the registered data by clicking with the left mouse button and then click on Delete. A message will appear on the screen, inform the desired option.



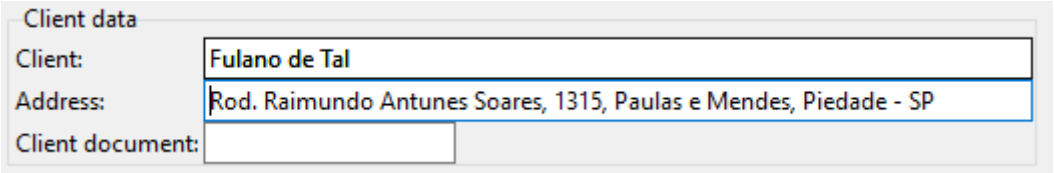
To "**Search**", click on Search and enter the data in the released fields, and click on Execute.

To view all records, click on Reset.

On the main screen, clicking  , locate the "**Client**" field under "**Client data**". Enter the first letters of the registered issuer, this field will be automatically filled in.



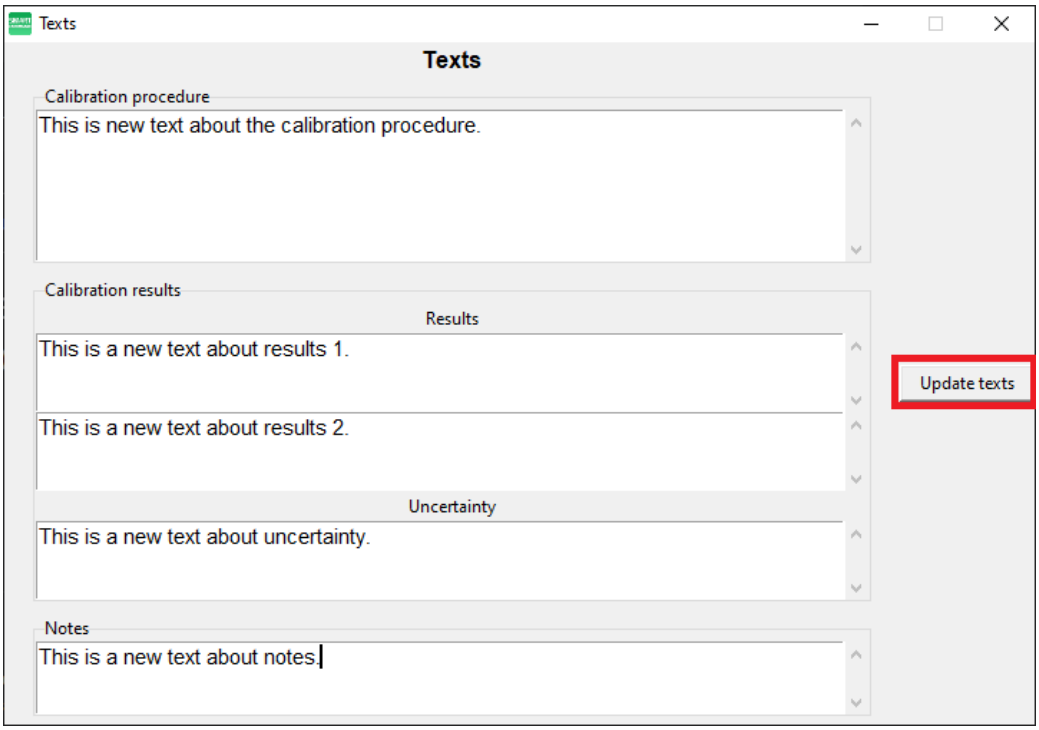
By clicking on another field or pressing the "**TAB**" key, the "**Address**" field will also be filled in.



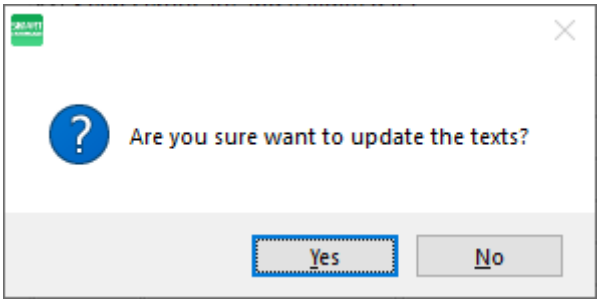
9. CHANGING THE DEFAULT TEXTS

The Software has standard texts referring to the "**Calibration Procedure**", "**Calibration Results**", "**Uncertainty**" and "**Notes**". These texts can be changed, just follow the steps below:

- Locate the top menu on the main screen, click on "**Register**" and then "**Standard Texts**".
- Change the texts as desired and click on Update texts.



- In the confirmation message, just click "**Yes**".



On the main screen, clicking  , locate the bottom left corner and observe. The "**Standard Texts**" have been changed.

10.PDF FILE LAYOUT

The layout of the PDF file generated by the software will follow the example below:

ECIL temperatura industrial

Calibration Certificate

Number: 01
Rev.: 0
Page 1 of 1

CLIENT: Fulano de Tal
ADDRESS: Rod. Raimundo Antunes Soares, 1315, Paulas e Mendes, Piedade - SP
CLIENT DOCUMENT: #####

OBJECT OF CALIBRATION: RTD PT-100
SERIAL NUMBER: TAG CANAL 2
CLIENT ID: ####
MANUFACTURER: Ecil
LENGHT: 6 mm
DIAMETER: 320 mm

CALIBRATION PROCEDURE:
The calibration was performed accordance with the procedures IT0388 and IT0390 in their current revisions, according to the instrument ranges.

CALIBRATION RESULTS:
The results presented below refer to the status of the instrument as received, with the error being the difference between the indication of the sensor/instrument under calibration and the standard.

Point (ºC)	Standard (ºC)	Test (ºC)	Error (ºC)	Uncertainty (ºC)
100.00	99.48	99.59	0.11	0.25
121.00	120.67	120.85	0.18	0.27

The results presented above for the calibrated points refer to the average of the readings.

The reported expanded measurement uncertainty was performed considering the uncertainties, errors, stability and radial and axial uniformity of the equipment.

1. Temperature conversions based on ITS 90. 2. Environmental conditions: Controlled.

TRACEABILITY OF THE STANDARDS USED:
1. Standards:

Identification	Type	Validity	Certificate	Traceability
FOR-01	LT Block	8/23/25	c999-24	RBC
SEN-01	Pt100 IEC (4 wires)	8/23/25	c1000-24	RBC

Raul Salles
Technical manager
Calibration date: 8/23/24
Date of issue: 8/23/24

Please note that the data provided on the main screen appeared in the PDF file. Under “**Rev**” contains the current page number and total pages.

Attention: Be careful with the number of characters entered in the fields: “**Issuer Data**” and “**Certificate Data**”, as it will make viewing difficult.

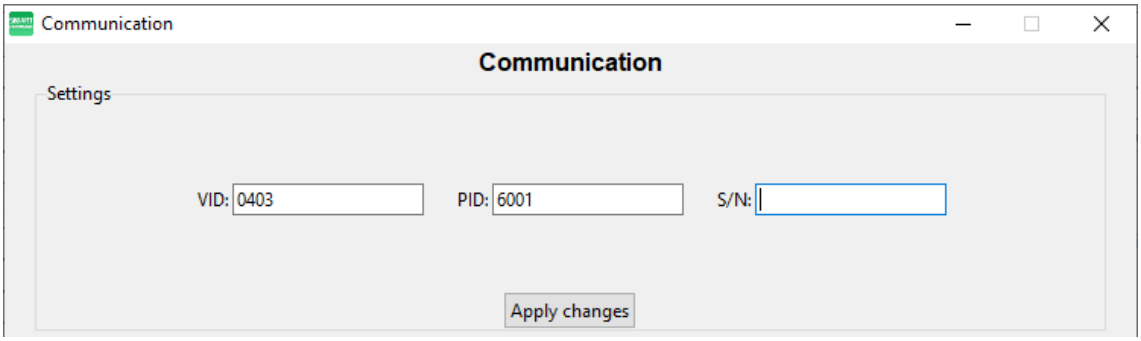
11. COMMUNICATION SCREEN

ECILCAL SMART FULL dry block series manufactured before 02/24/2023 do not have S/N for dry block x computer communication, and this can be resolved by following the steps:

1 – On the main screen, click on “**Settings**” and then “**Communication**”.

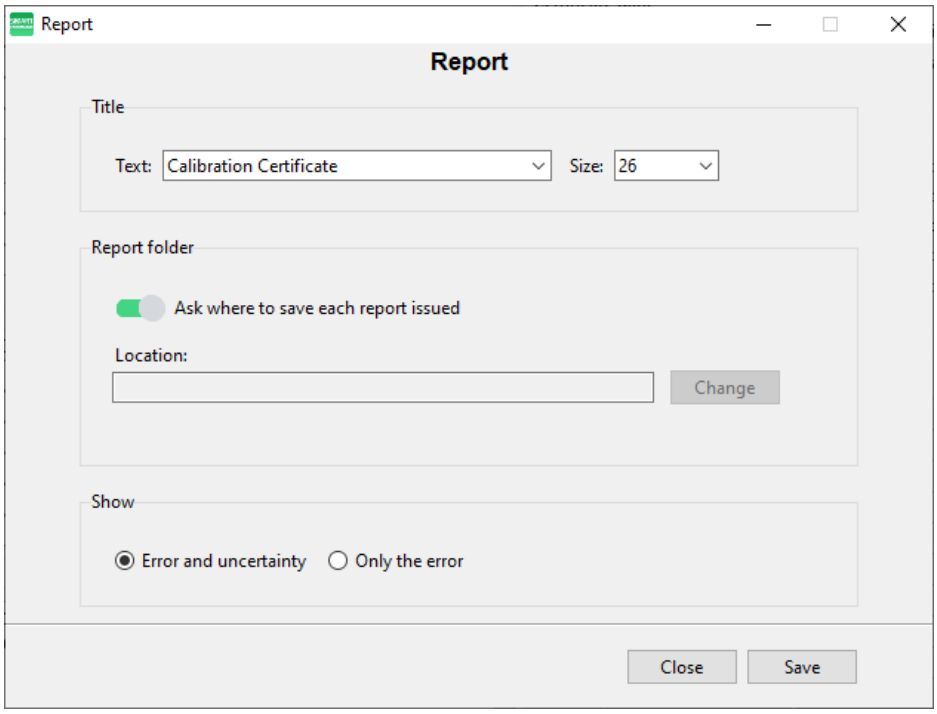
2 – In “**S/N**” delete the entire number, leaving this field blank.

3 – Click on “**Apply changes**”, and in the confirmation message click on “**Yes**”.



12. REPORT SCREEN

In the software, you can change report settings. To access this screen and change the settings, click on “**Settings**” and right after “**Report**”, the screen will be displayed:



1. Title

- **Text:** Here, the user can choose the title that will be displayed in the report. In the example in the image, the selected title is "**Calibration Certificate**".
- **Size:** This field allows the user to define the font size of the title. The value selected in the image is 26.

2. Report Folder

- **Ask where to save each report issued:** This option is enabled, which means that each time a report is issued, the software will ask the user where they want to save the file.
- **Location:** If the above option is not activated, the user can define a default location to save the reports. Since the "**Change**" option is disabled in the image, the "**Location**" field is blocked.

3. Show

- **Error and uncertainty:** This option is selected, indicating that the report will display both errors and uncertainties in the measurements.
- **Only the error:** This option, when selected, causes the report to show only errors, without including uncertainties.

4. Action Buttons

- **Close:** Closes the window without saving changes.

- **Save:** Saves the settings made.

13. TROUBLESHOOTING

The software generates a message when an error is found, which may be in the following situations:

Access denied

This error message is generated when the computer user does not have the necessary permissions for the selected folder.

Solution: Ask the system administrator for access to the selected folder.

Dry Block not initialized

It is generated when the oven is turned on and connected correctly via USB but is not initialized.

Solution: Touch the dry block display to initialize.

Dry Block has not data to transmit

This message is generated when the dry block has not yet been calibrated, that is, there is no data recorded in memory.

Solution: Perform an automatic calibration on the dry block.

Dry Block is in automatic calibration

It is generated when the oven is currently performing an automatic calibration.

Solution: Wait for the calibration to complete.

Impossible to proceed with the certificate issuance because it is necessary to register this type of sensor for the uncertainty calculation

This message appears when the software was unable to locate the sensor type registration on the "**EcilCal**" screen.

Solution: Register the type of sensor on the "**EcilCal**" screen

Impossible to proceed with the certificate issuance because it is necessary to register the standard for the uncertainty calculation.

This message appears when the software was unable to locate the default sensor/dry block registration.

Solution: Register the default sensor on the "**Standard Sensor**" screen or register the side of the dry block on the "**Standard dry block**" screen.

The point of °C is outside the range and therefore it was not possible to calculate

This message is generated when the program tries to calculate the uncertainty for the point, but this point is outside the range in one of the possible registers: "**EcilCal**", "**Standard sensor**" or "**Standard dry block**".

Solution: Register the point on the corresponding screen.

There was an error in communication

Appears when the user clicks on "**Get data**", but there was a communication failure while extracting data from the dry block.

Solution: Check the dry block x computer connection and if the message persists, replace the USB cable.

Unable to open logo, please remove and insert again

This message is generated when the software cannot locate the logo in the specified path.

Solution: insert the logo again using the "**Add Logo**" button.

Other errors

During registration, the system may display error messages if the user fills in the information incorrectly.

Solution: Make sure that all fields have been filled in and that information is not being entered in duplicate.