*User's manual*

# CONFIGURATION TOOL

# W500

CE




CONTROLLI

ISO9000

CONTROLLI
16010 SANT'OLCESE Genova – Italy
Tel. +39 01073061 Fax :+39 0107306870/871
E-mail info@controlli.org Web: www.controlli.org

# INDEX


HW REQUIREMENTS ..... 3

PC CONNECTION→ W500 ..... 3

PROGRAMME INSTALLATION ..... 4

UNINSTALL ..... 7

PROGRAMME START-UP ..... 8

PROGRAMME EXECUTION ..... 9

1 Exit the Programme ..... 12
2 Serial Port Configuration ..... 12
3 Communication Start-up ..... 12
4 Communication Disconnection ..... 13
5 Compensation Curve Configuration ..... 14
6 Schedule Programme Configuration ..... 15
7 Reading and Writing all Controller Parameters ..... 16
8 Loading and Saving Controller EEprom Data in one File ..... 18
9 Reading from a File and Downloading Data into the Controller EEprom ..... 20
10 Tools Selection ..... 22
11 Viewing Controller Data Sheets ..... 23
12 Viewing Controller User Manuals ..... 23
13 Viewing the Configuration Tool Manual ..... 24
14 Viewing the Information Page Visualisation ..... 24

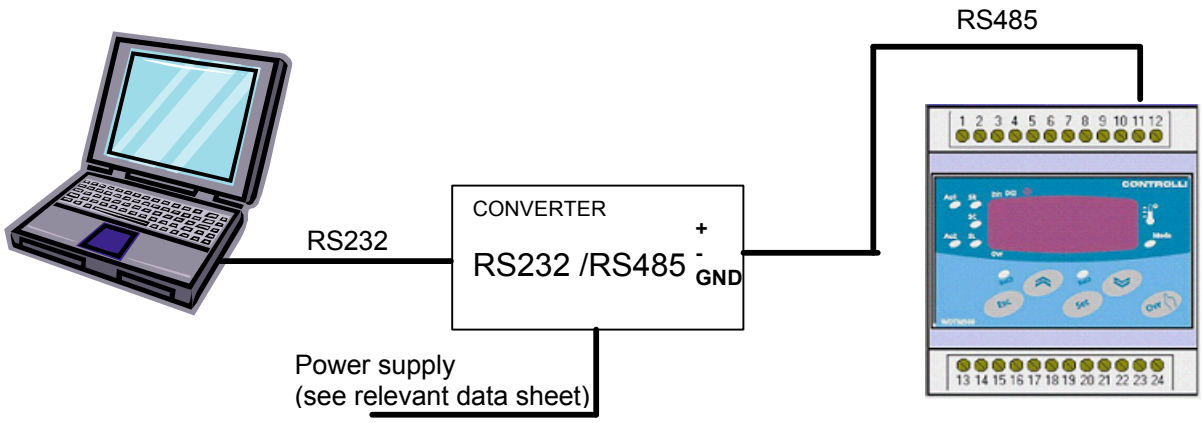
## HW REQUIREMENTS

Processor: Pentium 3 Intel or higher
Communication port: RS232 serial/ USB port:
Adapter:…/RS485
Operating system: Windows XP, Windows 2000
Recommended screen resolution: 1280 x 1024. => Character Height = large
Alternative video resolution 1024 x 768. => Character Height = small

## PC CONNECTION→ W500

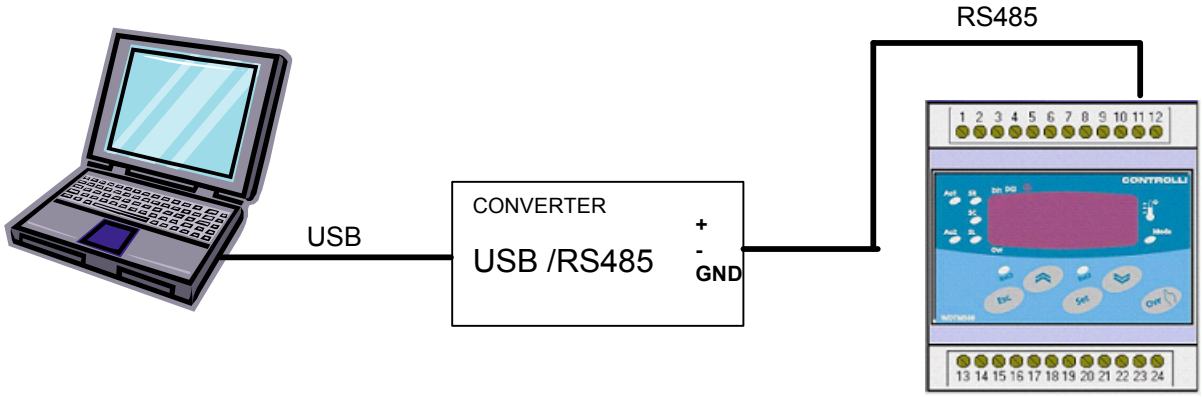
<u>If the PC has a serial port, use a RS232 / RS485 converter (LIB or LIBO type).</u>

**NOTE**: it is necessary to provide an outside power supply if an optoisolated converter is used.



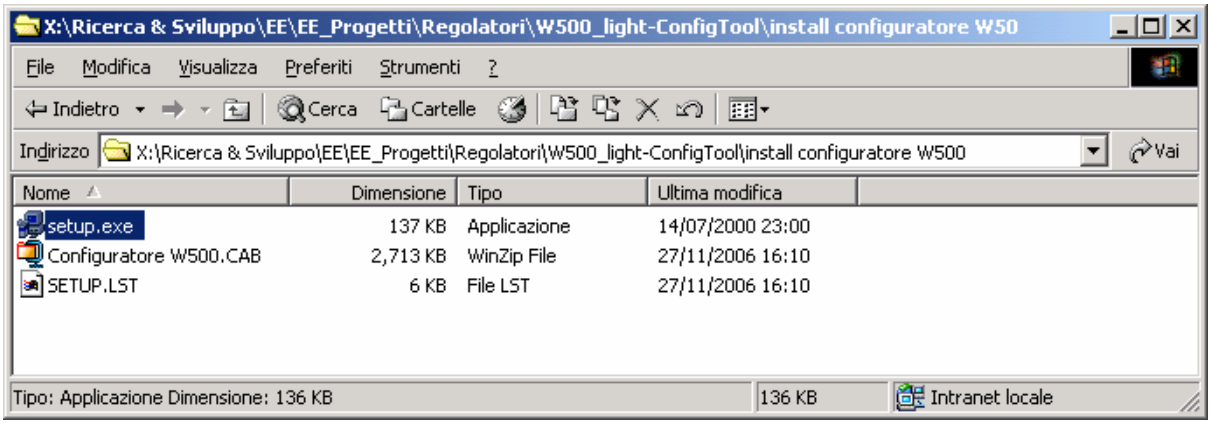

<u>If the PC has an USB port, use an USB / RS485 converter.</u>

**NOTA**: If any USB converter is used, it is not necessary to provide an outside power supply because the device is supplied directly by the USB port of the PC.
The USB port must be virtualised using a previously installed driver (VCP).



# PROGRAMME INSTALLATION

The programme installation will be supplied by a self-extracting zip file. It is necessary to copy it in a temporary directory and launch it: specify the temporary directory (e.g. C:\temp) where the 3 files have to be unzipped

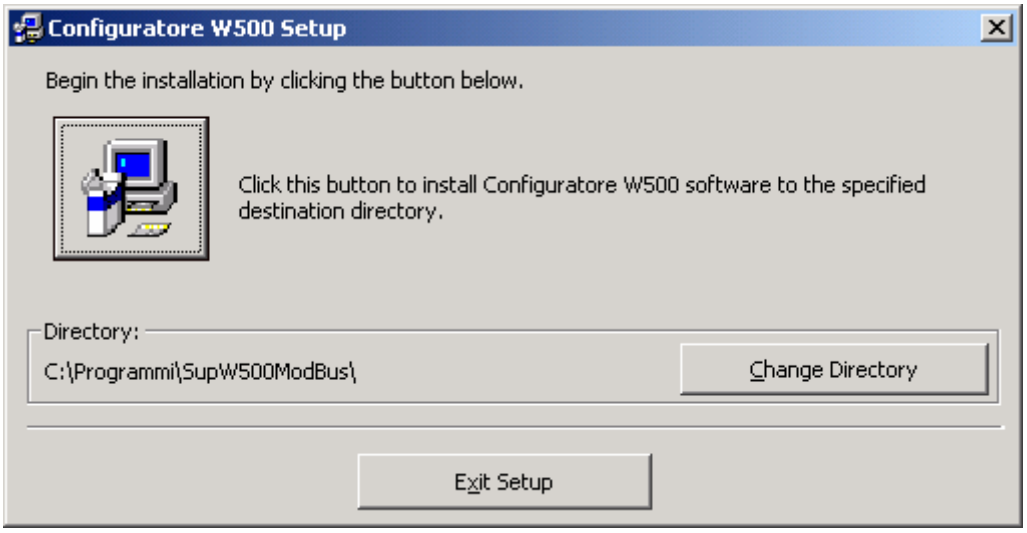



Launch the **setup.exe** programme.

The following “Configuratore W500 Setup” window will be displayed:

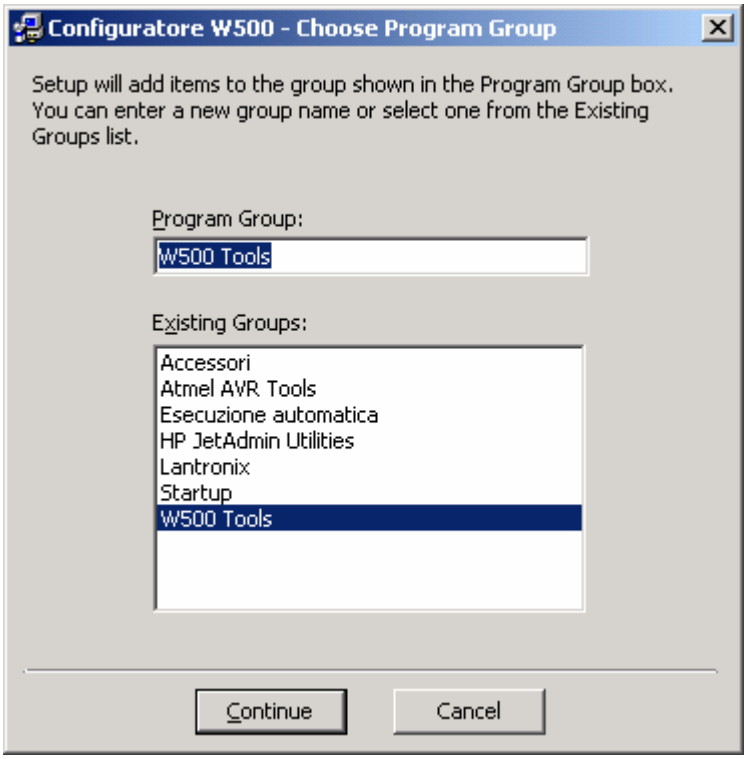

Select **OK**

The following window will be displayed:

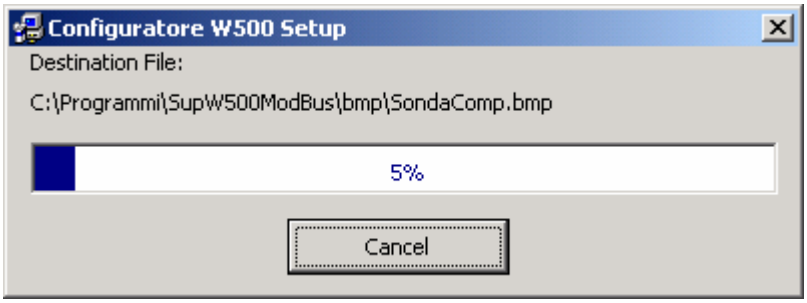



A default directory appears; it can be changed if required
Push the **PC** icon to start the installation

Then programme group can be selected:
Select the required group and press the **Continue** to go on.



A “Progressive Bar” appears: it shows the file installation phases.




The following window may appear while copying the files:


It means that the PC contains a file, which is more updated than the one to be installed.
Select **YES**, as proposed to keep the existing file.

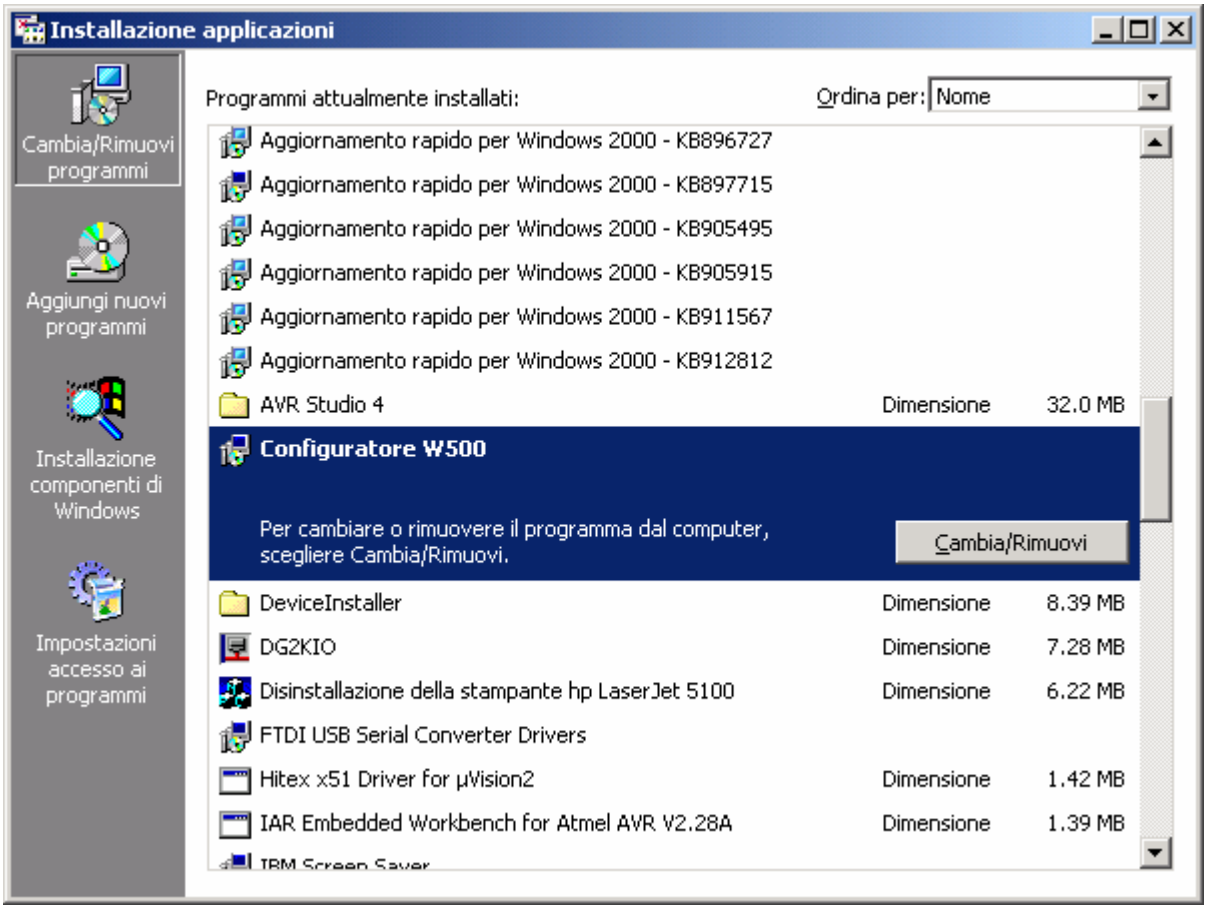
The following window will appear at the end of the installation


Push **OK** to finish installation.

## UNINSTALL

It is necessary to enter the **"Application installation"** window (in the Windows Control panel) to uninstall the programme.

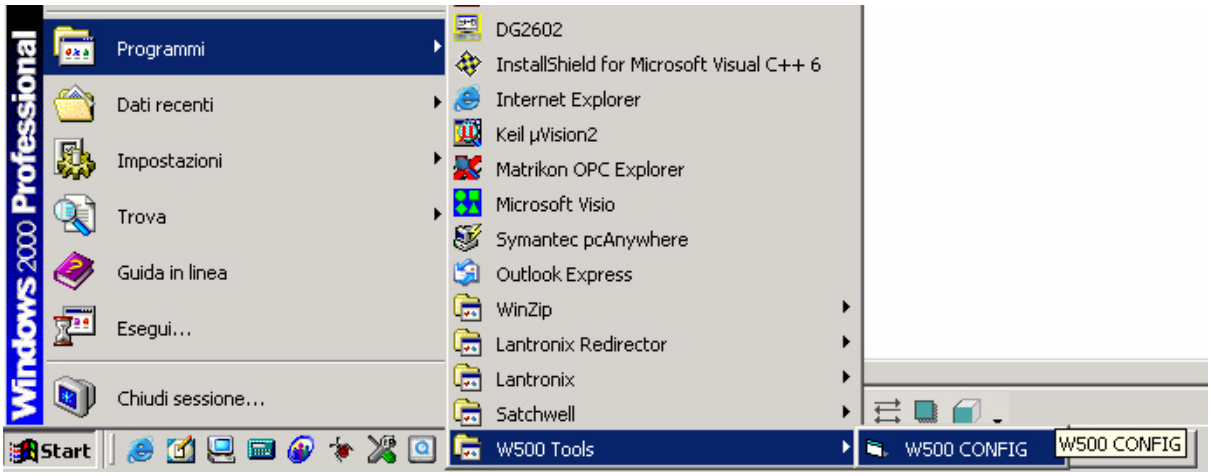
Select **"Configuratore W500"** and push **"Change/remove"** to uninstall.




Follow the instructions.

## PROGRAMME START-UP

The programme is launched by selecting **"W500 CONFIG"** inside the group specified during the installation, default is "W500 Tools".



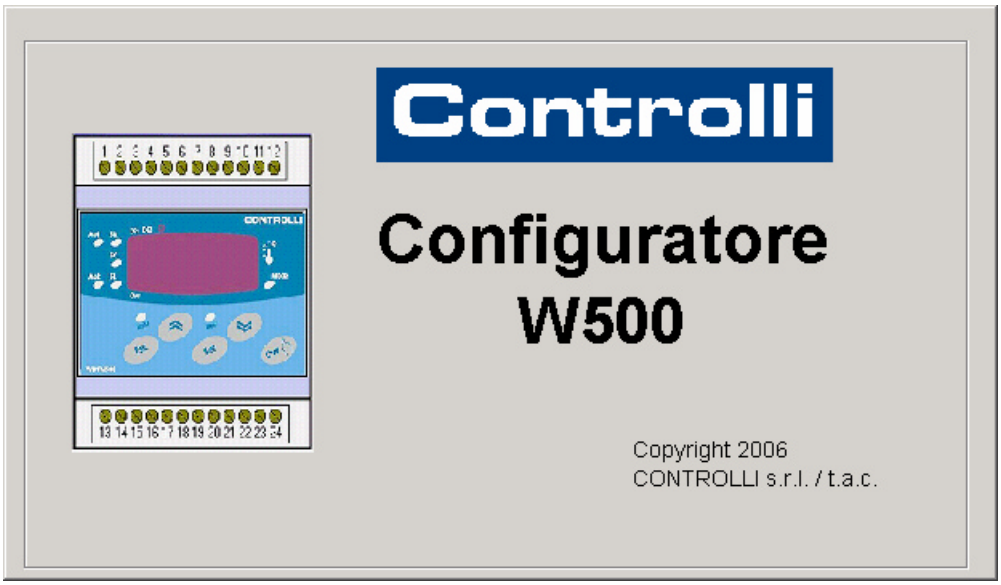

**PRELIMINARY NOTES:**

W500 controllers are factory set with ModBus address = 1 and Link bus address = 1.

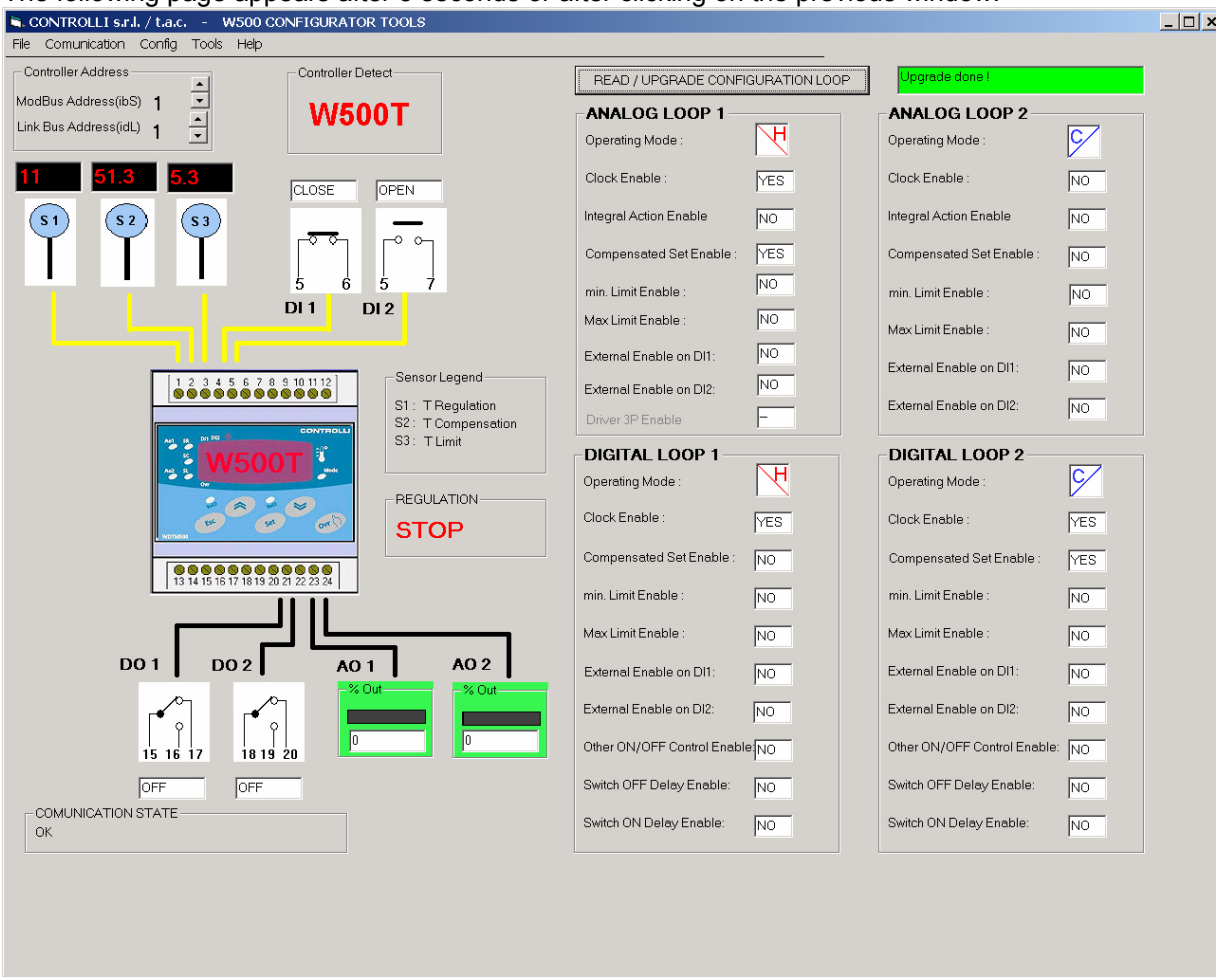
For the connection to a controller on a ModBus network or local Link bus subnet, check the address and then specify it on the configuration tool main page.

## PROGRAMME EXECUTION

The following page appears for 5 seconds when the programme is launched:



The following page appears after 5 seconds or after clicking on the previous window:




It is a display page showing graphically the controller inputs and outputs, which are continuously polled.
Sensors are not displayed, if they are not physically connected.
Data are updated cyclically by changing them one by one every 400 ms.

Select the **ModBus address** (1-255) and the **Link Bus address** (1-4) in the proper box.
The controller model is detected automatically and consequently displayed (W500T, W500H, W501T).

**NOTE**:
It will not be possible to enter the functions until the controller type is identified.
Moreover, when the controller address is changed, all data are initialised and then updated.
If the address of an inexistent controller is set, the communication status will display alternately “busy” and ”Slave Device Time-Out”.
Pay attention to the Link Bus address! It is possible to know whether the controller exists by reading the I/O data values (Master RAM data) not the Communication Status.
If the master doesn’t receive any response from the slave when other data are required (Slave EEPROM data), it will send a special message and the Communication Status will display alternately “busy” and ”Slave Device Exception Response”.
In this case it is necessary to disconnect communication and successively re-connect it.
The fourth sensor (H) is displayed, if enthalpy is enabled.
The **CONTROLLER STATUS** box shows the controller status: COMFORT, STOP or ECONOMY.
The **SENSOR LEGEND** displays the sensor description according to the type of controller selected.

It is possible to select configuration of the 4 loops of the connected controller by pushing the key "**READ / UPDATE CONFIGURATION LOOP** ". A text box shows when update is in progress and when the process ends.
The operating mode is indicated by the icons.

Icon description:

Heating Loop

Cooling Loop

Heating/Cooling Loop (S/W changeover)

Heating/cooling sequence loop (1-5 and 6-9 range)


Switch on/off delay

Humidity Loop

De-humid. Loop

Enthalpy

**Note**: if the functions are not available for the selected controller type are displayed in grey.

Down on the left is shown the controller communication status. In case of problems it helps to trace the eventual reasons why data are not updated.

| *STATUS* | | *DESCRIPTION* |
|---|---|---|
| "Busy" | ➔ | waiting a response |
| "OK" | ➔ | correct response |
| "Slave Device Exception Response" | ➔ | the controller has replied, but not at the request |
| "Message Overrun" | ➔ | a new request has been made before obtaining a response |
| "Slave Device Time-Out" | ➔ | the response has not arrived within the set Time out |
| "Invalid CRC In Slave Response" | ➔ | checksum error. The response can be wrong. |
| "Invalid Slave Response" | ➔ | controller response not valid |

The following functions are currently possible using the toolbar:
1. to exit the programme (File -> exit)
2. to configure the serial port (Communication -> Configure)
3. to start communication (Communication -> Start)
4. to disconnect communication (Communication -> Disconnect)
5. to configure the compensation curve (Configuration -> Compensation)
6. to configure time schedules (Configuration -> schedule programs)
7. to read and write all controller parameters individually (Configuration -> Parameters)
8. to load and store controller EEprom data in one file (Configuration -> EEprom -> Load_Storage)
9. to read from a file and download controller EEprom data (Configuration -> EEprom -> Read _Download)

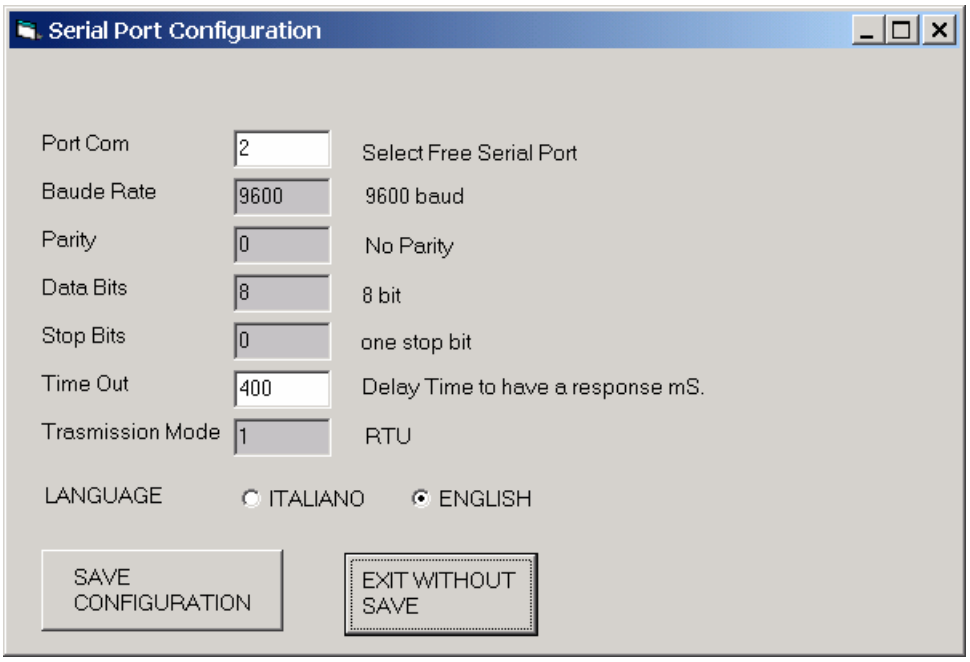
10. to select the Enthalpy simulator accessories (Accessories -> Enthalpy)
11. to display the W controller data sheets (Help -> Data Sheets…)
12. to display the W controller product manuals (Help -> controller product manuals…)
13. to display an information page (Help -> product information)

## 1 Exit the Programme

The "**File**" - "**Exit**" menu ends the programme.

## 2 Serial Port Configuration

The "**Communication - Configure**" menu displays the following window:




It is possible to set all parameters typical of a serial communication, but it is necessary to set only the serial port, to which the RS232/RS485 converter or USB/485 port (USB port will be combined to a COMx virtual port ) is connected, to interface with W500 controllers.
The Time Out is changeable but it is not necessary to modify it.
The serial port is configured with the following values:

*Baud Rate* = **9600**
*Data Bit* = **8**
*Parity* = **0 - No Parity**
*Stop Bit* = **0 – one stop** bit
*Time Out* = **400 mS**.
*Transmission Mode* = **1 – RTU**

In this window is possible to set the language (Italian or English).

Set data can be saved ("SAVE CONFIGURATION" button) so that h they can be used at re-start.

## 3 Communication Start-up

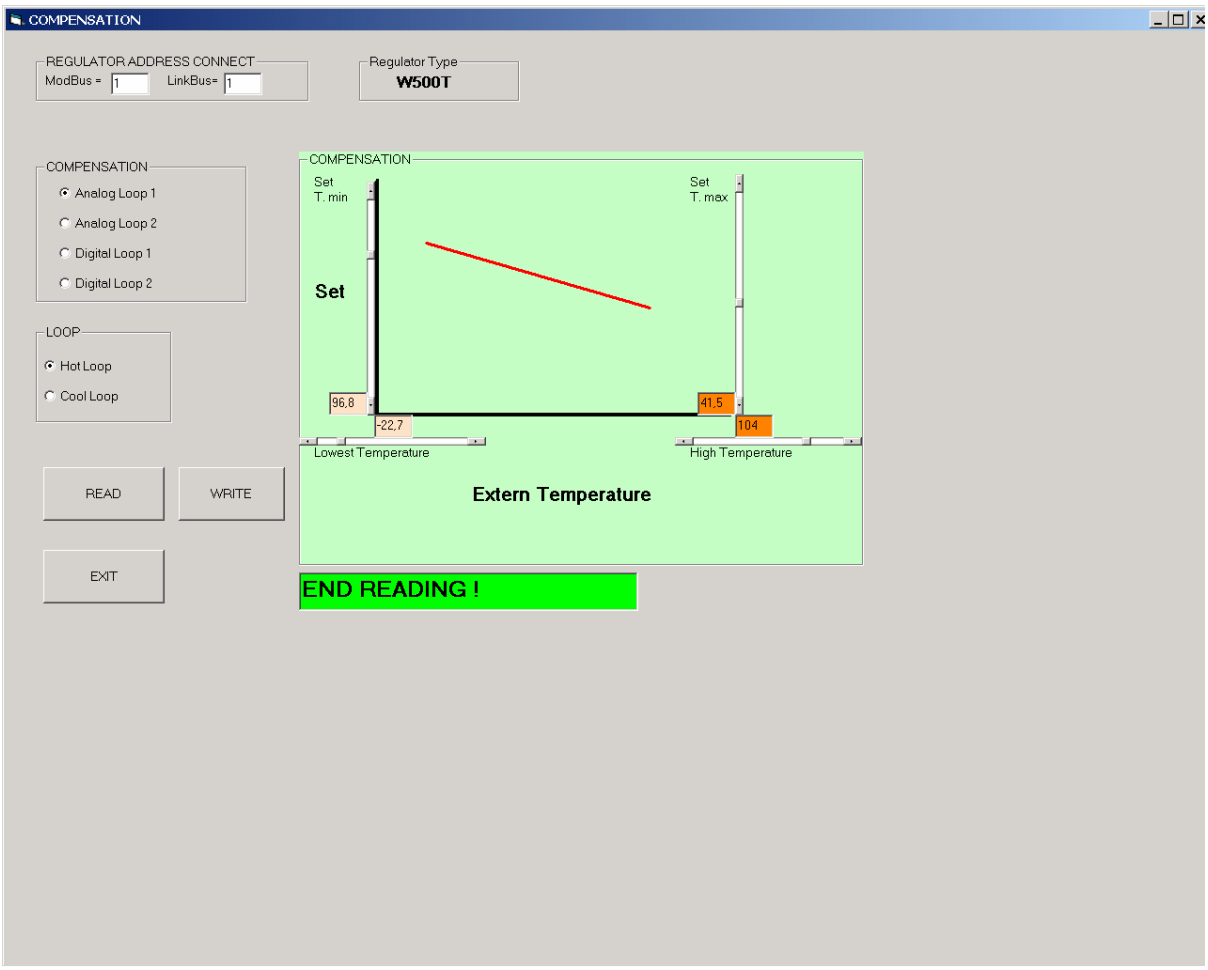
It is possible to start data request by selecting the "Start" menu. It is not possible to start the menu, if communication is already ON.

## 4 Communication Disconnection

It is possible to end data request by selecting "**Disconnect**". The menu is not selectable, if communication is already OFF.

## 5 Compensation Curve Configuration

The following window is displayed by selecting "**Configuration - Compensation** " menu:



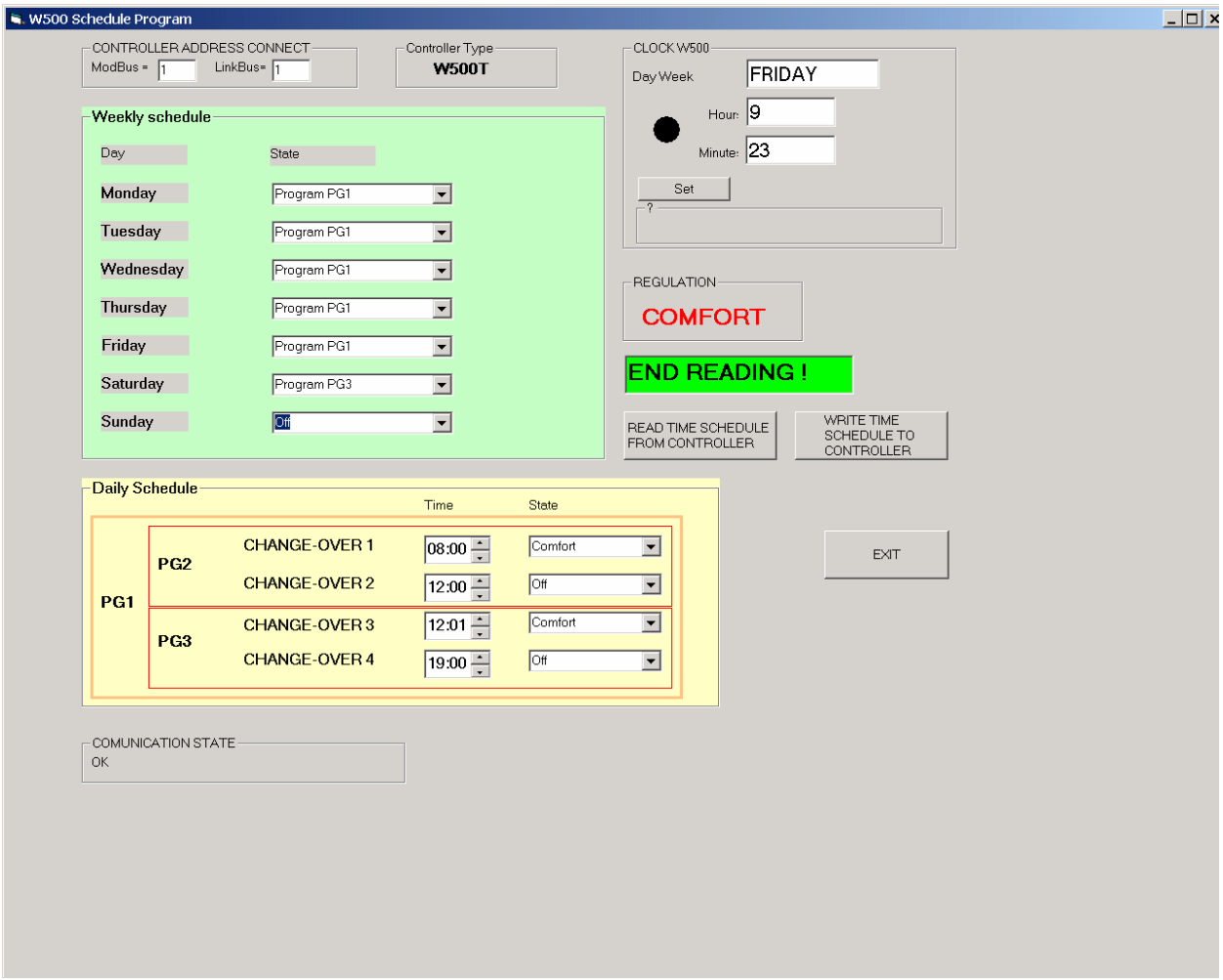

In this page it is possible to set the compensation curves related to the various Loops.
Moreover, the "CONTROLLER ADDRESS", "CONTROLLER TYPE" and "COMMUNICATION STATUS" are also displayed (read only).

When the page is entered, are updated in sequence all the values related to the controller type.
In fact, only the W501T provides a 3-point curve only for the Heating Loop, while the other models have a 2-point curve.
Pushing **"READ"** key on request, all data are updated.
If one or more W500 controller data must be changed, act on the sliders the value will be displayed in the relevant box.
Set values are automatically checked in function of other values, and then the visualisation is updated.
Pushing "**WRITE**" key, all data are transferred as a whole into the controller overwriting old data. This action is indicated by the "LOADING" writing on red background followed by "READING END" on a green background. A confirm window will be displayed after pushing the EXIT key.
To exit the page push **YES**; when it is necessary to store changed data, push **NO**.

**NOTE:**
Writing on a Slave controller it will take more time, because communication is carried out through the Link Bus.

## 6 Schedule Programme Configuration

The following window will be displayed by selecting "**Configuration – Clock and Schedule"**:



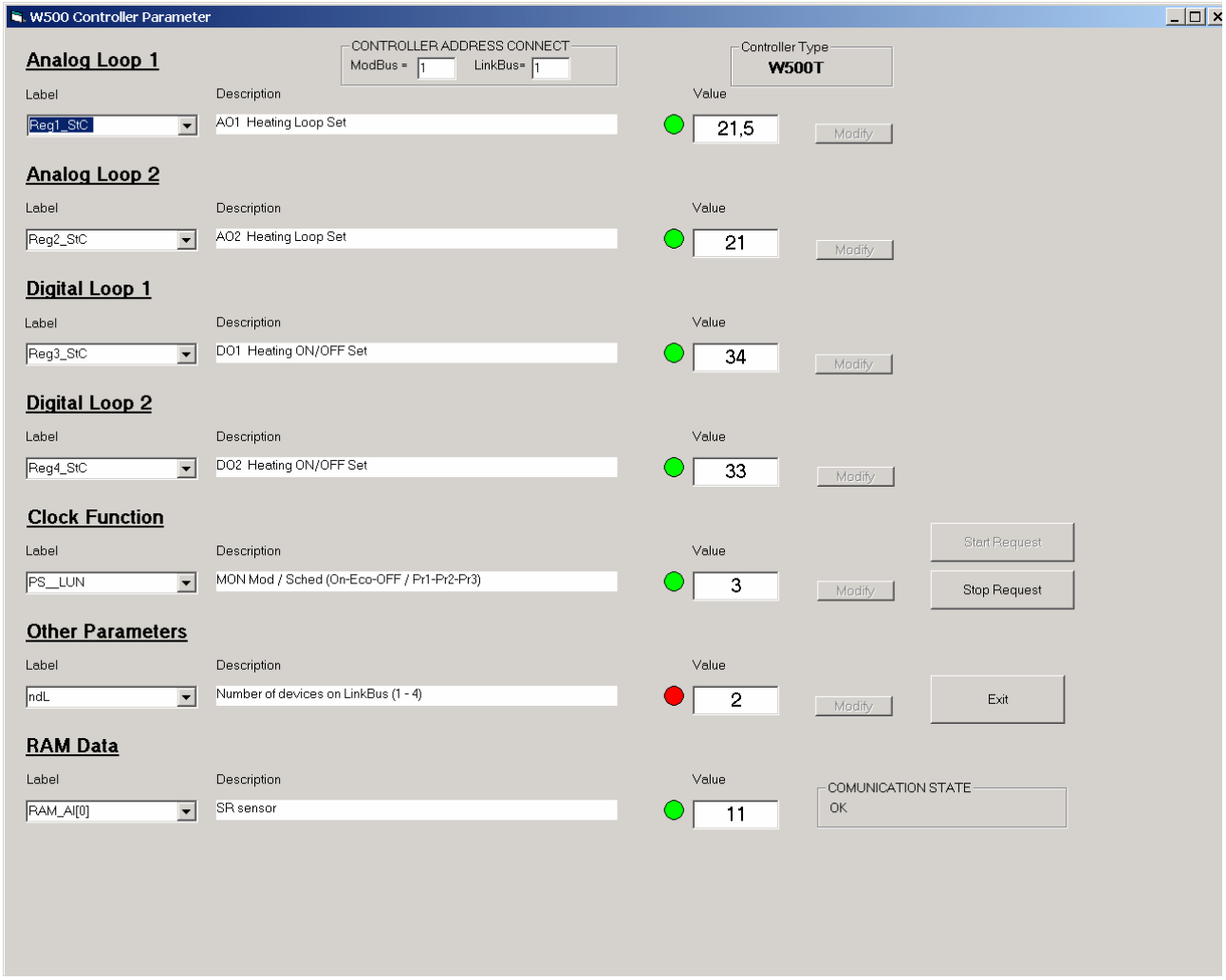

In this page it is possible to set the **weekly, daily schedule and clock** for the selected controller.
Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed (read only). When the page is entered, all controller values are updated in sequence. Then only clock data are updated.
Pushing **"READ CONTROLLER DATA"** key on request, all data are updated. Under request, by pushing "**WRITE TIME SCHEDULE TO CONTROLLER**" all data are updated.

To change one or more data of W500 controller schedule programmes, it is necessary to set the ones in the proper boxes and push "**WRITE CONTROLLER DATA**" key. Therefore, all data are transferred to the controller; overwriting the existing ones. This action is showed by a "LOADING" writing on red background; followed by the writing on green background "READING END". A confirm window will be displayed after pushing the EXIT key.
To set/edit the controller time it is necessary to select the pushbutton "**SET".** This displays the cursors which enable data change. Push the button "CONFIRM" to write data on the controller.
By pushing "EXIT" a confirmation window appears. To exit the page push **YES**; push **NO** to save changed data.

**NOTE:**
Writing on a Slave controller it will take more time, because communication is carried out through the Link Bus.

# 7 Reading and Writing all Controller Parameters

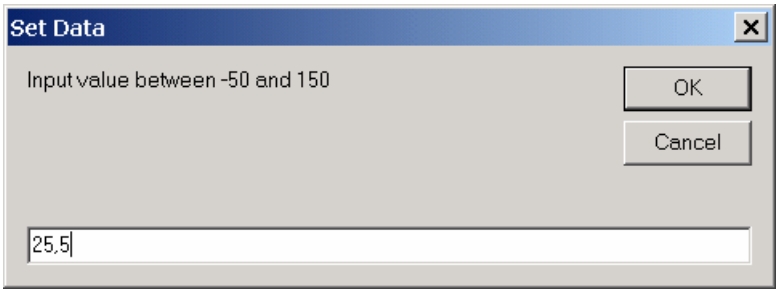
The following page will be displayed by selecting the "**Configuration - Parameters**" menu:




In this page it is possible to display and set individually all the parameters of the selected controller. Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE" and "COMMUNICATION STATUS" are also displayed (read only).

When the page is entered, data are updated. A red dot shows that data is going to be updated.
For each of the 7 groups it is possible to select, in the proper combo box, the variable to be displayed.

It is necessary to stop communication by pushing the "**REQUEST STOP**" key to change a value.
Select the variable to be changed: the variable will be updated and the following window will appear:



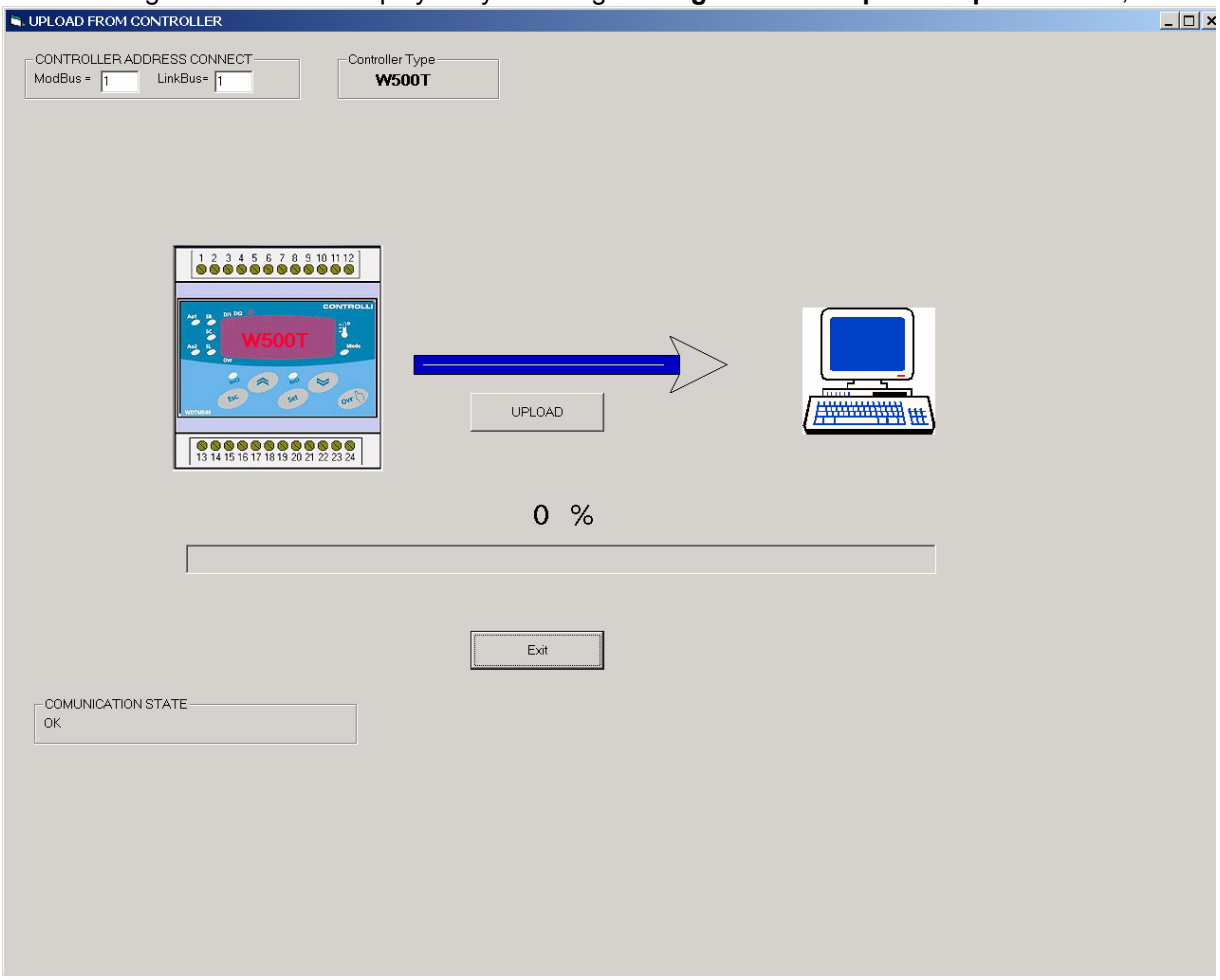

The inserted value must be included within the proper range.

**NOTE**: if the value has a decimal number, it is necessary to use the comma as a separator.

It is necessary to start communication again the by "**START REQUEST**" key to restart updating.

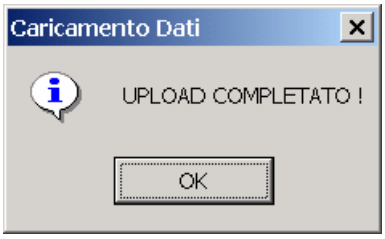
## 8 Loading and Saving Controller EEprom Data in one File

The following window will be displayed by selecting "**Configuration – EEprom - Upload/Save**", menu:

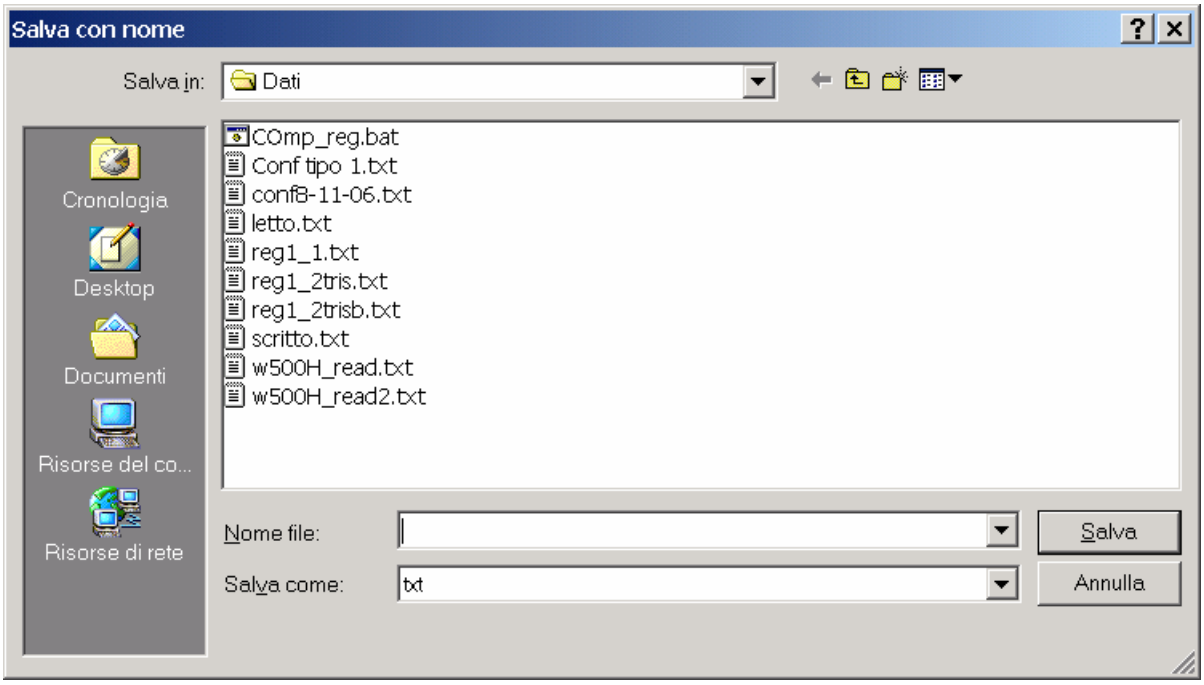



This menu allows to save the configuration carried out on the connected controller in one single file.
Storage is useful if such configuration is required on other controllers.
It is always necessary to read all data from the controller by uploading them, before saving them in a file.
This page allows to load on the PC all configuration parameters of a connected controller, to upload and create the configuration file and download it on the other controllers.
Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed.

Therefore:
Pushing the "**UPLOAD**" button data reading starts.
The following window appears when the loading has finished:



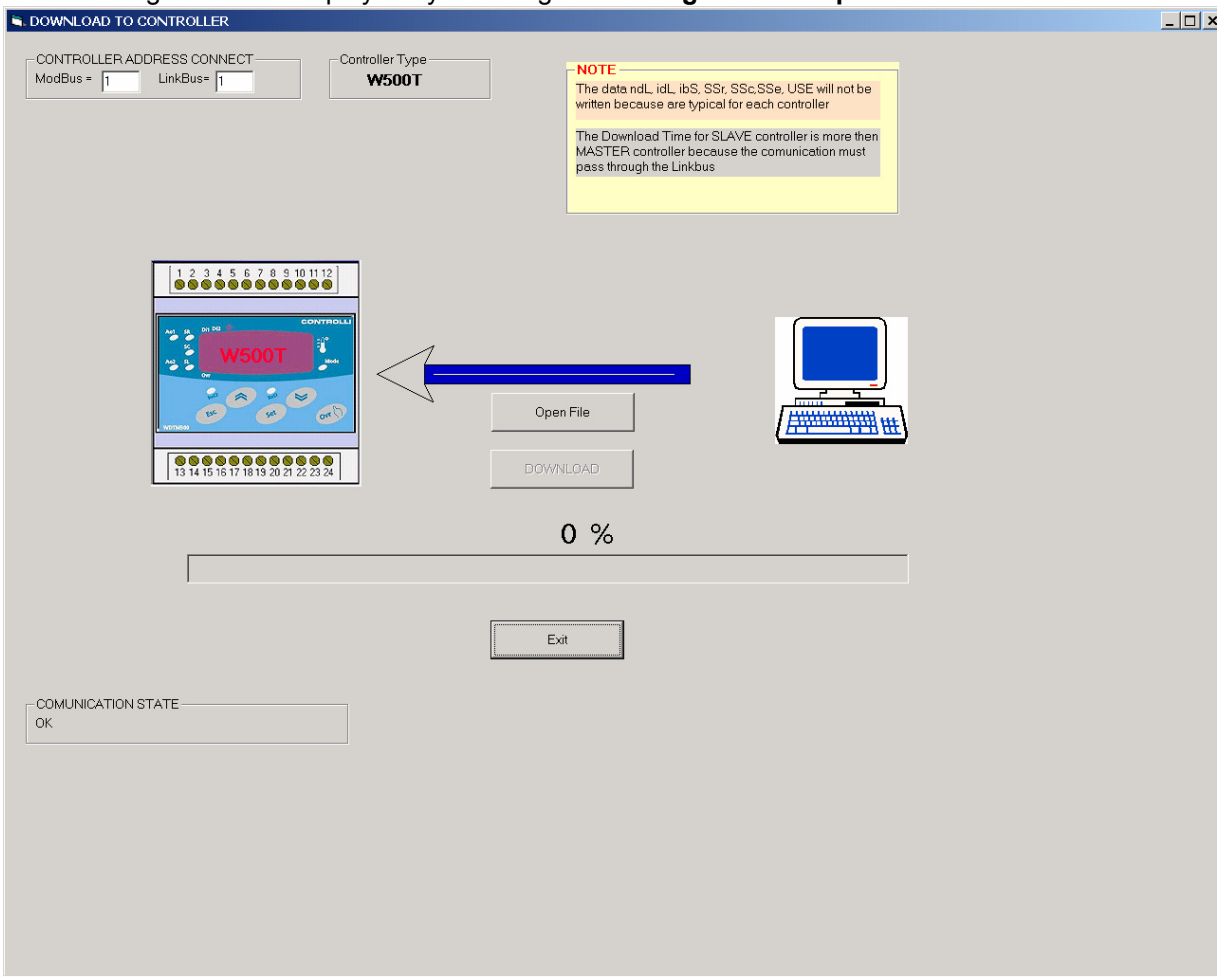
The following window appears by pushing “Ok” ; it is then possible to save data into one file:




Insert the file name and select the “SAVE” key.

## 9 Reading from a File and Downloading Data into the Controller EEprom

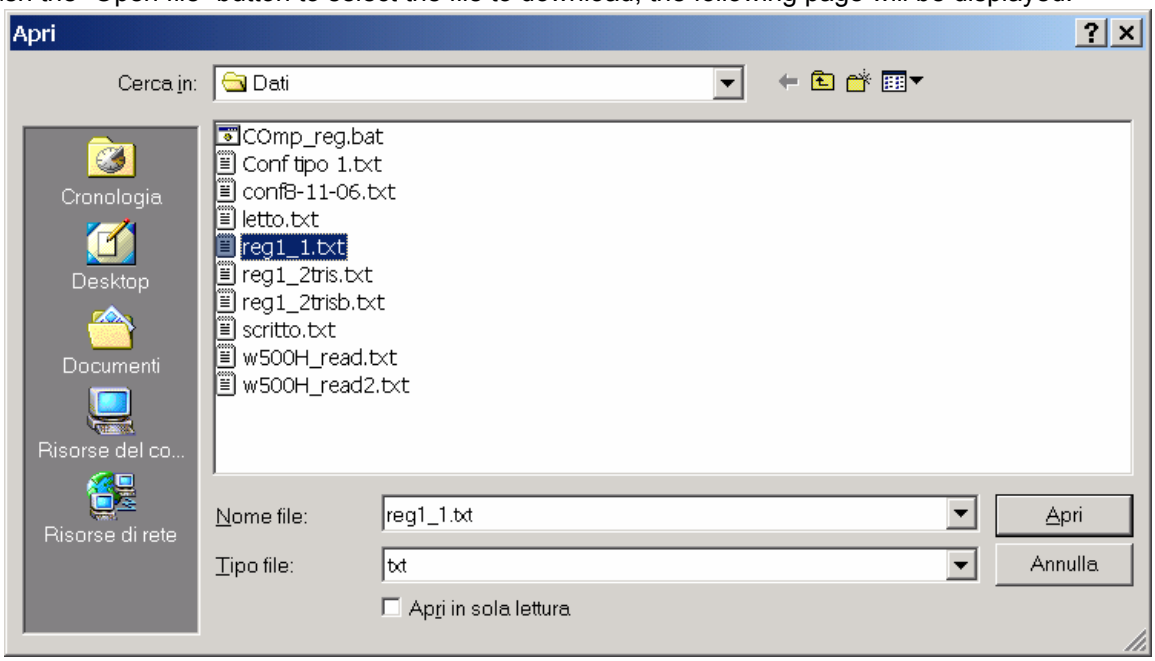
The following window is displayed by selecting the "**Configuration – Eprom - Read /Download**":




It is possible to download on a connected controller all configuration parameters saved in a file.

Then, the "CONTROLLER ADDRESS", "CONTROLLER TYPE", "CONTROLLER STATUS" and "COMMUNICATION STATUS" are also displayed.

Push the "Open file" button to select the file to download; the following page will be displayed.



In this window, select an existing file and push “open”.

The programme will close the window and load the file, the button “**DOWNLOAD**” will become active.

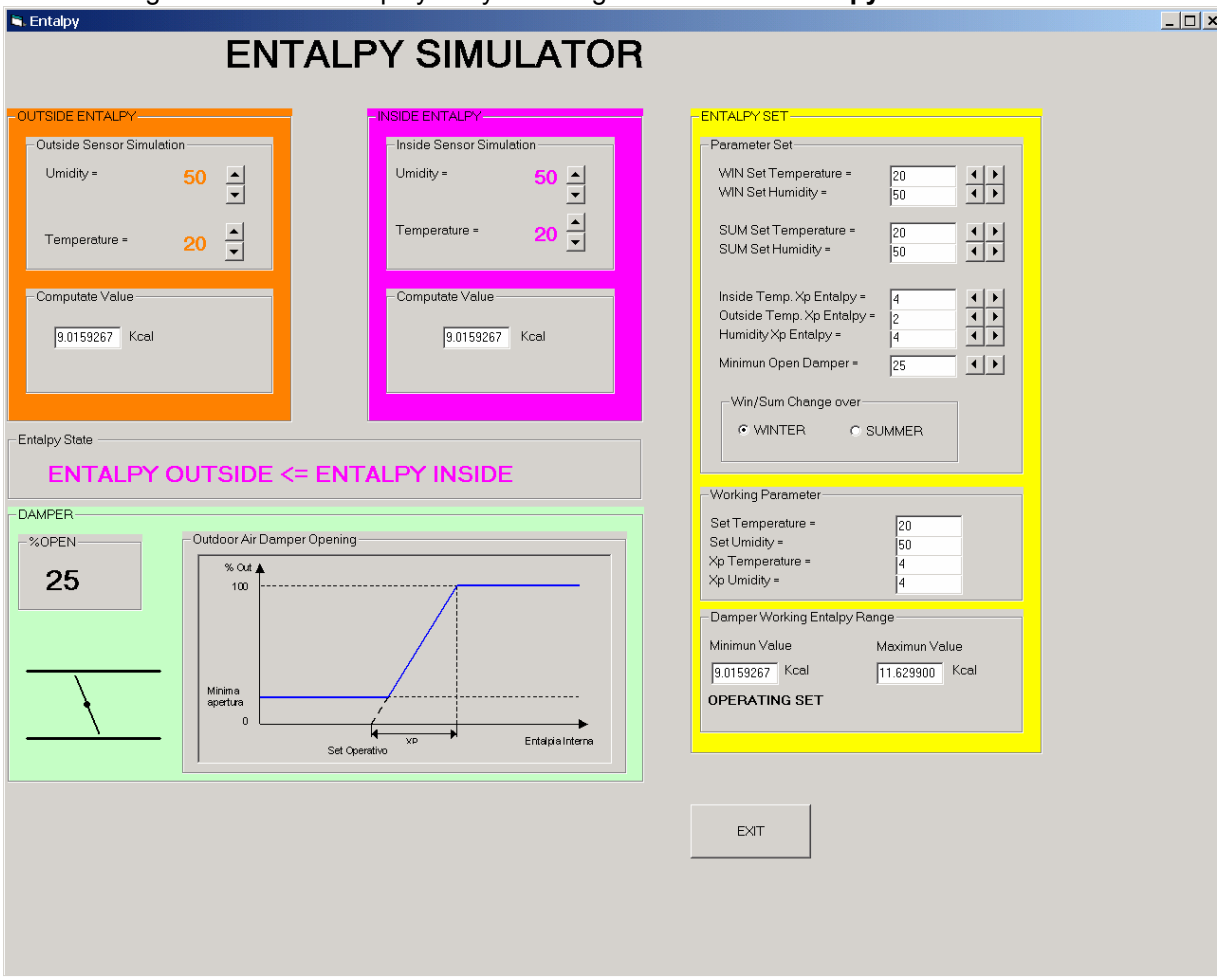
Pushing the “ **DOWNLOAD** ” button data writing on the controller starts.

The following window appears when loading has finished:


**NOTE:**
The ndL, idL, ibS, SSr, SSc, SSL, SSE parameters are not written; this setting has to be carried out in the “parameters” page or manually on the controller.
Writing on a Slave controller it will take more time because the communication is carried out by Link Bus.

## 10 Tools Selection

The following window will be displayed by selecting the "**Tools – Enthalpy** " menu:



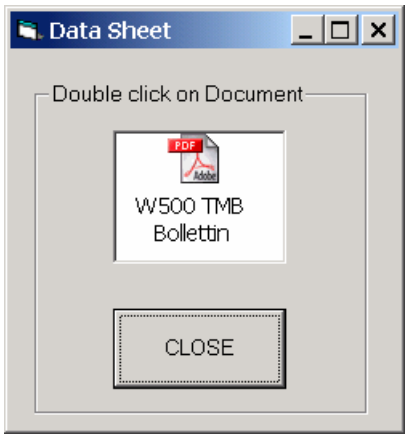

It is possible to carry out a simulation of the damper positioning according to the enthalpy calculation.

Calculation is carried out in real time.
Set the parameter values and simulate the sensor value: damper positioning follows automatically (the diagram helps to understand the result).

**ATTENTION!**
In order to avoid damper hunting, the W500H controller checks whether a situation persists for at least 15 minutes, so that the controller can determine whether is more convenient inside or outside enthalpy.

## 11 Viewing Controller Data Sheets

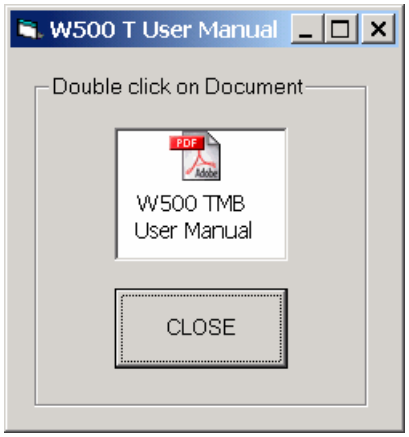
The following window will be displayed by selecting "**Help – W500 Data sheets (pdf) – W…**" menu:




Double-click the Pdf icon to open the documents.

## 12 Viewing Controller User Manuals

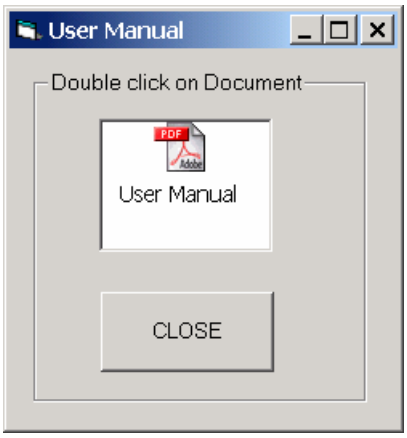
The following window will be displayed by selecting "**Help – W500 User manual (pdf) – W…**" menu:




Double-click the Pdf icon to open the document.

## 13 Viewing the Configuration Tool Manual

The following window will be displayed by selecting "**Help – Configuration tool manual (pdf) – W…**":




Double-click the Pdf icon to open the document.

## 14 Viewing the Information Page Visualisation

The following window will be displayed by selecting "**Help – Product information"** menu: