User manual

TiThermoBasic

Software for the configuration of the temperature control unit

CONTENTS

1. General description Page 4

2. Minimum system requirements Page 4

3. Selection of functions Page 5

4. Work area Page 7
   - 4.1 Window “System” Page 7
   - 4.2 “Control Unit” Window Page 10
   - 4.3 “Library profiles” Window Page 11

5. Example of a project Page 16
   - 5.1 System configuration Page 17
   - 5.2 Configuration of Weekly programs Page 20
   - 5.3 Configuration of Holiday program Page 24

6. Connecting to the Control Unit Page 25

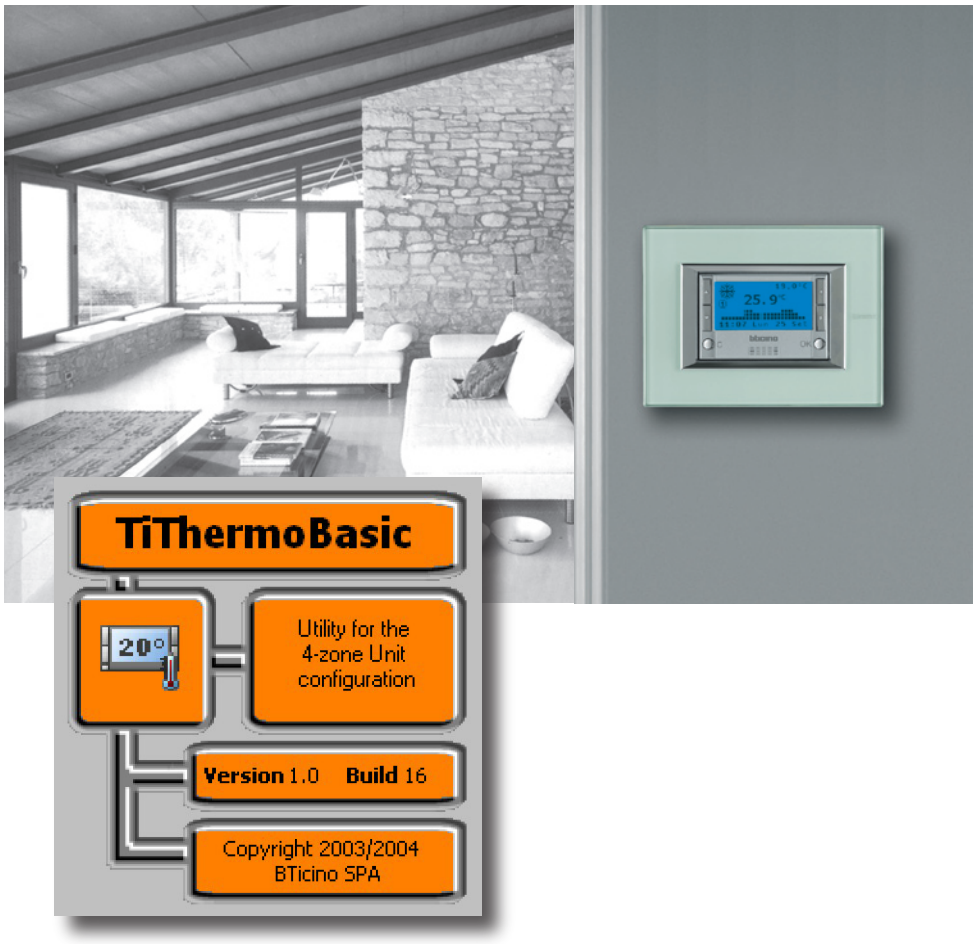
7. Functions enabled while connecting Page 27
   - 7.1 Upload Page 27
   - 7.2 Download Page 28
   - 7.3 Compare Page 30
   - 7.4 Diagnosis Page 30

8. Firmware update Page 31

1. General description

TiThermoBasic is a tool which lets you create or modify, through a simple and intuitive graphical user interface, the configuration to be transferred to the temperature control unit, thereby defining and customising the parameters linked to the temperature control system as well as the profiles of the different operational programmes.

The software can also update the firmware of the unit with a special function.



2. Minimum system requirements

Hardware requirements

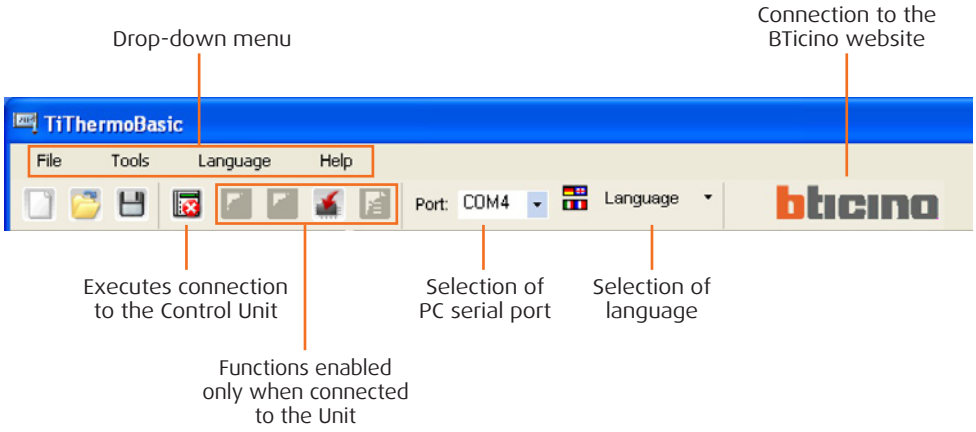
- Personal Computer with Pentium processor 400MHz or higher
- CD-ROM drive
- SVGA graphics card with resolution 800x600
- RAM 128 Mb

Software requirements

- Windows 2000 / XP
- Internet Explorer ver. 5.5 or higher

3. Selection of functions

The main functions that can be executed with TiThermoBasic can be selected by using the icons in the toolbar or by opening drop-down menus, thus selecting the various options. Some functions are available only after making a connection between the PC and the Control Unit.



Toolbar

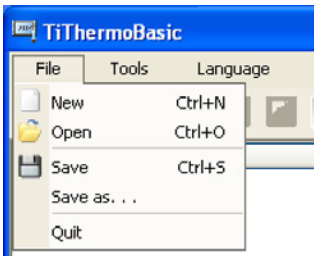
The followings functions are included in the toolbar:

- Creates a new project
- Opens an existing project
- Saves the current project
- Disables connection to Control Unit
- Loads the configuration present in the Control Unit (*)
- Downloads the configuration created in the Control Unit (*)
- Downloads the Firmware update in the Control Unit
- Executes the diagnosis procedure of the Control Unit (*)

(*) Functions enabled only if a connection to the temperature control unit has been enabled

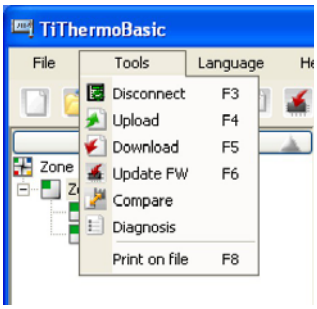
Drop-down menu

The followings functions are included in the drop-down menus:



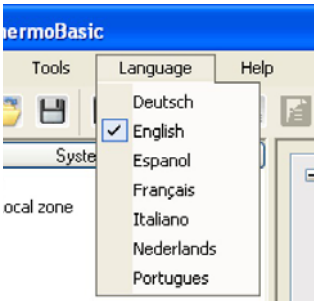
"File" menu

- **New** creates a new project
- **Open** opens an existing project
- **Save** saves the current project
- **Save as...** saves the project after requesting a file name
- **Quit** exits the program



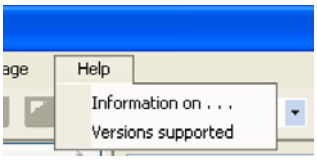
"Tools" menu

- **Connect/Disconnect** enables/disables connection to Control Unit
- **Upload** loads the configuration present in the device
- **Download** downloads the configuration created in the device
- **Update FW** downloads the firmware update
- **Compare** loads the configuration present in the system in order to compare it with the project opened
- **Diagnosis** loads the diagnosis information of the Control Unit and probes
- **Print on file** exports the configuration of the Control Unit in an Excel file (if Microsoft Excel is installed on the PC) or csv file (if Microsoft Excel is not installed).



"Language" menu

- **✔** selects the language of the application

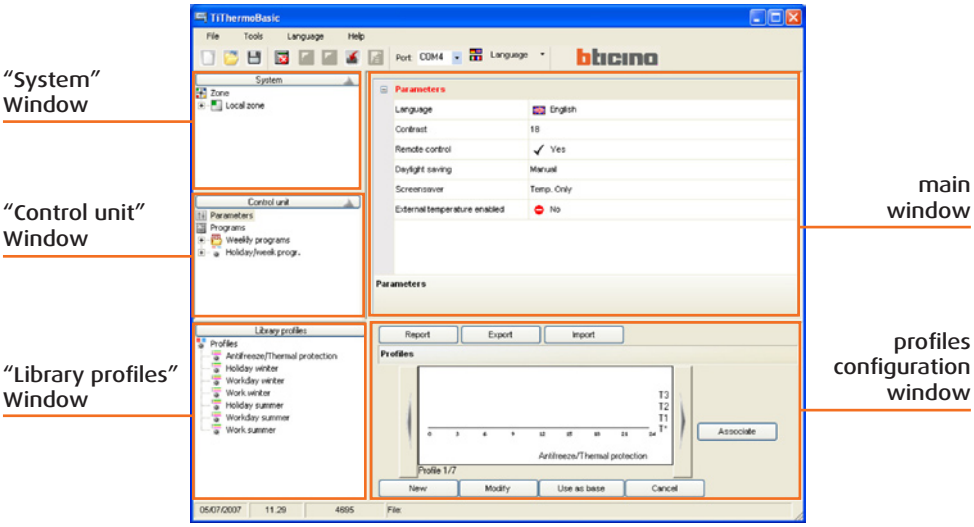


"Help" menu

- **About...** (Information on) Displays information on the TiThermoBasic programme
- **Supported versions** Displays the Firmware versions of the temperature control unit managed by the TiThermoBasic programme

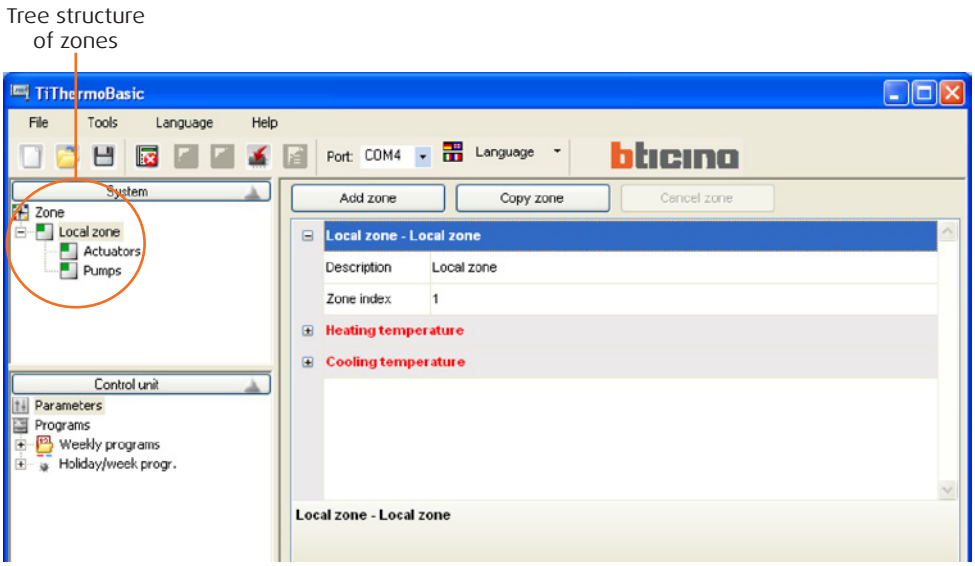
4. Work area

The following windows are included in the TiThermoBasic interface work area:



4.1 "Window" System

This window shows the tree structure of zones in the system.

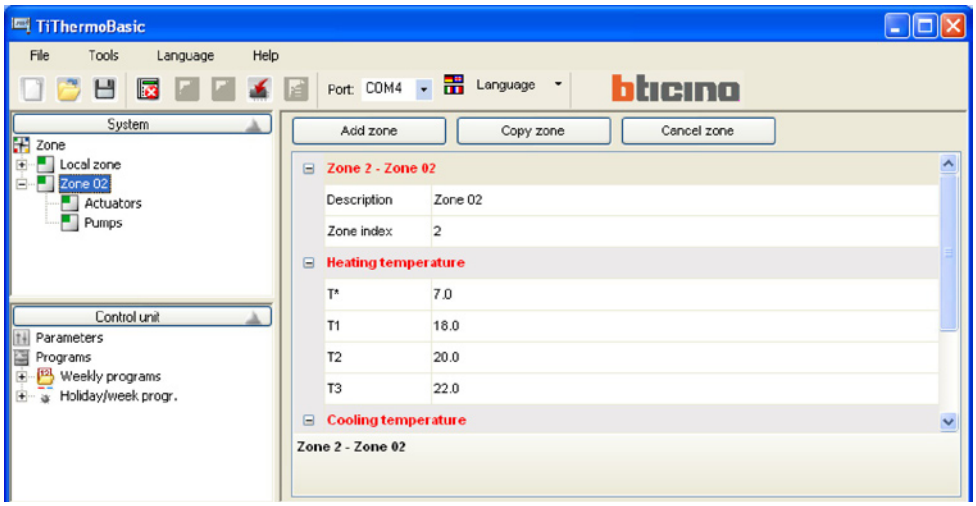


If you click the right key of the mouse in the tree structure of the zones, the following operations will be possible, depending on the zone selected (this is also possible by using the buttons in the main window):

- **Add zone** adds a new zone having the first available index
- **Add zone** adds a new zone having the first available address, thus copying the setup of the zone selected
- **Elimina zona** cancels the zone selected

⚠ "Cancel zone" cannot be applied to the local Zone

When a zone is selected (e.g..: Zone 2), the **Zone** and **Temperature** setup section is displayed in the main window:

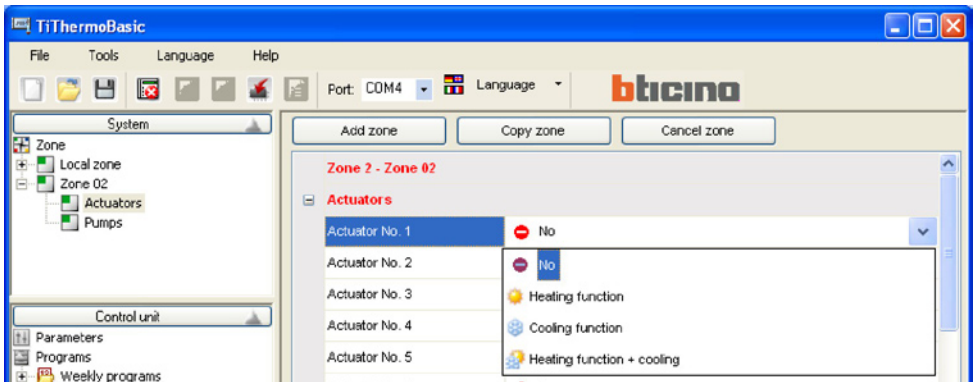


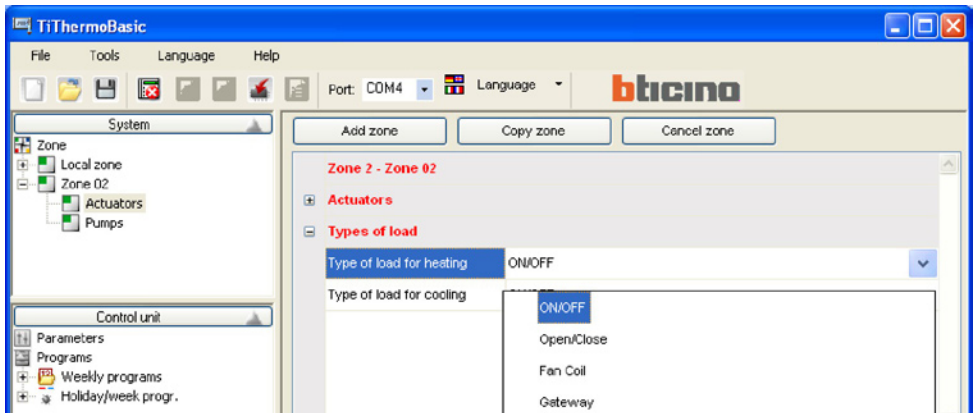
Description	Name of the zone (e.g. Living room)
Zone index	Order number of the zone. Maximum value = 4
Heating temperature	Setup for four levels of temperature
Cooling temperature	Setup for four levels of temperature

For every zone in the tree-structure menu, it is possible to select:

- **Actuators**

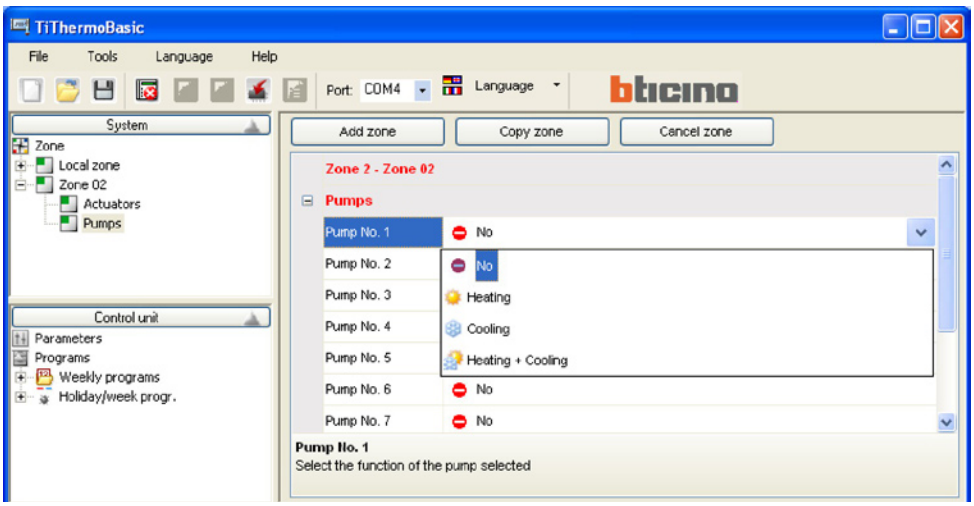
By clicking a single **Actuator** (e.g.: Actuator No. 1) in the main window, it is possible to select the type of function required (heating, cooling, heating + cooling or no function) and the **Type of load** for the function selected (ON/OFF, Open/Close, Fan Coil, Gateway).

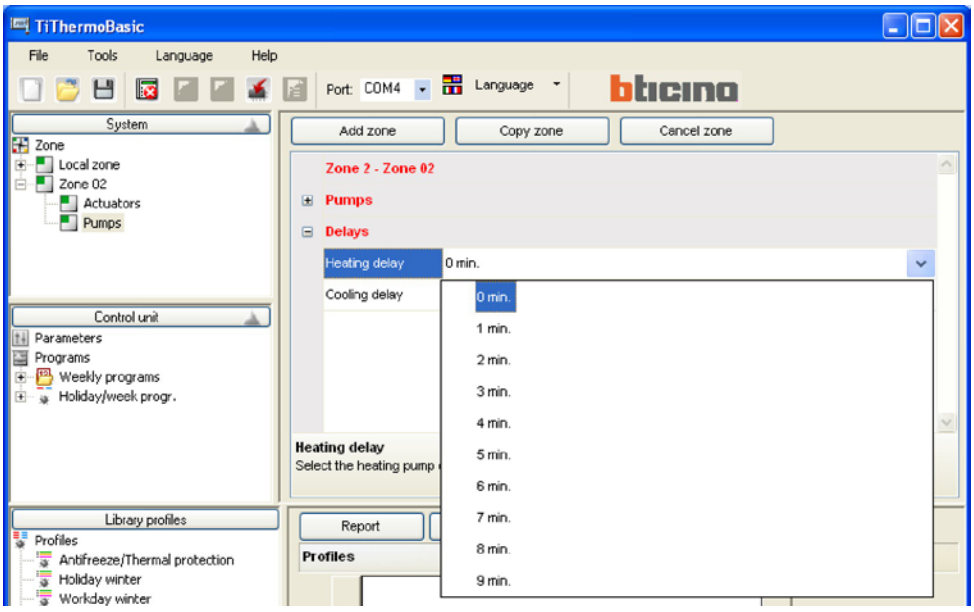




- **Pumps**

By clicking a single **Pump** (e.g.: Pump No. 1), it is possible to select the type of function required (heating, cooling, heating + cooling or no function) and the Activation **Delays**.



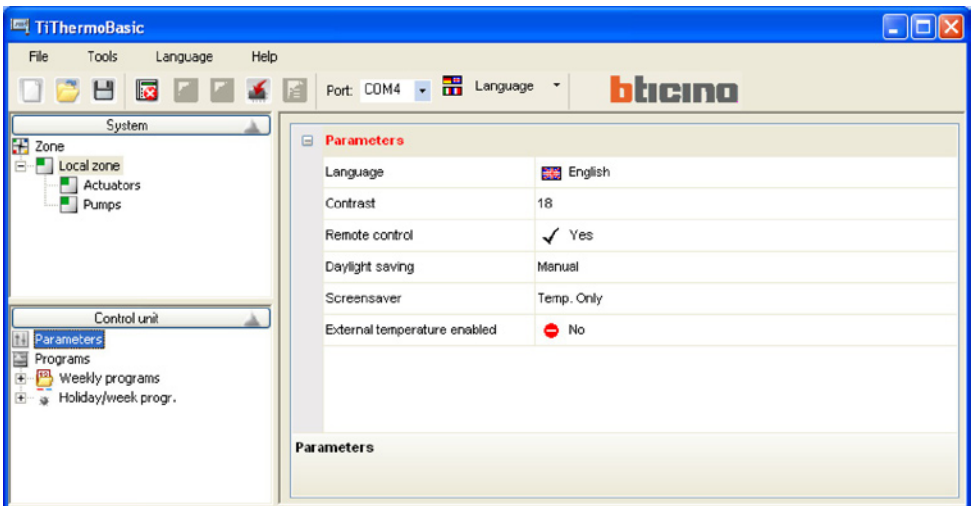


4.2 "Control unit" Window

This window shows the configuration parameters and the operating programs of the temperature control unit.

- **Parameters**

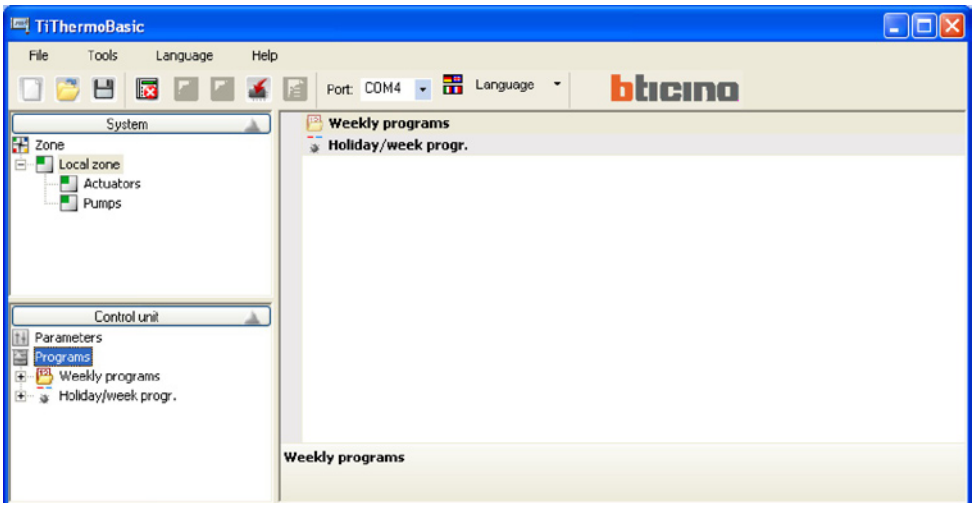
Language	Selects the language for the temperature control unit
Contrast	Adjusts the display contrast value of the Unit
Remote control	Enables/Disables the management of the Unit from other devices (e.g. Touch screen, Web Server)
Daylight saving time	Selects the Manual/Automatic mode
Screensaver	Selects the screensaver for the display of the Unit
External temperature...	Enables/Disables the external temperature sensor. If enabled, the selection field of the sensor 1-9 is displayed.



If the software is connected to the unit, this section shows the version information of the unit as well as the addresses of the system zones

- **Programs**

Weekly programs	sets up the weekly heating/cooling programs
Holiday/weekend program	sets up the heating/cooling programs for holidays



TiThermoBasic automatically memorizes all the changes made to the profile Library. In order to reset the initial condition of the profile Library, it is necessary to re-install the software.

4.3 "Library profiles" Window

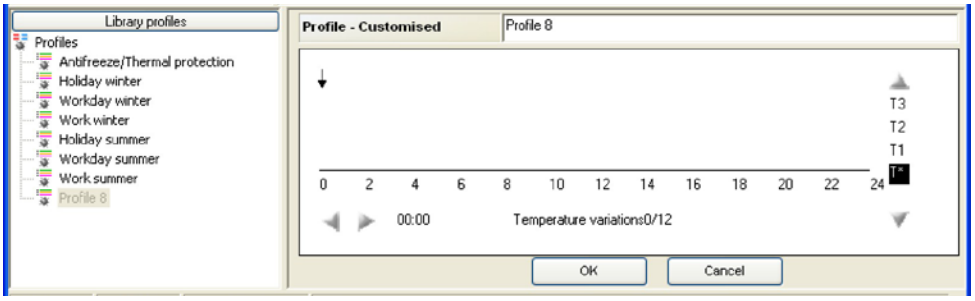
This window displays the profiles included in the software library.

When you select the **Profiles** node, a window on the right will be displayed. This will allow you to select and display all profiles included in the library.

New

- **New**

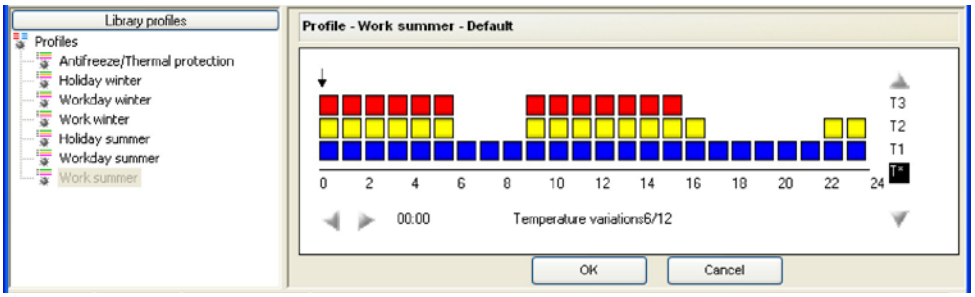
Adds a new profile to the library and starts the editing mode of the newly added profile.



Modify

- **Modify**

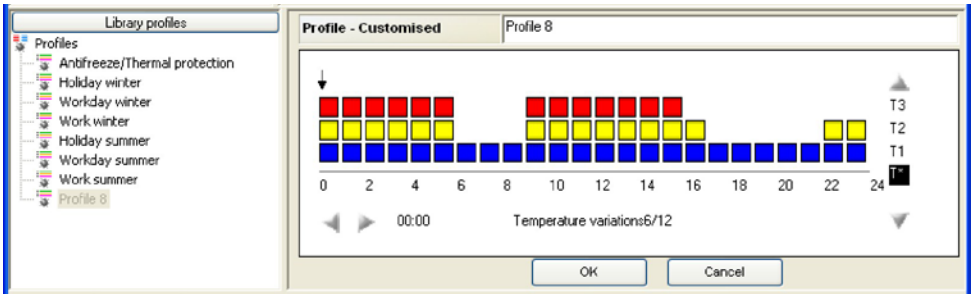
Starts the editing mode of the selected profile.



Use as base

- **Use as base**

Adds a new profile to the library by using the currently selected profile as a base. Starts the editing mode of the newly added profile.



Cancel

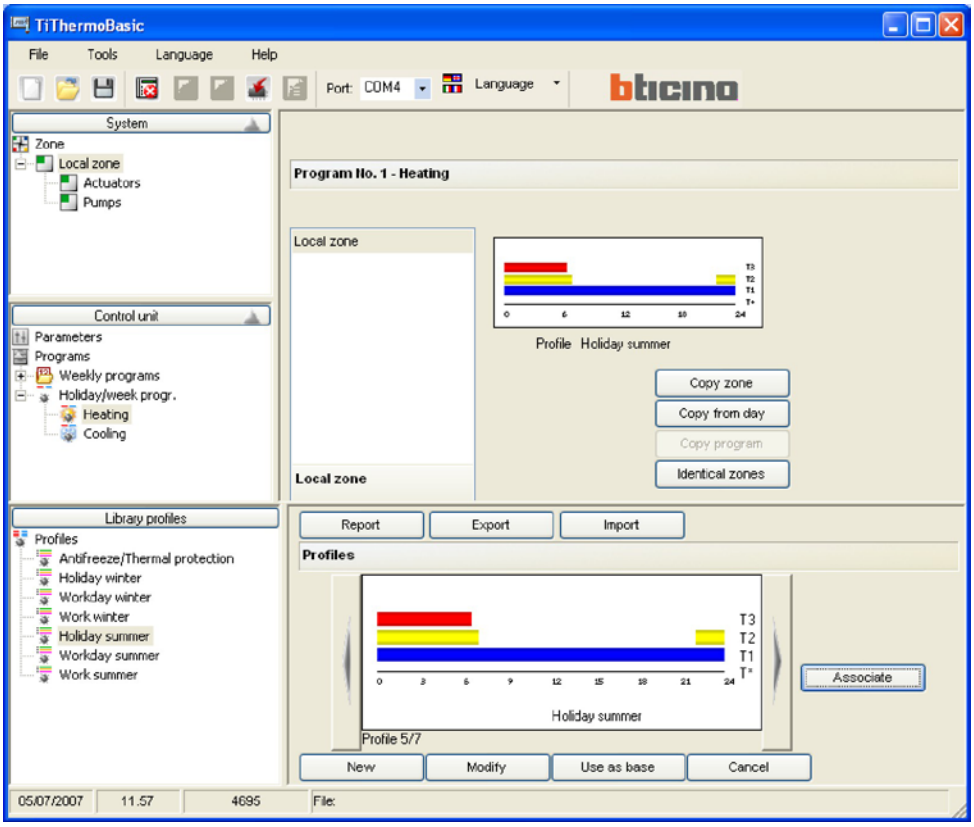
- **Cancel**

Removes the selected profile from the library. The profile will also be automatically eliminated from all the collections that are using it.

Associate

- **Associate**

When the top part of the screen displays the detail of a weekly program or holiday program and when one or more zones are selected, associate the currently selected profile with the zones selected.



Report

- **Report**

This creates an Excel file containing the graphs of all the profiles included in the library (option available only if Excel is installed in the PC). If Excel is not installed, a csv file will be created.

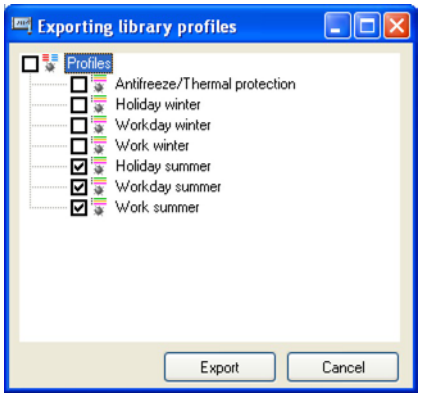
This function is available even if the root node of a collection or a profile within a collection is selected.

Export

- **Export**

This exports the content of the library of the profiles in an XML file. A window will be opened for selecting the elements that you want to export.

This function is available even if the root node of a collection or a profile within a collection is selected.



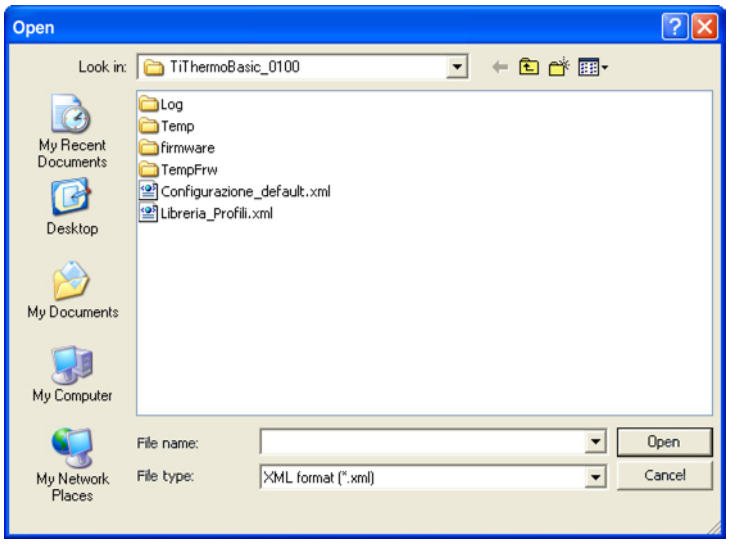
When the selection has been completed, click on “Export” to open the window and to save the file.

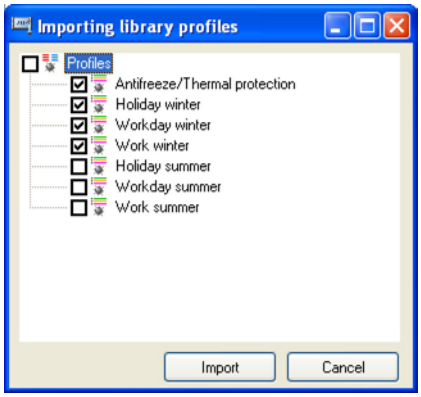
- **Import**

This allows you to import the profiles and the collections from an external XML file.

A window will be opened in order to select the file to be imported, thus showing a list of the profiles and collections included in the file selected.

This function is available even if the root node of a collection or a profile within a collection is selected.

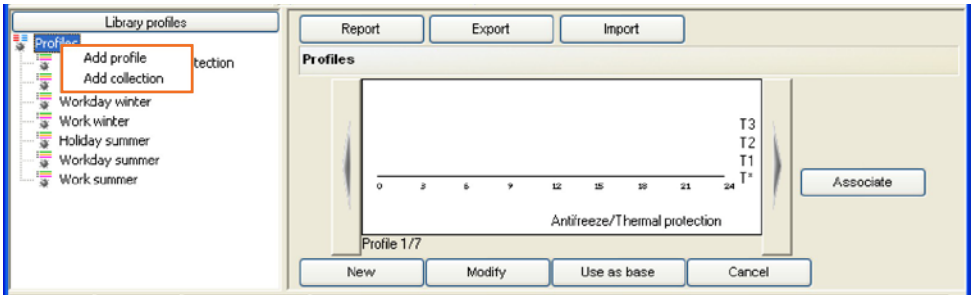




It is now possible to select the profiles to be imported.
When the selection has been completed, click on “Import” to start the import process.
The new profiles are added to the TiThermoBasic profiles library following a verification of the existence of an identical profile.
If a profile identical to the profile being imported is found in the profiles library, you will be asked if the profile shall be imported anyway. If you answer “Yes”, the profile will be added to the library, otherwise the profile will be ignored.

Instead, the following functions will be available in the **Library Profiles** by using the right button of your mouse:

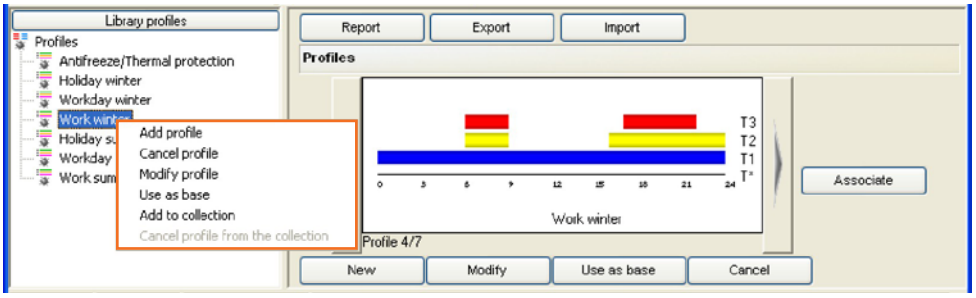
- **Functions available by clicking on "Profile"**



Add profile adds a new profile to the library and starts the editing mode of the added profile

Add collection adds a new collection to the library

- **Functions available by clicking the "Profiles" node**



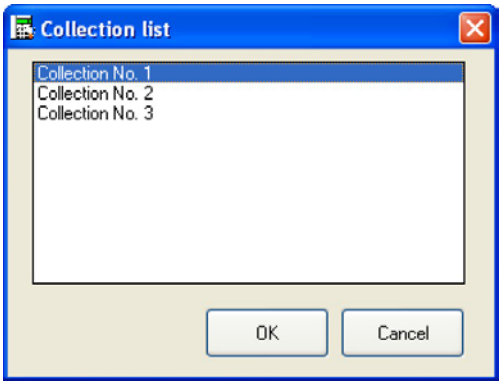
Add profile adds a new profile to the library and starts the editing mode of the added profile

Cancel profile removes the selected profile from the library

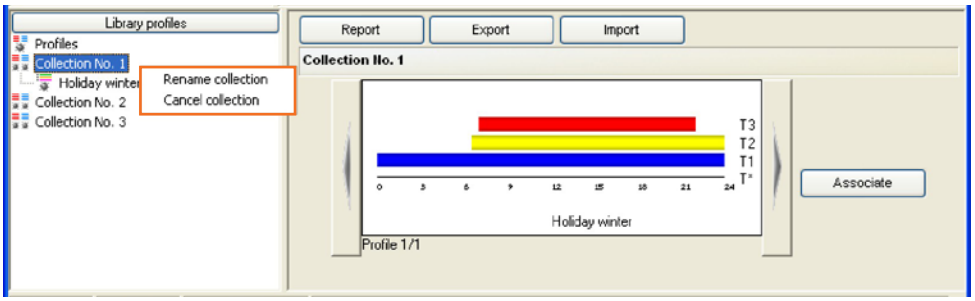
Modify profile starts the editing mode of the selected profile

Use as base adds a new profile to the library by using the selected profile as a base and starts the editing mode of the added profile

Add to collection adds the selected profile to the collection selected through the window shown below

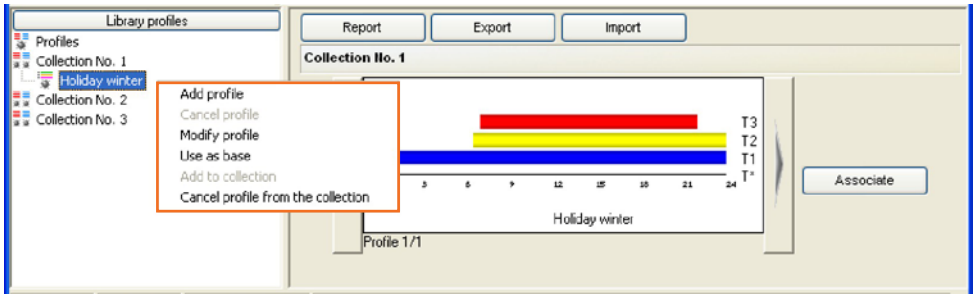


- **Functions available by clicking a Collection**



Rename collection	renames the collection selected
Cancel collection	eliminates the collection selected

- **Functions available by clicking a profile of a Collection**

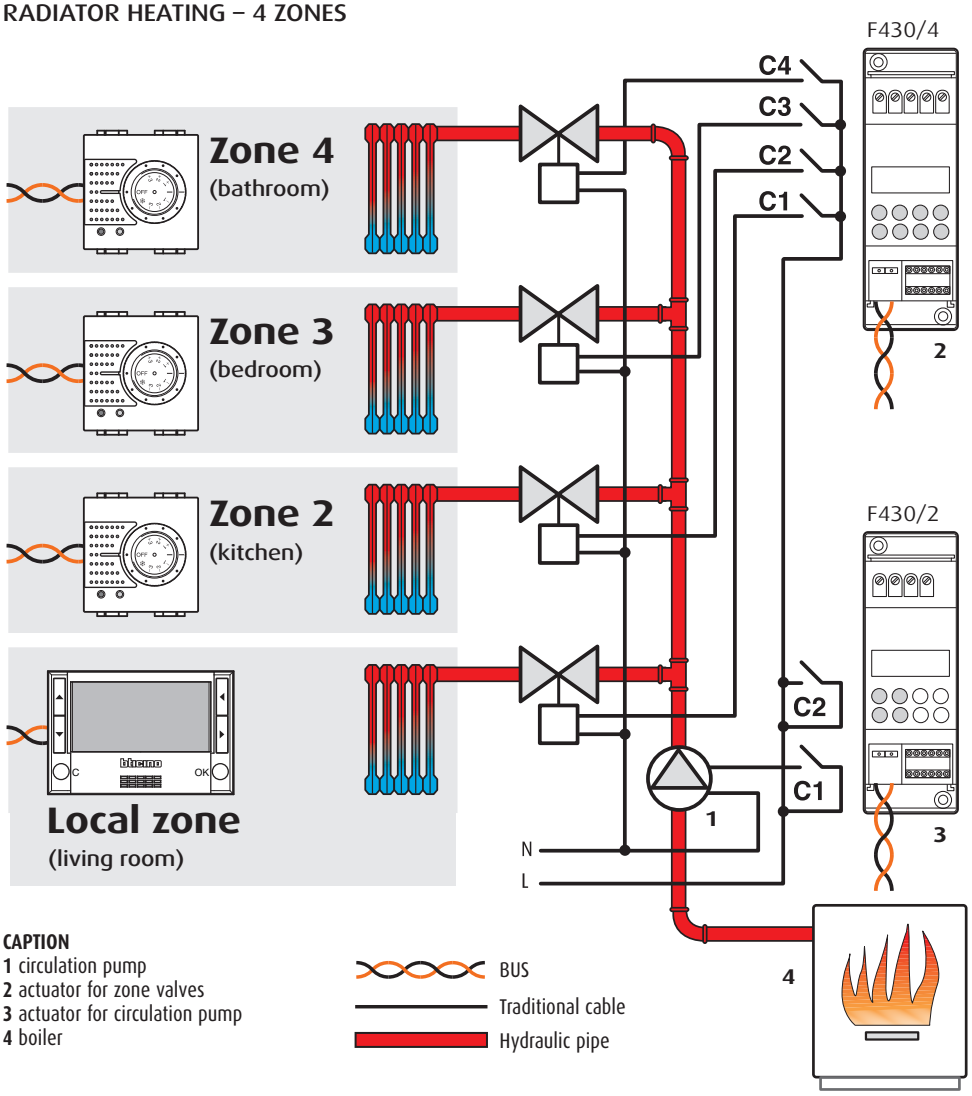


Add profile	adds a new profile to the library and starts the editing mode of the added profile
Cancel profile	removes the selected profile from the library
Modify profile	starts the editing mode of the selected profile
Use as base	adds a new profile to the library by using the selected profile as a base and starts the editing mode of the added profile
Cancel profile from collection	eliminates the profile selected from the collection

5. Example of a project

When the configuration operations described above have been completed, a guided example will be given to create a new project referred to the following system:

RADIATOR HEATING – 4 ZONES



System configuration:

Probe zone 1

[ZA]	[ZB]	[SLA]
0	1	

Probe zone 2

[ZA]	[ZB]	[P]	[MOD]	[SLA]	[DEL]
0	2	CEN	CEN		

Probe zone 3

[ZA]	[ZB]	[P]	[MOD]	[SLA]	[DEL]
0	3	CEN	CEN		

Probe zone 4

[ZA]	[ZB]	[P]	[MOD]	[SLA]	[DEL]
0	4	CEN	CEN		

Zone actuator

[ZA]	[ZB1]	[ZB2]	[ZB3]	[ZB4]	[N]
0	1	2	3	4	1

[N] = 1: progressive number

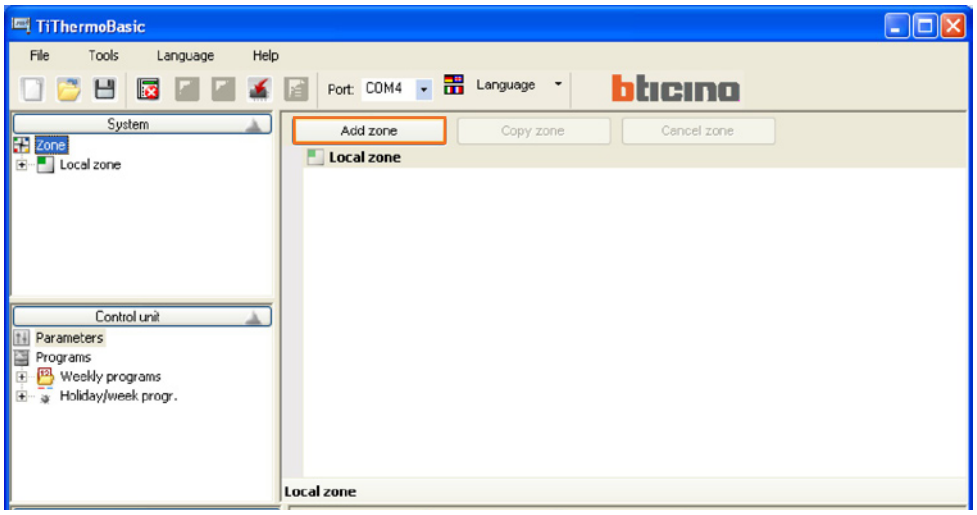
Actuator for circulation pump

[ZA]	[ZB1]	[N1]	[ZB2]	[N2]
0	0	1	OFF	—

[N1] = 1: progressive number

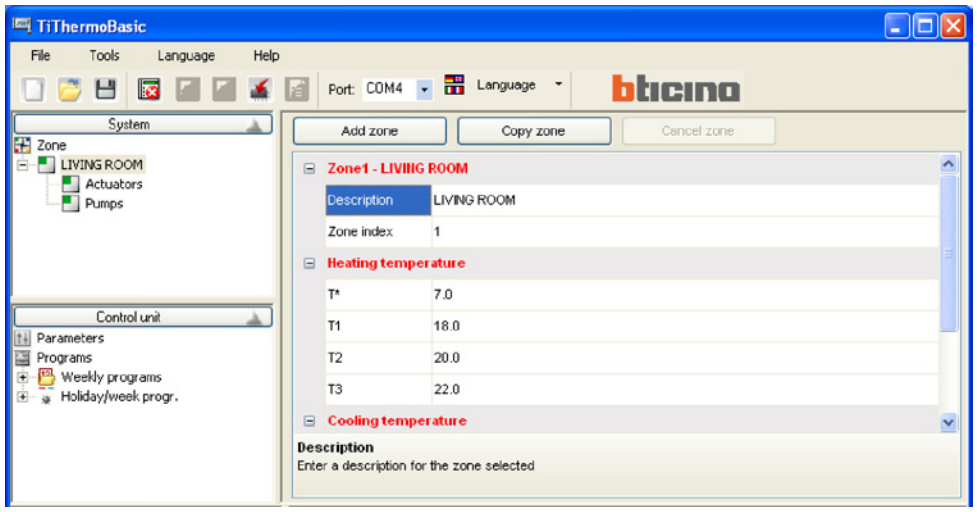
5.1 System configuration

When the programme is opened, the **Local zone** is by default present in the system window..

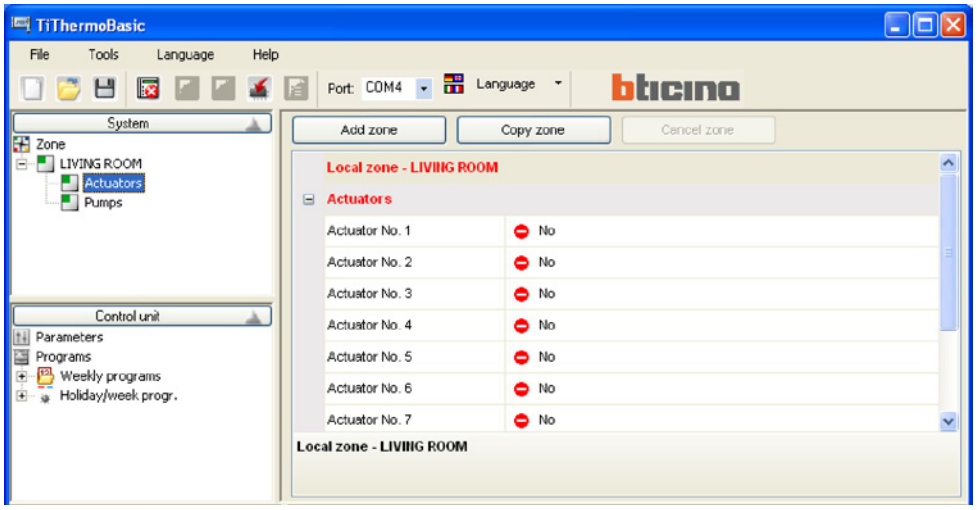


By selecting the local Zone, in the main window it will be possible to:

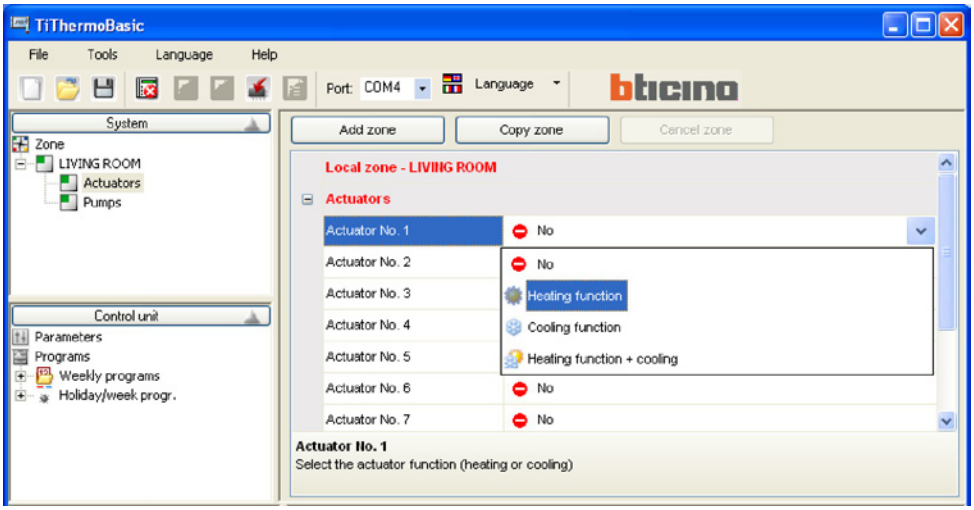
- assign a Description to the zone (e.g. Living room)
- change the preset values of the Antifreeze temperature or Thermal protection levels and the temperature levels T1, T2 and T3 used in the weekly programmes.



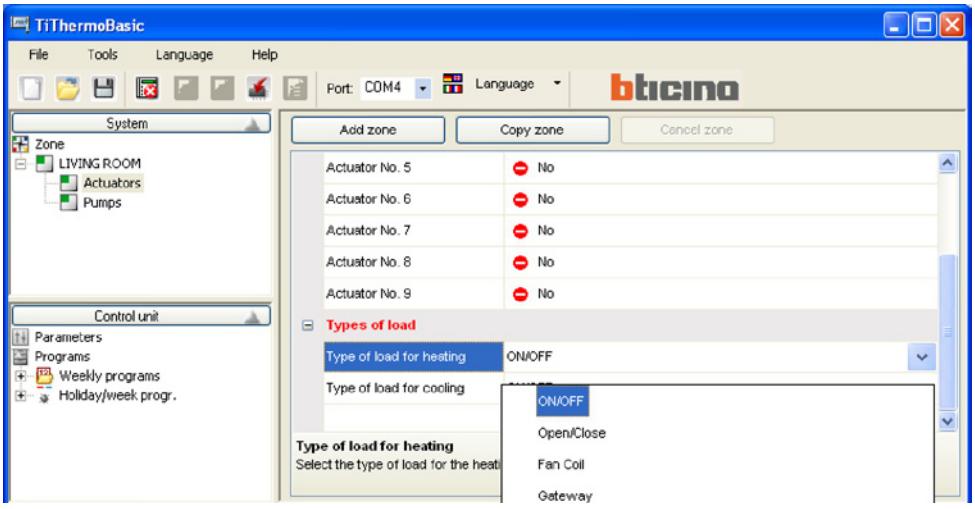
Click **Actuators** in the tree structure of the Zones.



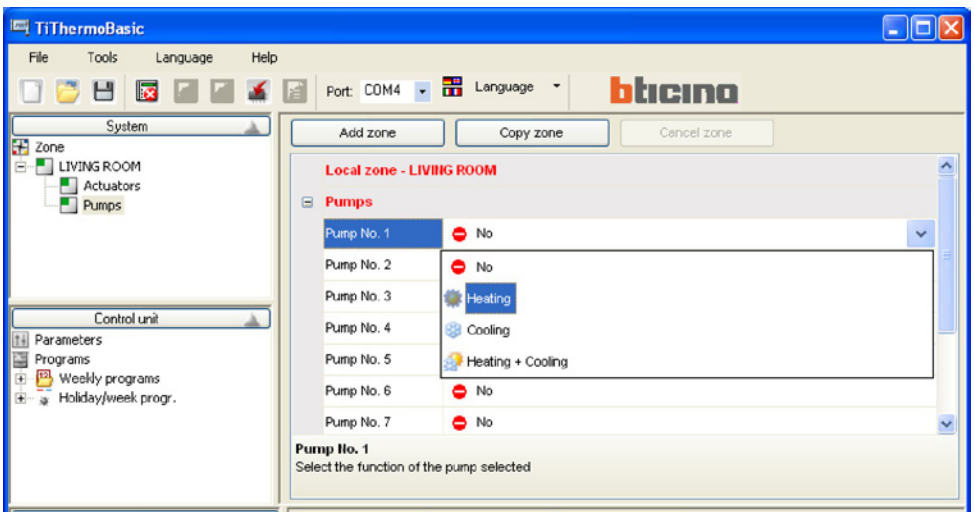
In the main window, click **Actuator No. 1** and select the **Heating function**.



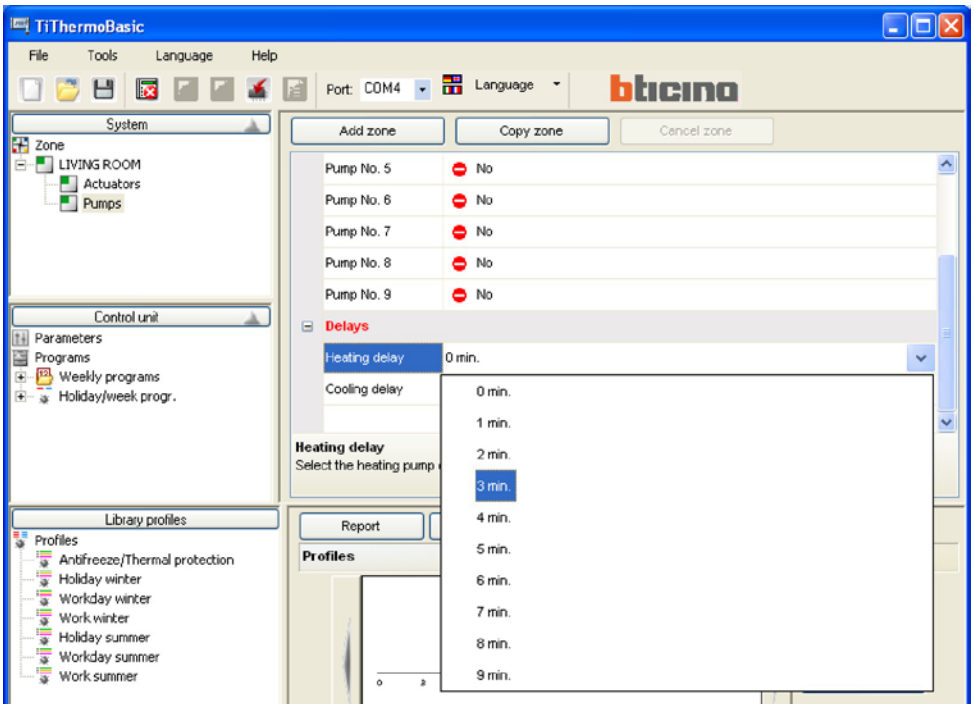
Click on **Type of load for heating** and select **ON/OFF**.



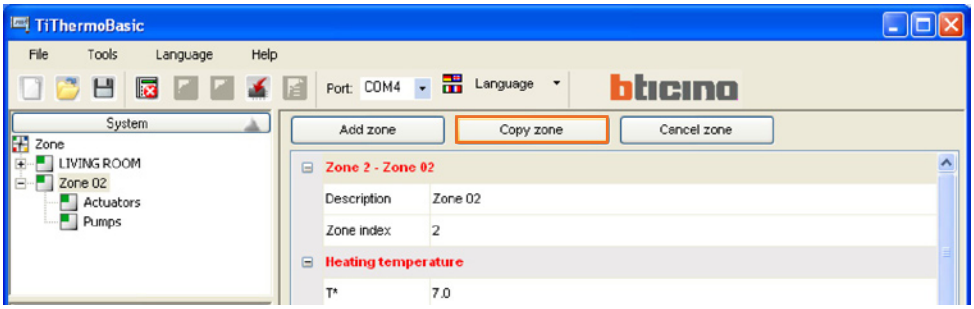
Click **Pumps** in the System window.
In the main window, click **Pump No. 1** and assign the **Heating** function.



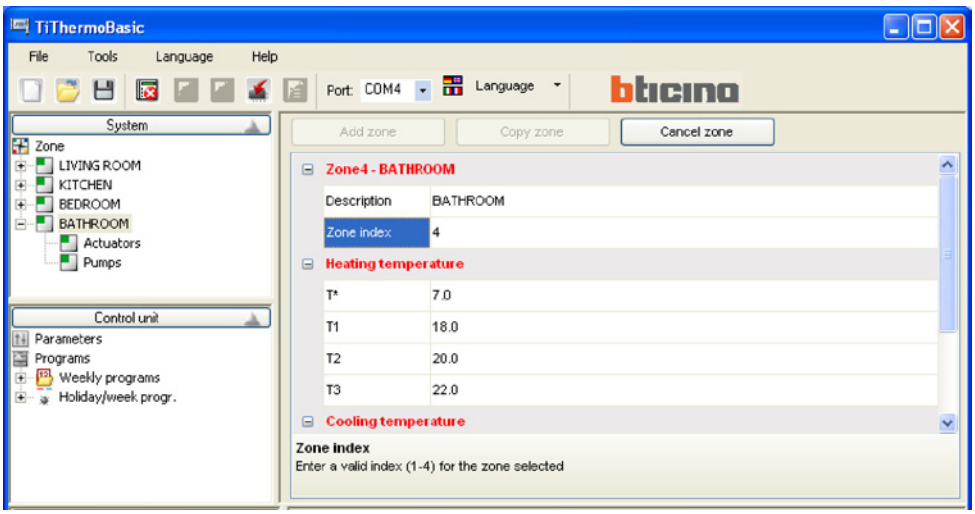
Click on **Heating delay** to assign the activation delay of the pump.



To create a new zone with the same setup, click the “Copy zone” button.
A new zone having the first available index will be created.



After selecting the created zone (Zone 02), it will be possible to customize the description (e.g. Bathroom) and/or change the configuration.



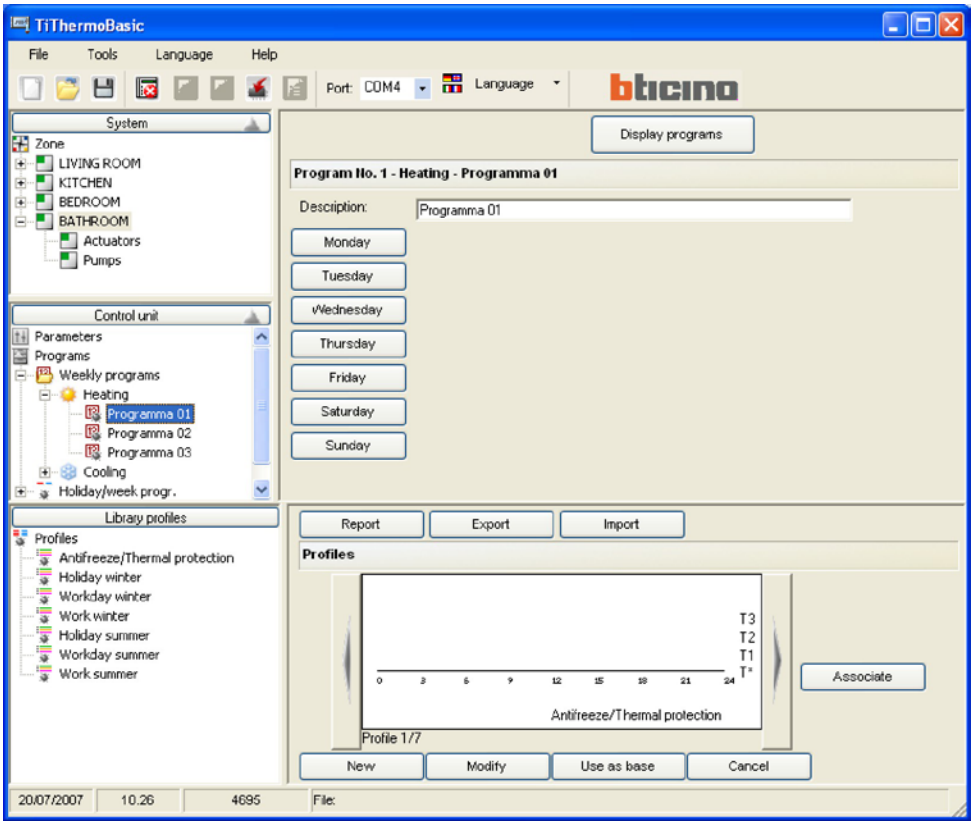
5.2 Configuration of Weekly programs

It is possible to create up to three weekly programs for each operation mode of the system (Heating and Cooling).
For each program it is possible to determine different temperature profiles (0h-24h) for every day and for every zone of the system.

To set up a weekly heating program:

- click **Programs** in the Control Unit window;
- expand the Programs tree structure -> Weekly programs -> Heating;
- select one of the three available programs (e.g.: Program 01).

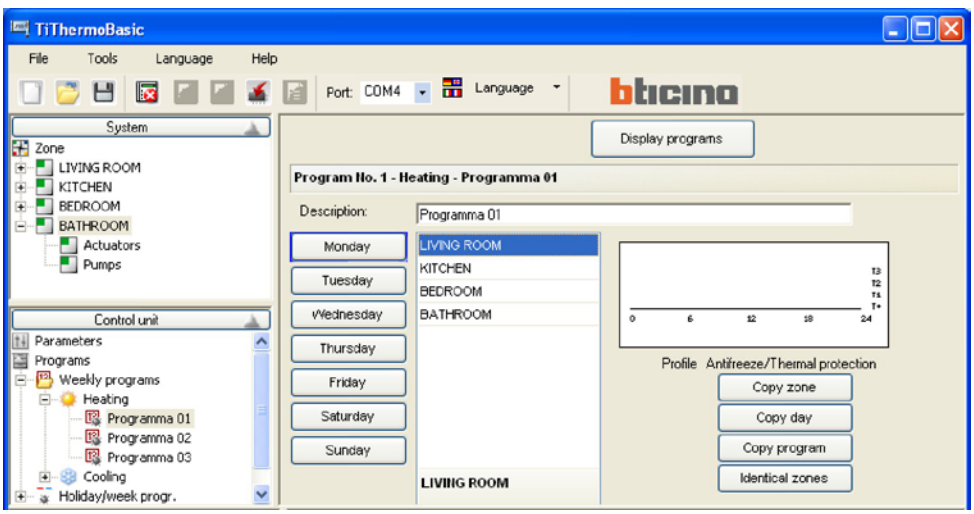
In the main window, the list of the days of the week will be displayed.



- Select the day you want to configure (e.g. Monday);

The list of the configured zones within the project will be displayed.

- Select a zone (e.g. Living room) to display the associated profile.

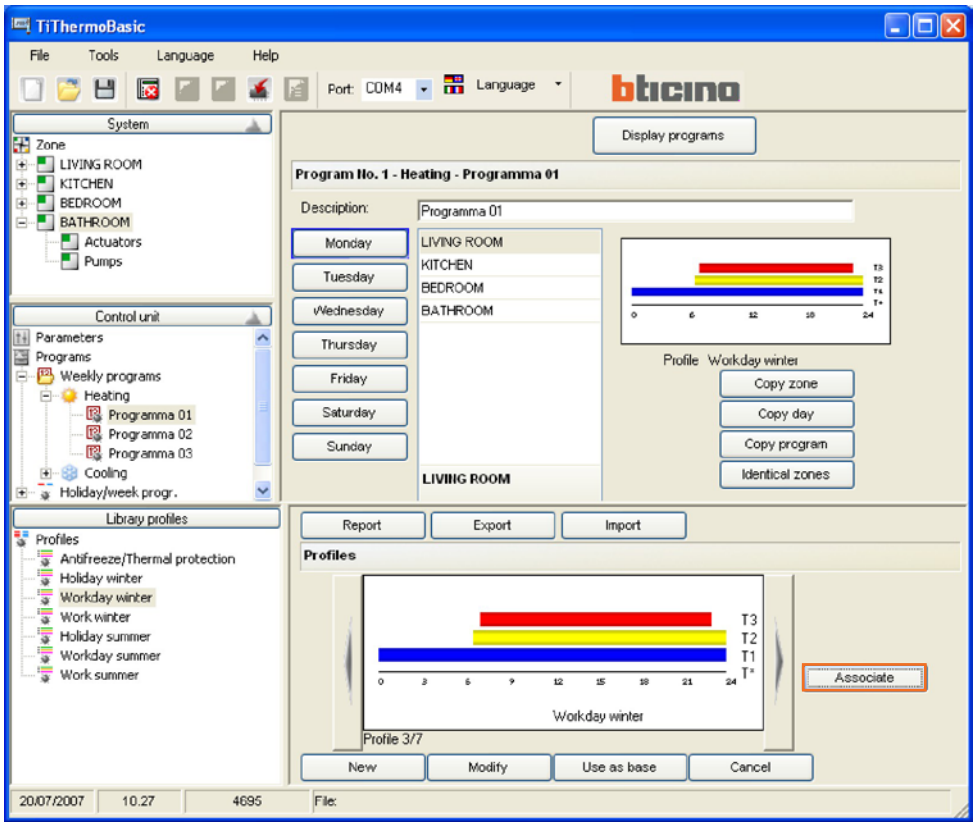


The following actions are now possible:

Associate: associates a new profile with the day and with the zones selected.

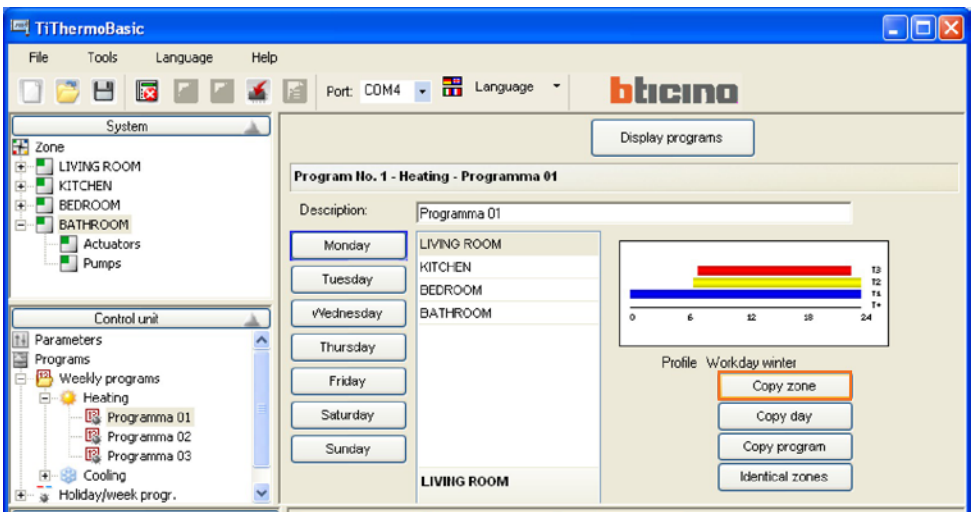
- Select the required profile from among those included in the library profiles and click on the **Associate** button.

It is possible to associate the same profile with other zones by simply making a multiple selection (with the Shift and Control keys) within the list of the zones.

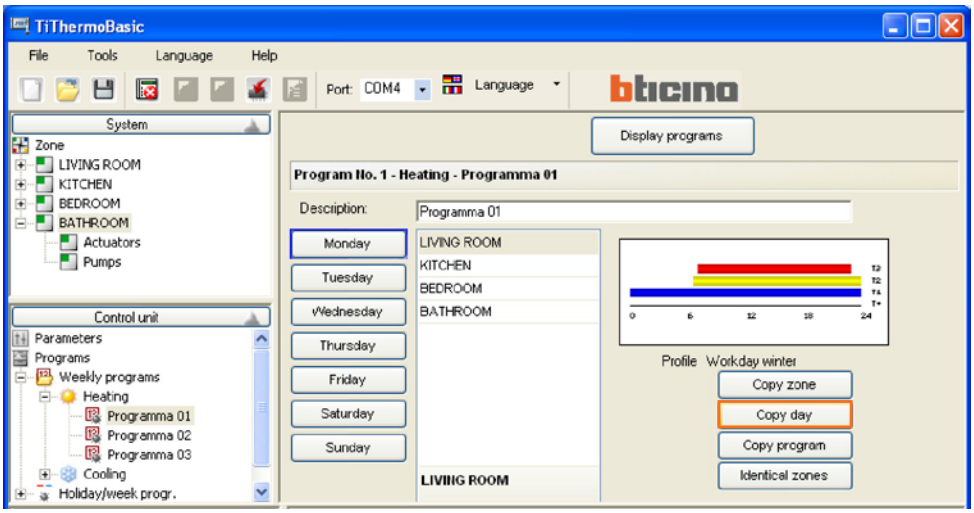


Copy zone: copies the setup of the current zone to one or more zones.

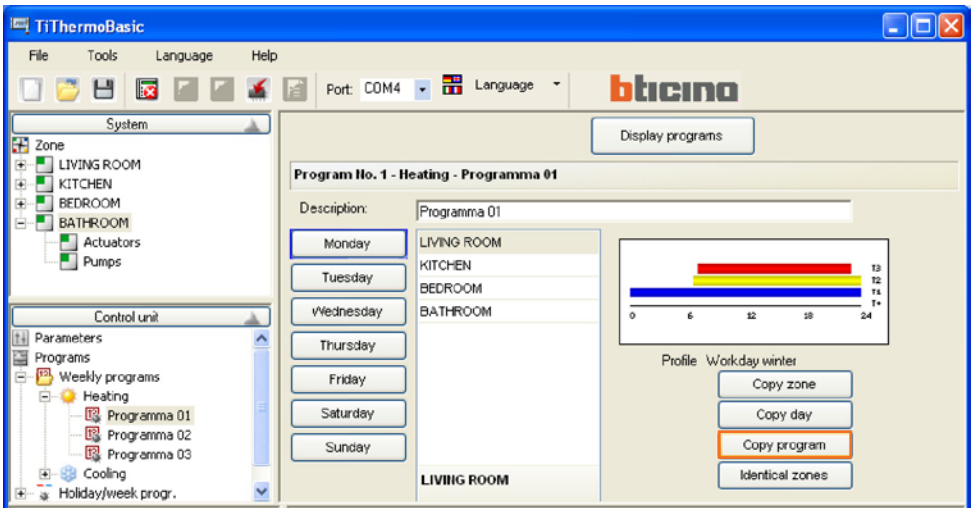
A window will be opened to select the zones to which the setup of the selected zone shall be applied. It is possible to select several zones by using the Shift and Control keys.



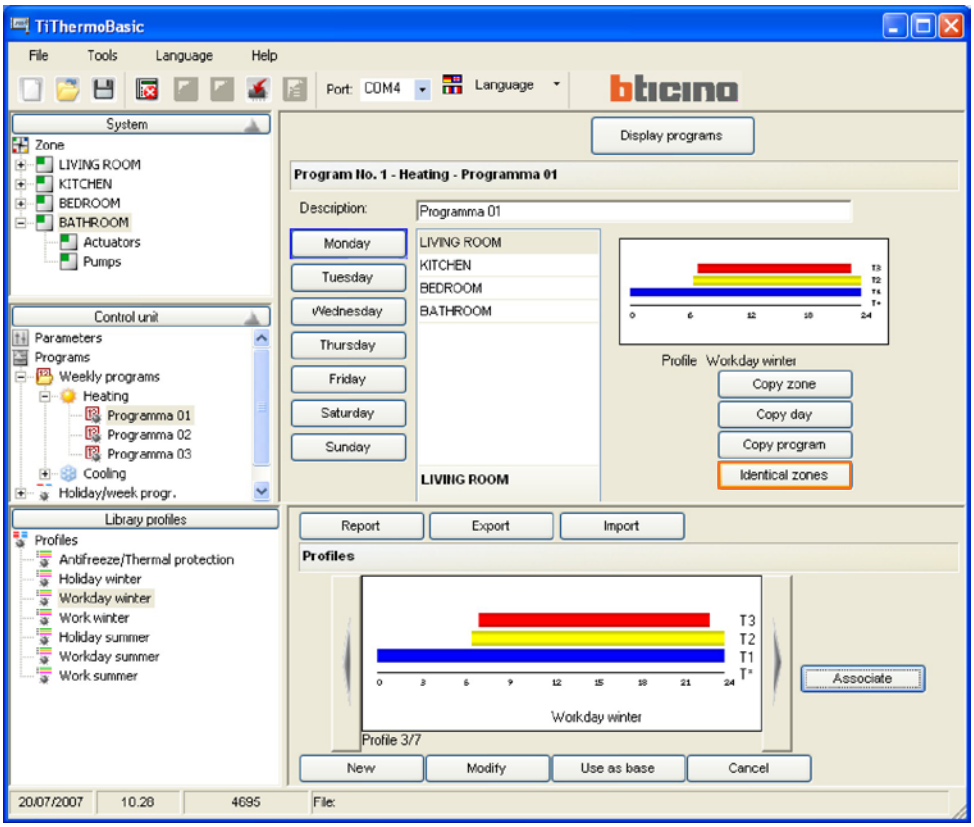
Copy day: copies the setup of the current day to one or more days.
A window will appear for selecting the day.
It is possible to select several days by using the Shift and Control keys.



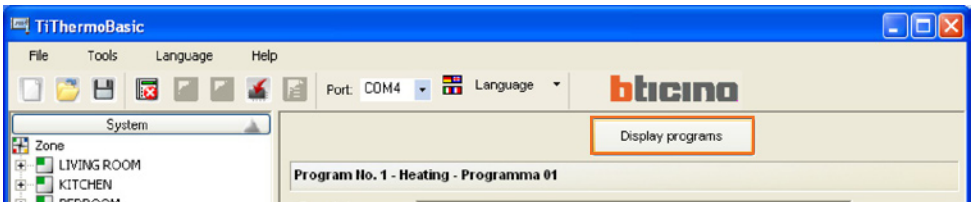
Copy program: copies the setup of the current program to one or more weekly programs belonging to the same function (heating or cooling).
A window will be opened for selecting the programs.



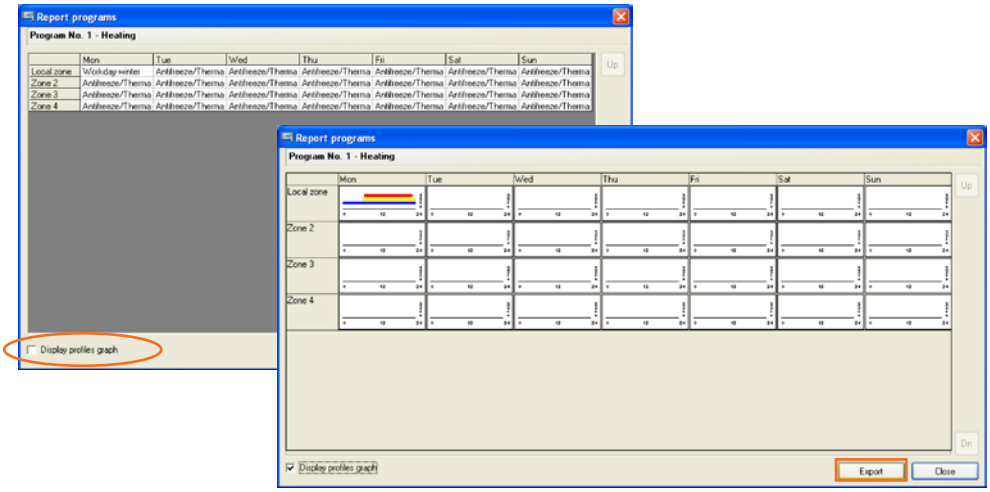
Identical zones: this indicates, in the list of the zones, which zones use the profile of the selected zone.



Display program: shows the synoptic panel of the profiles associated with each zone for each day of the week.



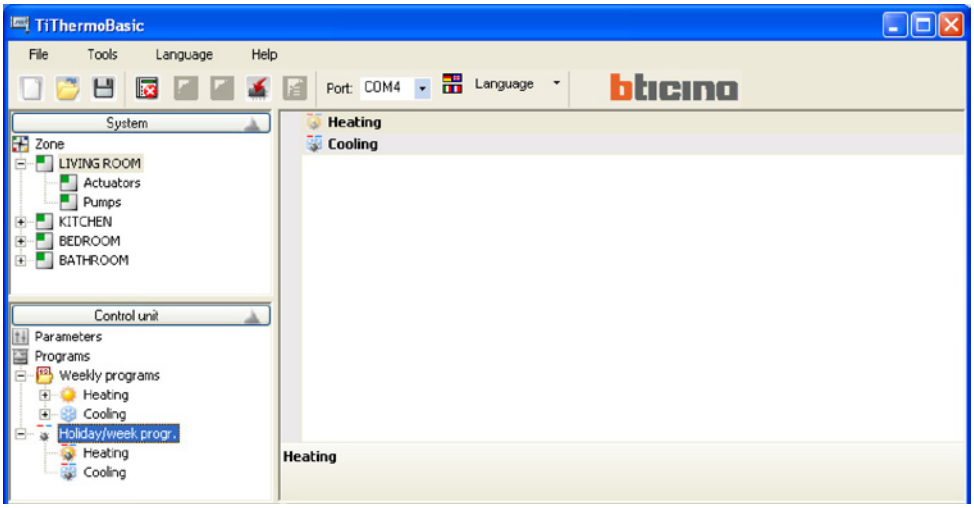
The display may occur in graph mode by enabling “Display profiles graph”.

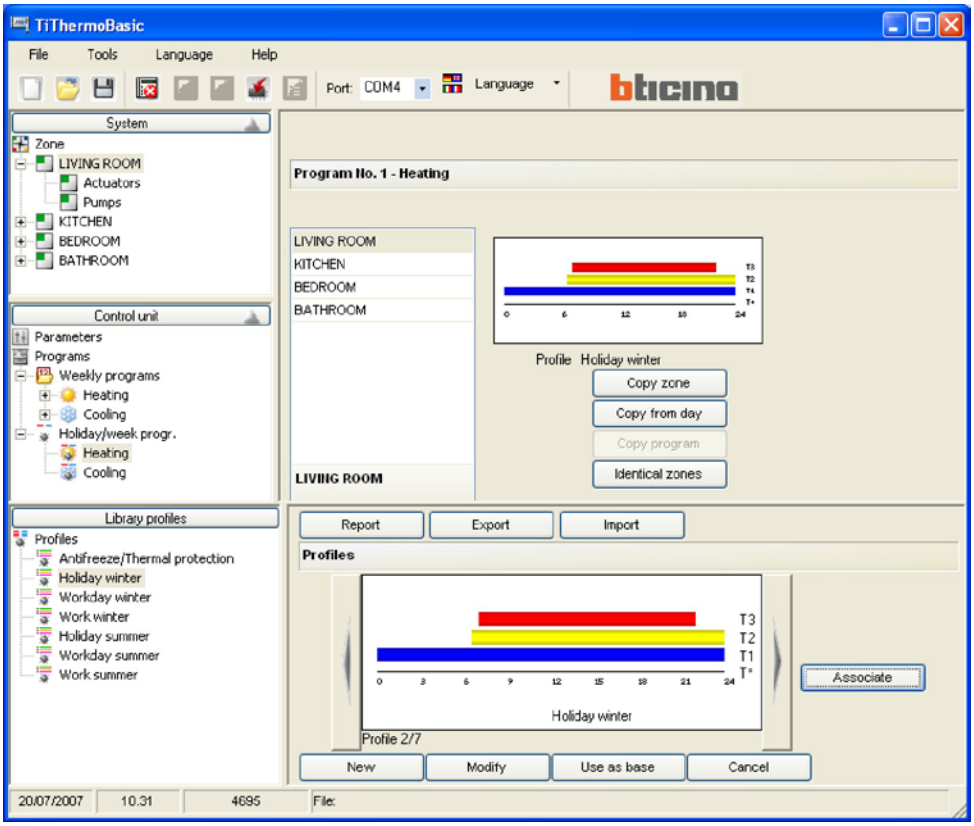


By clicking on the **Export** button, it will be possible to export the synoptic panel in graph mode into an xls file (if Excel is installed) or in text mode (if Excel is not installed).

5.3 Configuration of Holiday program

Using the same configuration logic described for the weekly Program, it is possible to create, for the selected mode (Heating or Cooling), a daily profile for each zone of the system.





Complete the configuration and save the Project

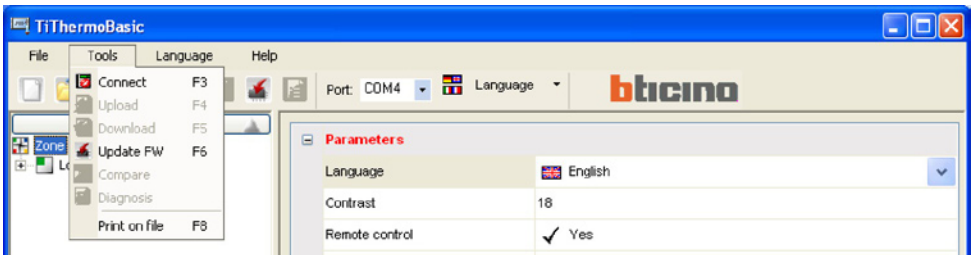
In order to transfer the project to the temperature control unit Item 4695, proceed as described in the following pages.

6. Connecting to the Control Unit

In order to use specific functions (e.g.: Upload, Download, etc.), it is necessary to connect the PC where the TiThermoBasic software is installed to the Unit.

In order to activate the connection, perform the following operations in the order given:

- connect the programming cable, Item 3559, to the USB port of the PC
- From the **Port** drop-down menu, shown in the toolbar, select the serial port address of the PC you want to connect the Control Unit to (e.g..: COM4);
- select **Connect** from the **Tools** menu or from the toolbar



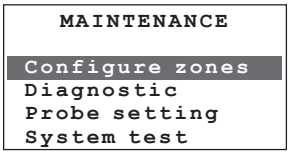
If the port selected is not the one which the unit will actually connect to, this could cease to function during the next connection operations, hence it may require a RESET procedure

The following window will be given with the instructions on how to connect to the Unit.

Run the requested operations:

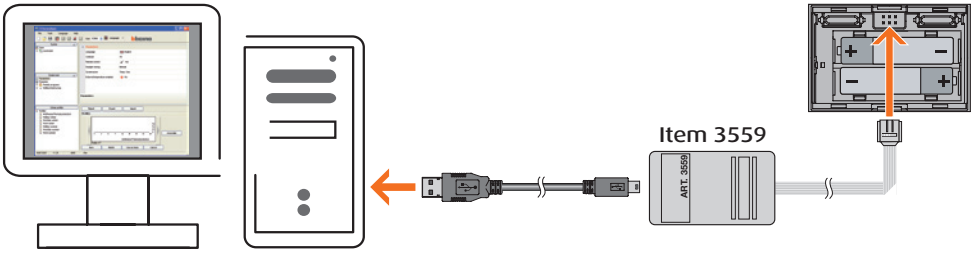
1) make sure that the Control Unit has acquired the system configuration

2) set the Control Unit to Maintenance mode



If the unit is connected before selecting "Connect", this could cease to function, thereby requiring a RESET procedure

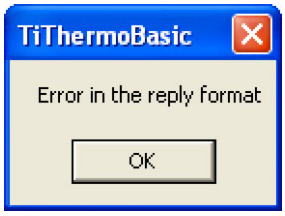
3) connect the programming cable to the device



4) press OK to continue

When the connection has been made, the following functions will be made available: **Upload** and **Download** configuration, **Diagnostics, Firmware update**.

If the procedure fails, the following message will be displayed:



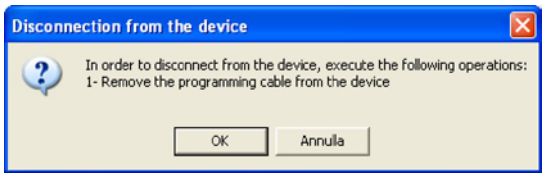
If the Unit ceases to function during the connection procedure, it is necessary to perform the following RESET procedure:

1) Disconnect the programming cable from the Unit
2) Remove the batteries from their housing and then put them back in
3) Place the Unit on the base connected to the system
4) Run the system setup cycle
5) Repeat the connection activation procedure by following the order of the operations and, if required, by changing the selected com, if incorrect

In order to activate the connection, perform the following operations in the order given:

- select **Connect** from the **Tools** menu or from the toolbar

Here, too, a window will be given with the instructions on how to disconnect from the Control Unit:



Run the requested operations:

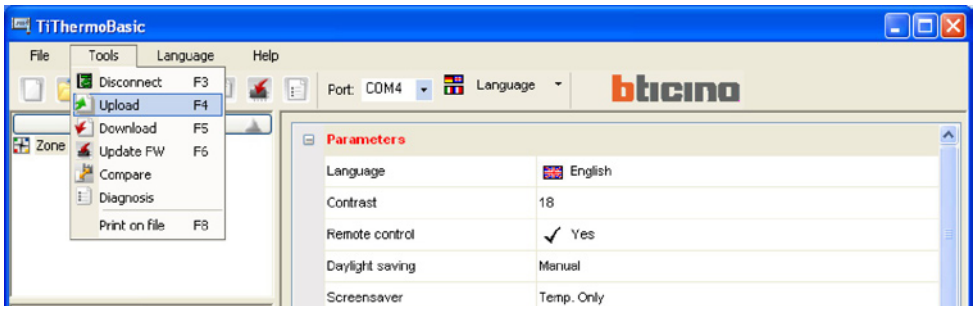
3) Remove the programming cable from the Unit
4) Press OK

7. Functions enabled while connecting

7.1 Upload

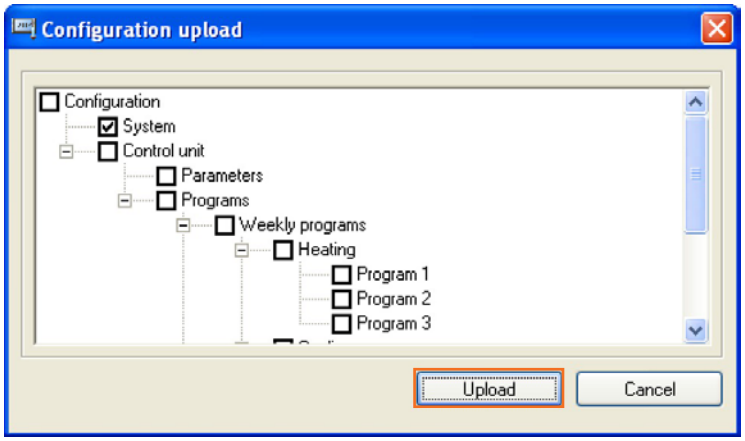
The **Upload** function enables you to transfer all or part of the configuration of the Control Unit to the project opened in TiThermoBasic.

- Select **Upload** from the **Tools** menu or from the toolbar

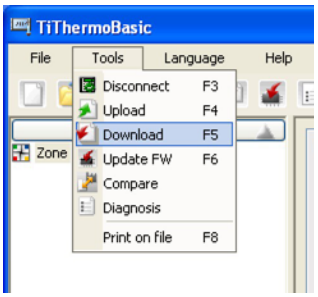


A window will appear in which it is possible to select all or part of the configuration you want to transfer. The loaded setup will overwrite the ones corresponding to the current project.

By selecting a main node, the whole underlying tree structure will be automatically selected.



- Click the **Upload** button to start transferring.

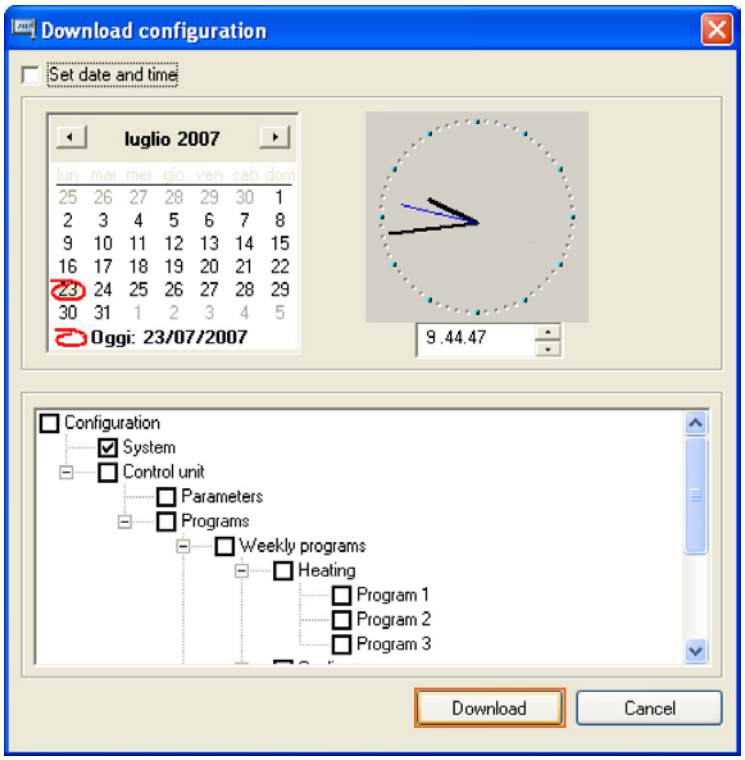


7.2 Download

The **Download** function enables you to transfer all or part of the configuration of the project opened in TiThermoBasic.

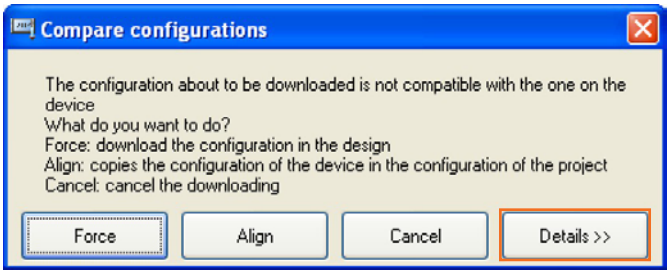
- Select **Download** from the **Tools** menu or from the toolbar

A window will appear in which it is possible to set the date/time and select the parts of the project to be transferred to the Control Unit.

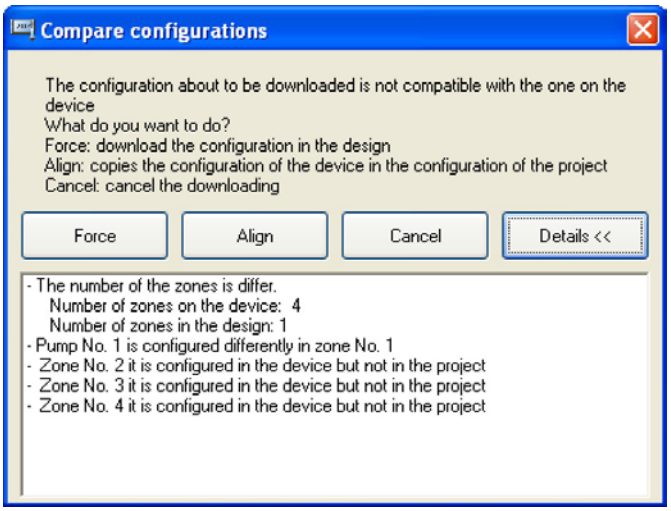


- Click the **Download** button to start transferring.

If the configuration of the project being downloaded does not coincide with the configuration of the system on the Control Unit, the following dialog box will be displayed:



it is possible to get details of the setup which is determining the incompatibility by clicking on **Details;**



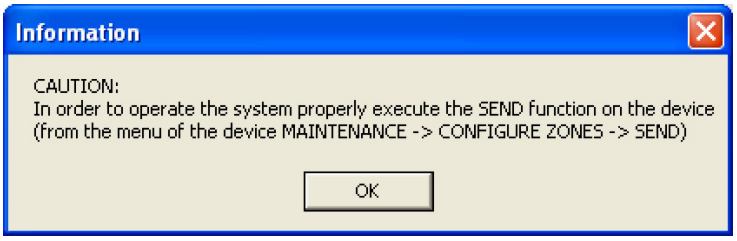
or to use one of the three possible actions:

Force the configuration of the project will in any case be transferred the Unit

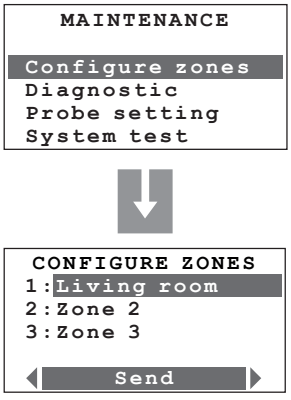
Align the configuration of the project will be aligned to that of the Control Unit

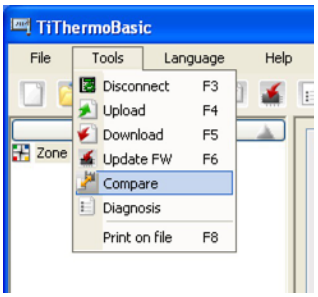
Cancel downloading will not be performed

When the project has been **downloaded**, the following will be displayed CAUTION:



Execute the following procedure to run the system properly.
(see § x.x.x.x temperature control unit installation Manual Item 4695)



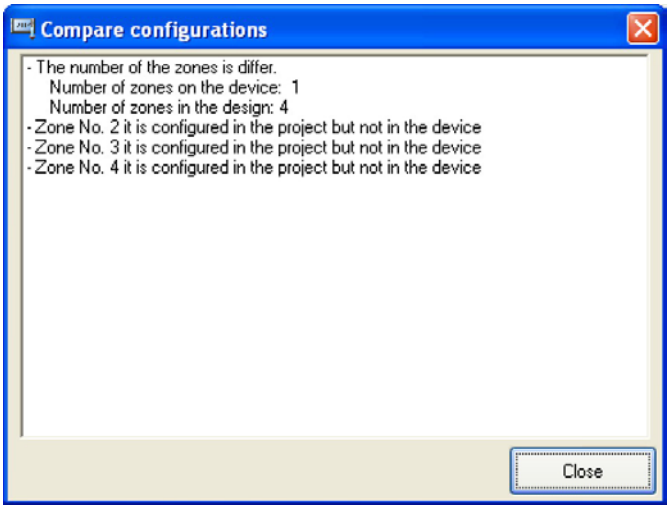


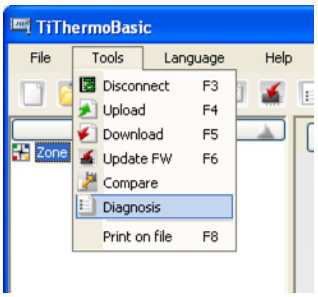
7.3 Compare

The **Compare** function enables you to display the differences between the project configuration and the configuration in the system.

- Select **Compare** from the **Tools** menu.

The following window will appear:



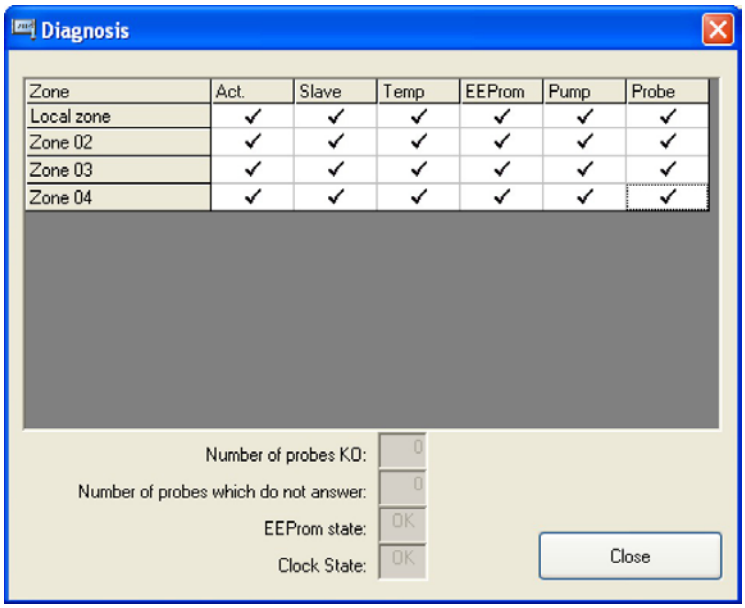


7.4 Diagnosis

The **Diagnosis** function enables you to verify the status of the single components for each zone.

- Select **Diagnosis** from the **Tools** menu or from the toolbar

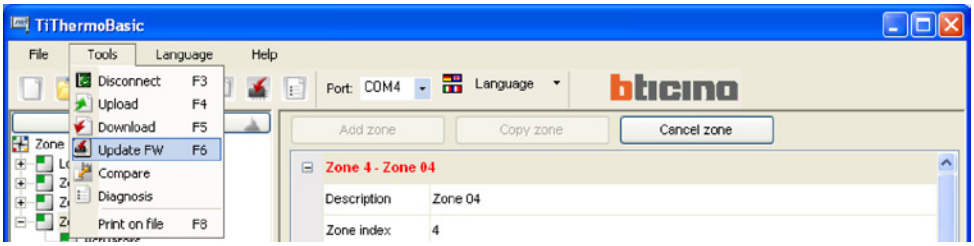
In the following window, the status (check mark = normal; red circle = error) of the single components will be displayed for each zone of the system:



8. Firmware update

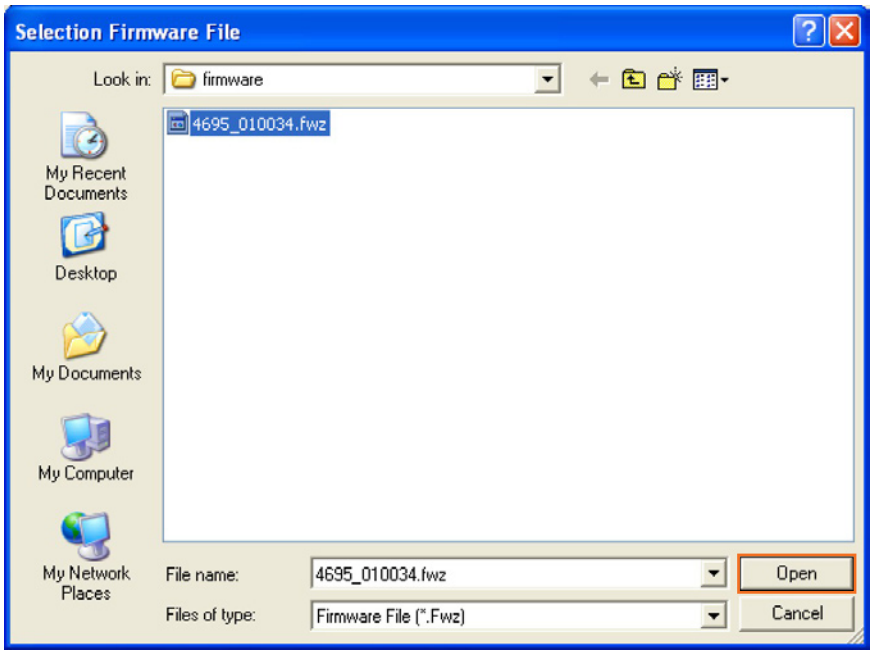
The **Update FW** function enables you to update the Firmware of the Control Unit. The function is always enabled, even if there is no connection with the system.

- Select **Update FW** from the **Tools** menu or from the toolbar

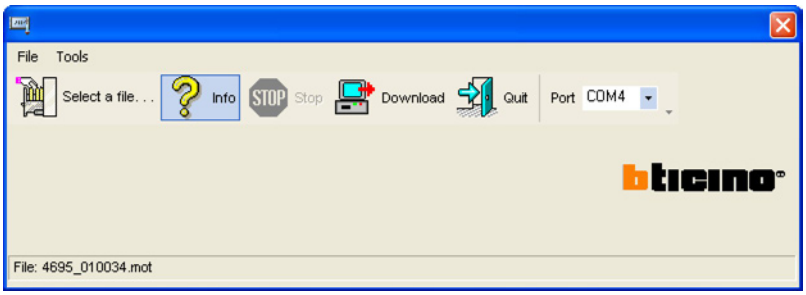


The following window will appear:

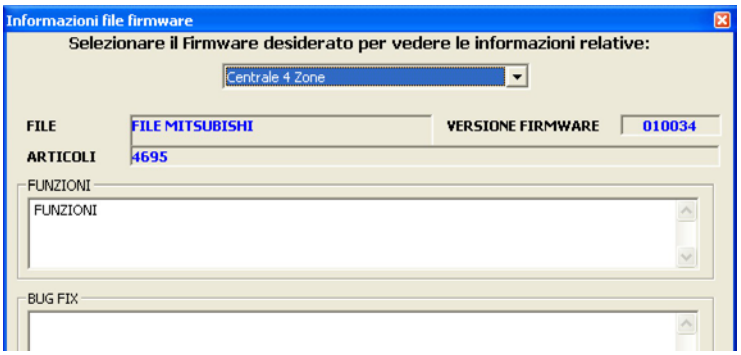
- Click **Select a file**

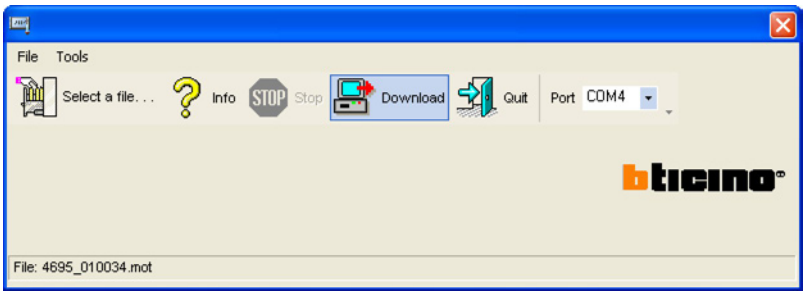


- Select the **.fwz** file and then click **Open**



- Click **Info** to get information on the selected file





- Click **Download** to start updating the firmware

If the software does not detect the connection with the Unit, the following window will be given:

Run the requested operations:

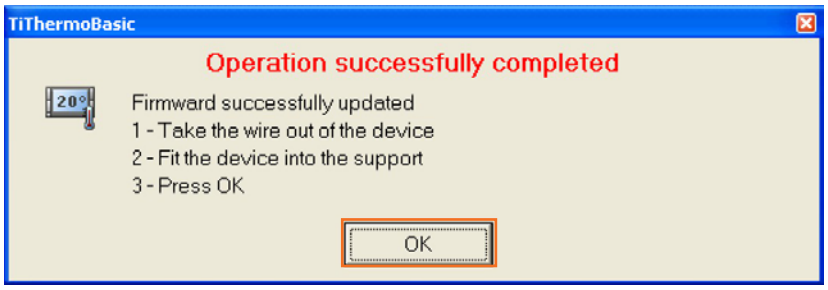
1) Set the Unit to Maintenance mode

2) Connect the programming cable to the device

3) press OK to continue

During the data transfer phase, the following window will appear; it is possible to interrupt the operation by selecting **Stop**.

When the update procedure has been completed, the following message will be displayed:



Run the requested operations:

1) Remove the programming cable from the Unit

2) Place the Unit into the support

3) Press OK

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