humiSet - Humidifier Programming Tool

User manual

LEGGI E CONSERVA QUESTE ISTRUZIONI

READ AND SAVE THESE INSTRUCTIONS

CAREL

Technology & Evolution

INDEX

Introduction

CAREL have developed a kit —***humiSet***— intended for both OEM customers and CAREL branches. It contains all the HW & SW parts and components necessary to program any of CAREL controllers for any type of humidifier for series ***humiSteam***, ***heaterSteam***, ***humiFog***, ***gaSteam***, **kit OEM "KUE"**.

With ***humiSet*** and a Personal Computer, the user can program (i.e. download the parameters needed to configure the humidifier) both on-board and off-board ("on-the-table") controllers.

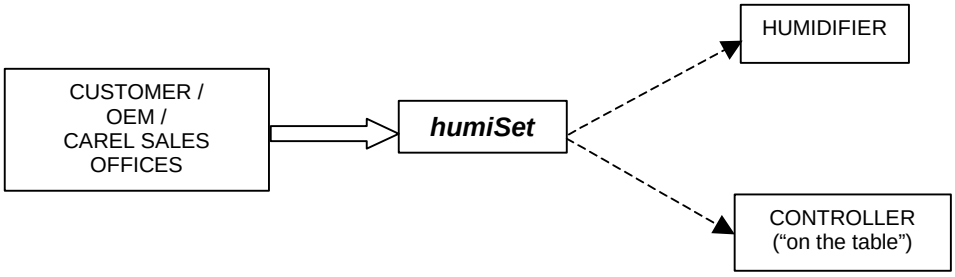

Figure 1

Components

- Installation CD (Figure 2)

Figure 2

- RS232-485 Converter (Figure 3)

Figure 3

- 230VAC (50/60Hz) / 12VAC transformer feeding the RS232-485 Converter (Figure 4)

Figure 4

- RS232 Cable for connection between the PC serial port (output) and the RS232-485 Converter (Figure 5)

Figure 5

- 9 pin plug/ 25 pin female-terminal serial adapter for PC with 25 pin output (Figure 6)

Figure 6

- HPI (Humidifier Programming Interface) adapter (Figure 7)

Figure 7

Note: HPI must be powered only by the supplied transformer (figure 8) or by a transformer featuring an output 24 Vac protected against the short circuits.

- 230VAC (50/60Hz) / 24VAC transformer with (1x faston connector and 1x plug-in connector) for the HPI adapter feeding “Boardcontroller” controllers (see below) (Figure 8)

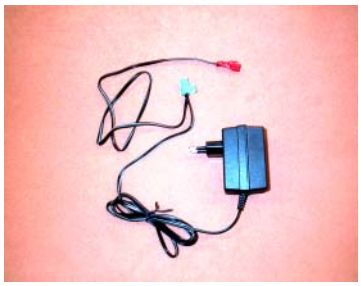

Figure 8

- 3-to-4-pole communication cable with plug-in connectors for connection to RS232-RS485 Converter as an HPI adapter, or directly to either the humidifier or “Boardcontroller” (Figure 9)

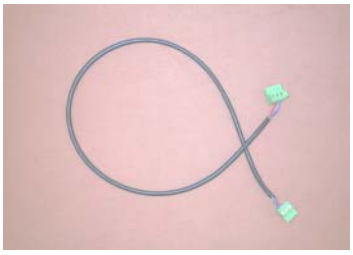

Figure 9

- Flat communication cable for connection between the HPI & “Boardcontroller” (for type UM*******, UE***P**** & KUE******* humidifiers, see table 2) (Figure 10)

Figure 10

- Flat cable for connection between the HPI & Humicontrol (Figure 11)

Figure 11

Installing the hardware

CAREL supplies a complete hardware kit—***humiSet***—common to all controllers. The kit parts to be used for configuring the controller will vary depending on the circumstances.
Figure 12 & Figure 13 show the standard kit installation, which is common in all cases.

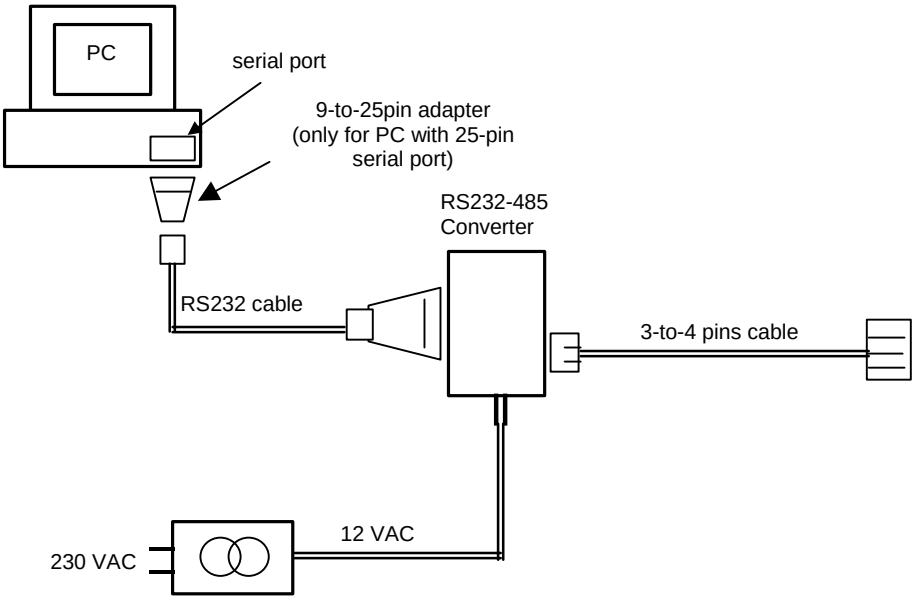

Figure 12

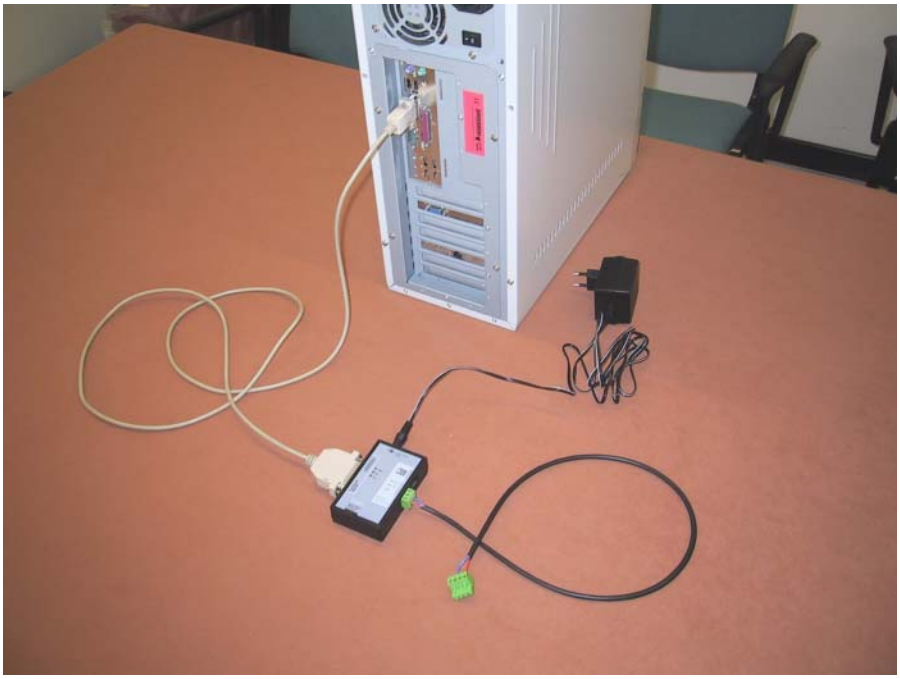

Figure 13

The hardware connections must be completed according to the circumstances, as described in detail in the following paragraphs.

Classifying the connections

We have already mentioned that it is possible to program both on-board controllers (i.e., controllers assembled in finished humidifiers) and off-board controllers (i.e., controllers not connected to the humidifier, namely, put “on the table”).

To help you to understand the different types of connections, it is worth referring to Figure 14, Figure 15, Figure 16, and tables 1 & 2. They list the codes of the different controllers and Interface Boards that are used for the humidifiers, and refer to the type of connection required for programming.

Table 1 refers to finished humidifiers and lists the codes of the different controllers and interface boards assembled in the humidifiers.

Table 2 refers to controllers to configure “on the table”.

The letters in column “Type of Connection” indicate the classification of particular connections.

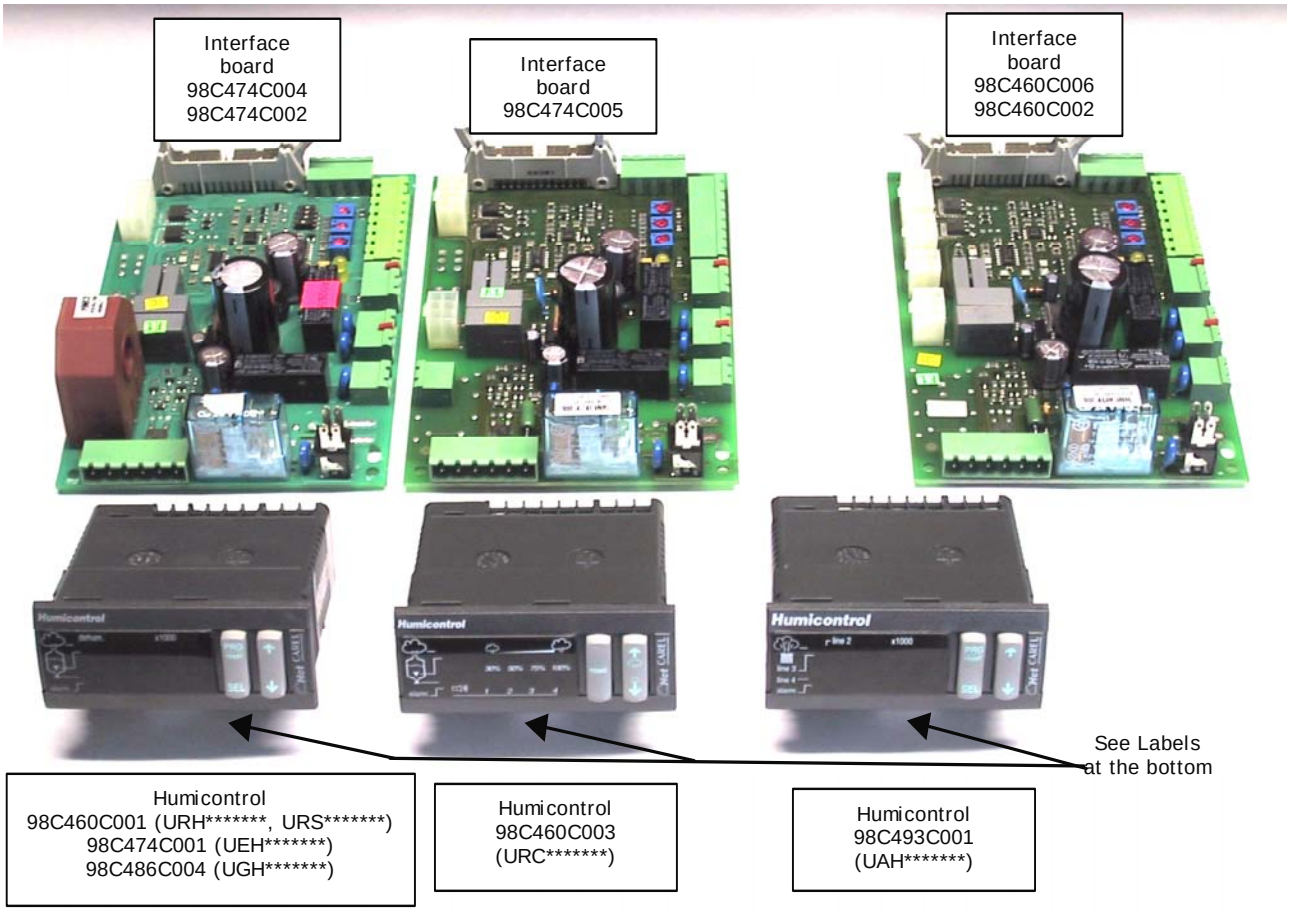

Figure 14

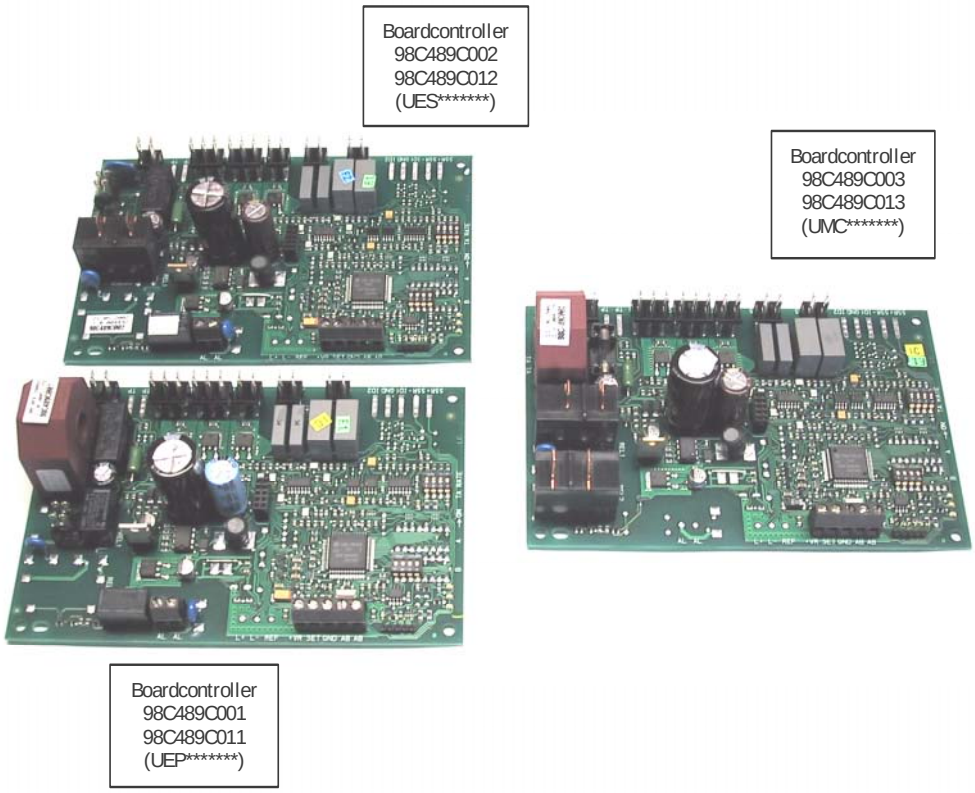

Figure 15

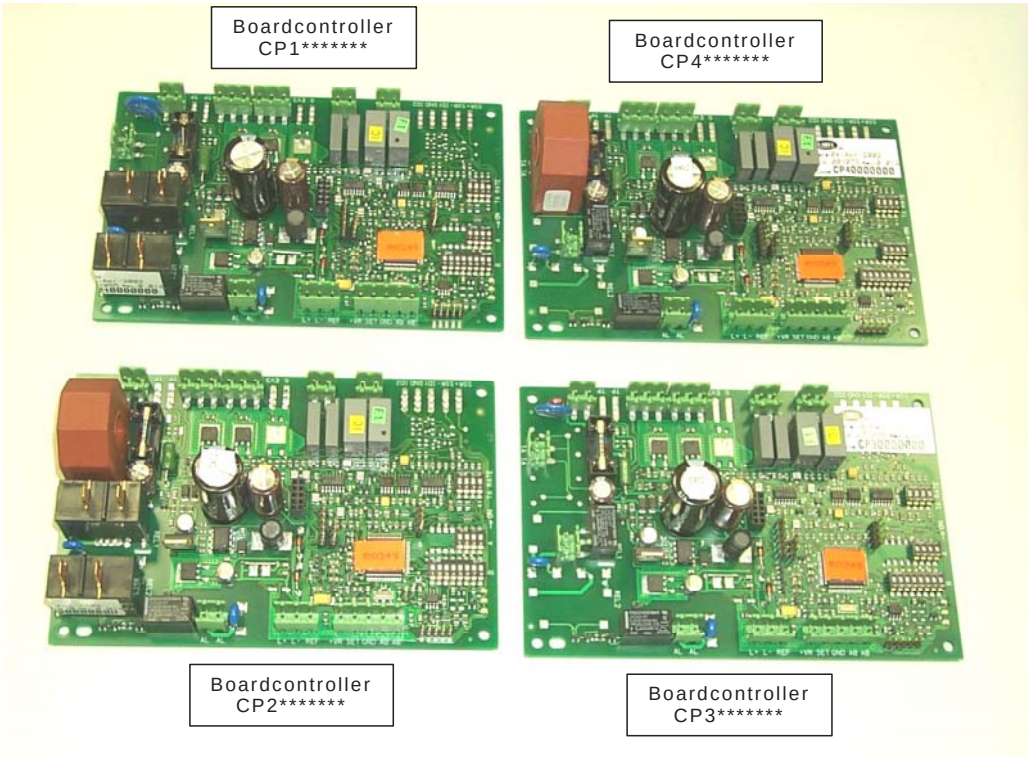

Figure 16

Table 1- Finished humidifiers -

Type of connection	Type of Humidifier	Price-list Humidifier / Controller codes	CAREL production code (on interface board and controller labels)	**Type of display**
A (see Figure 17 Figure 18 Figure 19)	With immersed electrodes "***humiSteam***" – humidity regulation (rated production <= 15 kg/h)	Humidif: UE***H**** Controll: UEH*******	Int: 98C474C004 or 98C474C002 (serial output available) Controll: 98C474C001 (Humicontrol)	Humicontrol, DIGIT version
	With immersed electrodes "***humiSteam***" - humidity regulation (rated production >= 25 kg/h)		Int: 98C474C005 (serial output available) Controll: 98C474C001 (Humicontrol)	
	With heaters "***heaterSteam***" – humidity regulation	Humidif: UR***H**** Controll: URH*******	Int: 98C460C006 or 98C460C002 (serial output available) Controll: 98C460C001 (Humicontrol)	
	With heaters "***heaterSteam***" – ON/OFF	Humidif: UR***C**** Controll: URC*******	Int: 98C460C006 or 98C460C002 (serial output available) Controll: 98C460C003 (Humicontrol)	Humicontrol, LED version
	With heaters "***heaterSteam***" – temperature regulation (Turkish baths)	Humidif: UR***T**** Controll: URS*******	Int: 98C460C006 or 98C460C002 (serial output available) Controll: 98C460C001 (Humicontrol)	Humicontrol, DIGIT version
	With atomisation "***humiFog***"	Humidif: UA***H**** Controll: UAH*******	Int: 98C460C006 or 98C460C002 (serial output available) Controll: 98C493C001 (Humicontrol)	
	With gas "***gaSteam***"	Humidif: UG***H**** Controll: UGH*******	Int: 98C460C006 or 98C460C002 (output available) Controll: 98C486C004 (Humicontrol)	
B (see Figure 20 Figure 21 Figure 22)	Immersed electrodes "*humiSteam*" – proportional-ON/OFF regulation (rated production <= 15 kg/h)	Humidif: UE***P**** Controll: UEP*******	98C489C001 or 98C489C011 (Boardcontroller) (serial output unavailable)	3-LED DISPLAY (red, yellow & green)
	Immersed electrodes "***humiSteam***" – proportional-ON/OFF regulation (rated production >= 25 kg/h)		98C489C002 or 98C489C012 (Boardcontroller) (serial output unavailable)	
	Immersed electrodes "***homeSteam***"	Humidif: UM***C**** Controll: UMC*******	98C489C003 or 98C489C013 Boardcontroller) (serial output unavailable)	

if without serial option card TACP485000:
 	
B
 	
(see Figure 20 Figure 21 Figure 22)
 	
---------- 	
 	
if with serial option card TACP485000:
 	
C
 	
(see Figure 23 Figure 24 Figure 25)
	Immersed electrodes
	OEM "KUE"
		Humidif: KUE*******
		
		Controll: CP********
		(Boardcontroller)
			CP********
			(Boardcontroller)
			(output available if with serial option card TACP485000)
				3-LED DISPLAY
				(red, yellow & green)

Table 2
- Controllers "on the table" -

Type of connection	Type of Humidifier	Price-list Humidifier / Controller codes	CAREL production code (on controller plate)	Type of display
D (see Figure 26 Figure 27)	With immersed electrodes "***humiSteam***" - humidity regulation (rated production <= 15 kg/h)	Humidif: UE***H**** Controll: UEH*******	98C474C001 (Humicontrol)	Humicontrol, DIGIT version
	With immersed electrodes "***humiSteam***" - humidity regulation (rated production >= 25 kg/h)		98C474C001 (Humicontrol)	
	With heaters "***heaterSteam***" – humidity regulation	Humidif: UR***H**** Controll: URH*******	98C460C001 (Humicontrol)	
	With heaters "***heaterSteam***" – ON/OFF	Humidif: UR***C**** Controll: URC*******	98C460C003 (Humicontrol)	Humicontrol, LED version
	With heaters "***heaterSteam***" – temperature regulation (Turkish baths)	Humidif: UR***T**** Controll: URS*******	98C460C001 (Humicontrol)	Humicontrol, DIGIT version
	With atomisation "***humiFog***"	Humidif: UA***H**** Controll: UAH*******	98C493C001 (Humicontrol)	
	With gas "***gaSteam***"	Humidif: UG***H**** Controll: UGH*******	98C486C004 (Humicontrol)	
E (see Figure 28)	Immersed electrodes "***humiSteam***" – proportional-ON/OFF regulation (rated production <= 15 kg/h)	Humidif: UE***P**** Controll: UEP*******	98C489C001 or 98C489C011 (Boardcontroller) (output unavailable)	3-LED DISPLAY (red, yellow & green)
	Immersed electrodes "humiSteam" – proportional-ON/OFF regulation (rated production >= 25 kg/h)		98C489C002 or 98C489C012 (Boardcontroller) (serial port unavailable)	
	Immersed electrodes "***homeSteam***"	Humidif: UM***C**** Controll: UMC*******	98C489C003 or 98C489C013 Boardcontroller) (serial port unavailable)	

if without serial option card TACP485000:
 	
F
 	
(see Figure 29)
 	
---------- 	
 	
if with serial option card TACP485000:
 	
G
 	
(see Figure 30)
	Immersed electrodes
	OEM "KUE"
		Humidif: KUE*******
		
		Controll: CP********
		(Boardcontroller)
			CP********
			(Boardcontroller)
			(serial port available if with serial option card TACP485000)
				3-LED DISPLAY (red, yellow & green)

Point 1 . On-board connections

Type A connection

After completing the standard installation (see Figure 13), connect the 3-to-4-pole cable to the Interface Board inside the humidifier rack, as shown in Figure 17, Figure 18, and Figure 19.
Note: *With this type of connection, the precondition to program the controller is that the humidifier must be "on".*

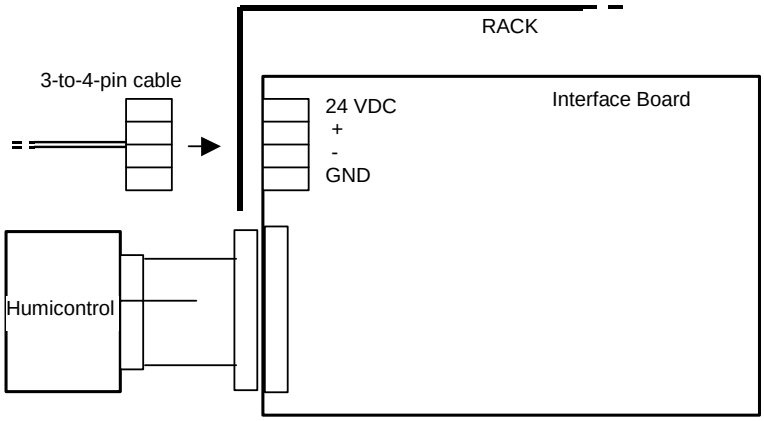

Figure 17

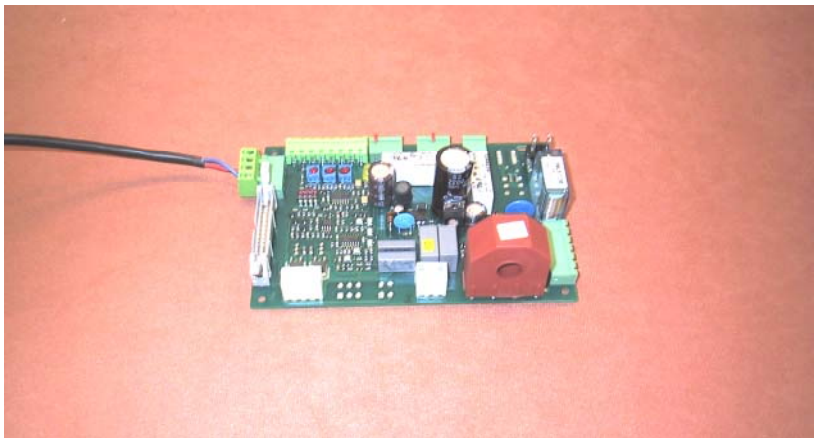

Figure 18

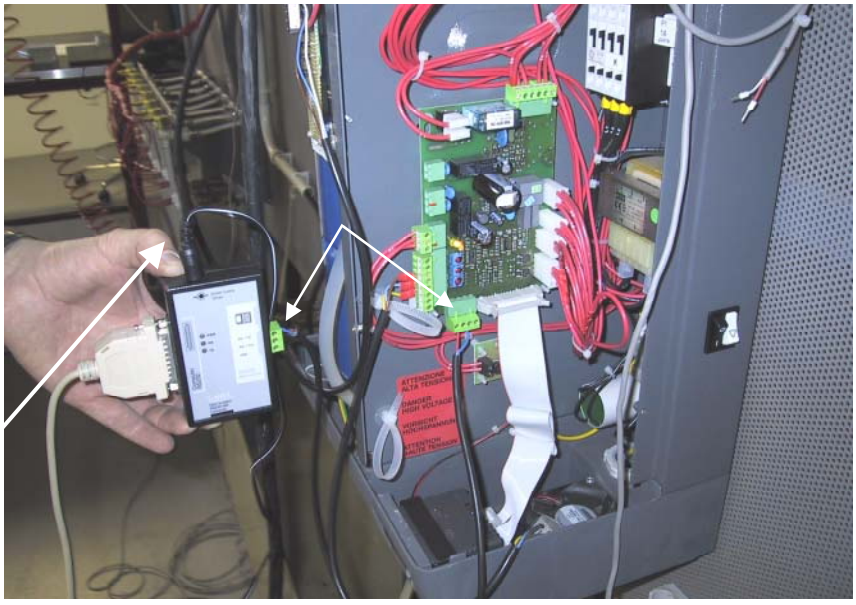

Figure 19

Precondition: since the board is installed on a finished humidifier, the controller programming can be performed only if the humidifier is "on".

Type B connection

The “Boardcontroller” controller used with this kind of connection has no serial port. Use the black 10-pin female terminal in the middle of the board instead.

To make the connection, use the Humidifier Programming Interface (HPI, Figure 7) and the flat cable (Figure 10) for connection between the HPI and the electronic board, as shown in Figure 20.

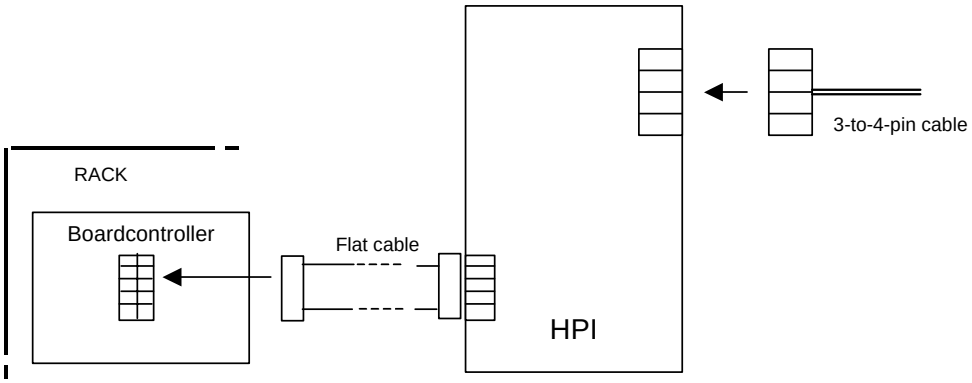

Figure 20

Pay the utmost attention to the direction of insertion of the flat cable connector into the board: the HPI adapter might fail if the direction is wrong. To avoid ambiguity, the flat communication cable is made so that, if the direction is wrong, it can be easily noticed that the connector stroke is hampered by the electrolytic condenser near the black 10-pole female terminal (see Figure 21 & Figure 22),

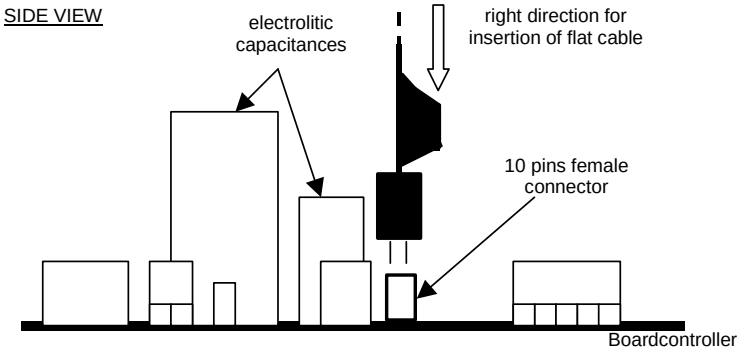

Figure 21

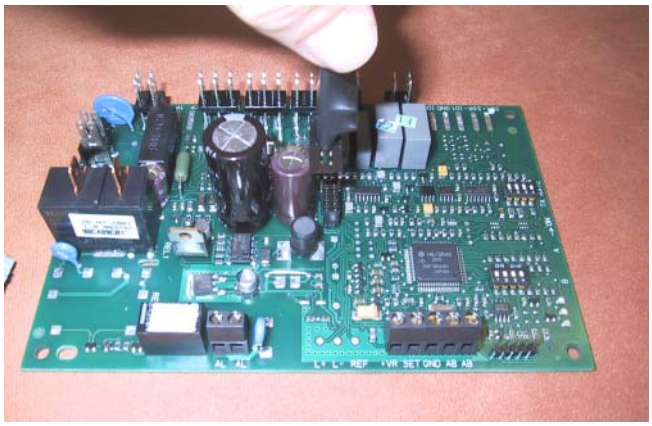

Figure 22

Precondition: since the board is installed on a finished humidifier, the controller programming can be performed only if the humidifier is "on".

Type C connection

The “Boardcontroller” controller of the humidifiers requiring this kind of connection do not have any default serial port. However, a small option card (code TACP485000) can be installed to allow serial connection by the green 3-pole connector on the controller.
As with example A, plug the 3-to-4-pole connector in the “Boardcontroller” controller.
Unlike Interface Boards, in this case the output connector has 3 poles. Care must be taken when plugging the 3-to-4-pole cable connector (see Figure 23, Figure 24, and Figure 25).

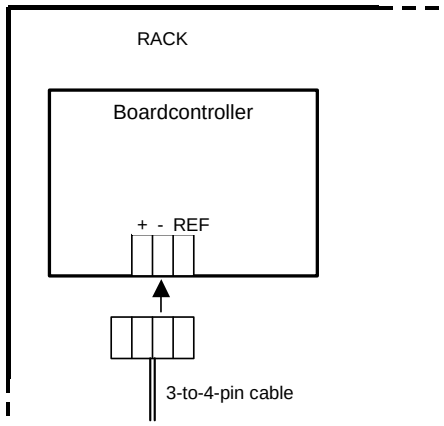

Figure 23

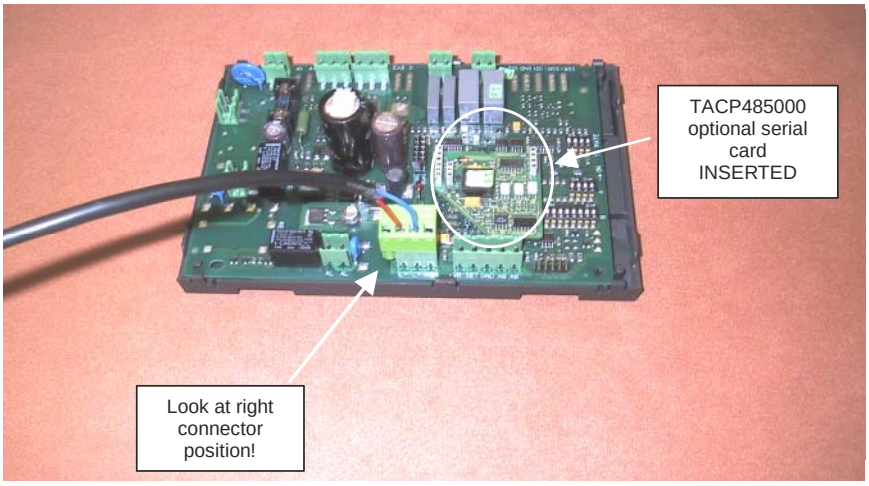

Figure 24

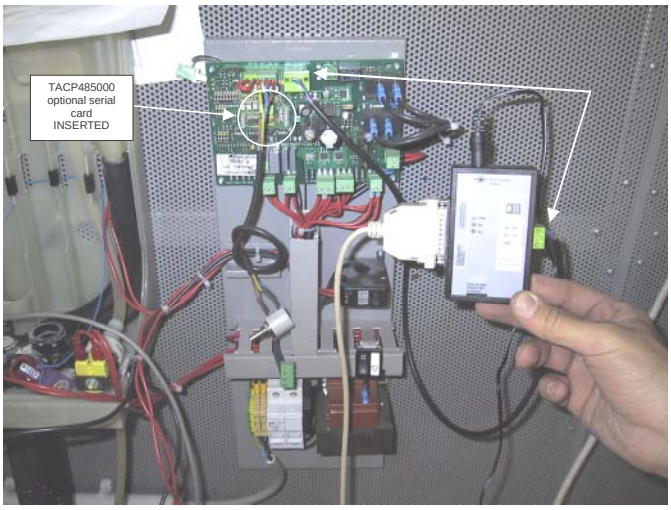

Figure 25

Precondition: since the board is installed on a finished humidifier, the controller programming can be performed only if the humidifier is "on".

Point 2. Off-board connections (“on the table”)

In this case, the programming concerns controllers not electrically connected to the humidifier. As a result, a special installation is required for connection to both the HPI and the 230VAC/24VAC transformer necessary to feed the system.

Type D connection

Humicontrols can be programmed directly, without using the Interface board.
In this case, it is necessary to use the HPI (Figure 7), the 230VAC/24VAC transformer for HPI feeding (Figure 8), and the flat cable for connection between the l’HPI and the controller “on the table” (Figure 10), as shown in Figure 26 and Figure 27.

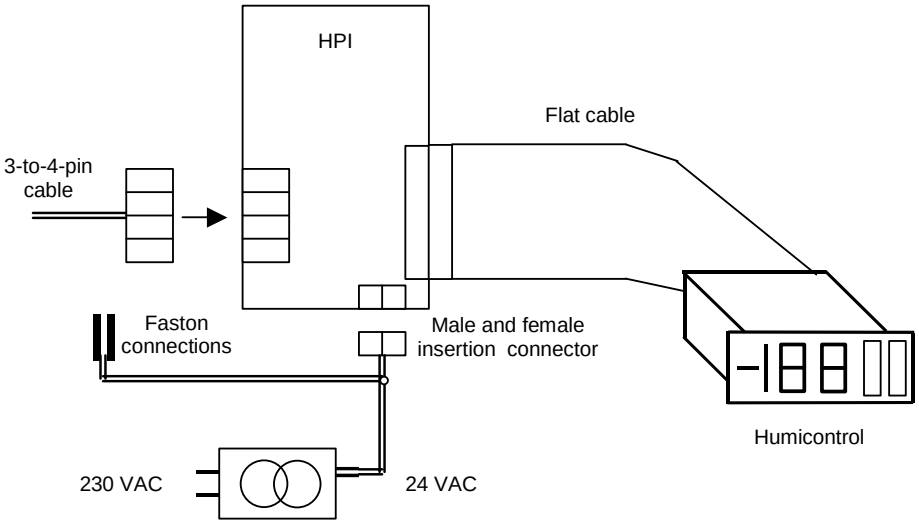

Figure 26

Figure 27

Type E connection

Any of “Boardcontroller” controllers can be programmed directly even if it is not connected to the humidifier.

In this case, you need:

- the HPI (Figure 7);
- the flat cable for connection between the HPI and Boardcontroller (Figure 10);
- the 230VAC/24VAC transformer (Figure 8) for feeding Boardcontroller controller in terminals G-G0 through the faston connector (Figure 28). Note: in this case, the HPI does not need to be fed at 24VAC.

Precondition: the board can be programmed only if it is powered on.

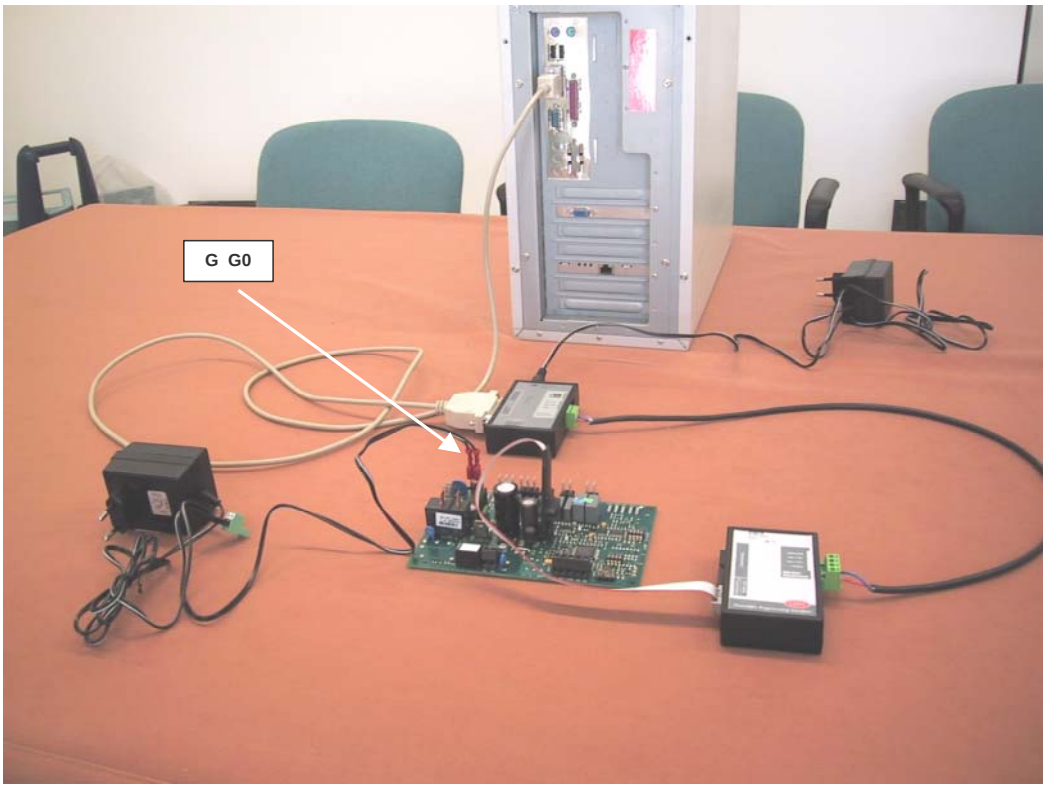

Figure 28

Type F connection

The “Boardcontroller” controller can be programmed directly even if it is not connected to the humidifier and the serial option card TACP485000 ***is not*** installed.

In this case, you need:

- the HPI (Figure 7);
- the flat cable for connection between the HPI and Boardcontroller (Figure 10);
- the 230VAC/24VAC transformer (Figure 8) for feeding Boardcontroller controller in terminals G-G0 through the plug-in connector (Figure 29). Note: in this case, the HPI does not need to be fed at 24VAC.

Precondition: the board can be programmed only if it is powered.

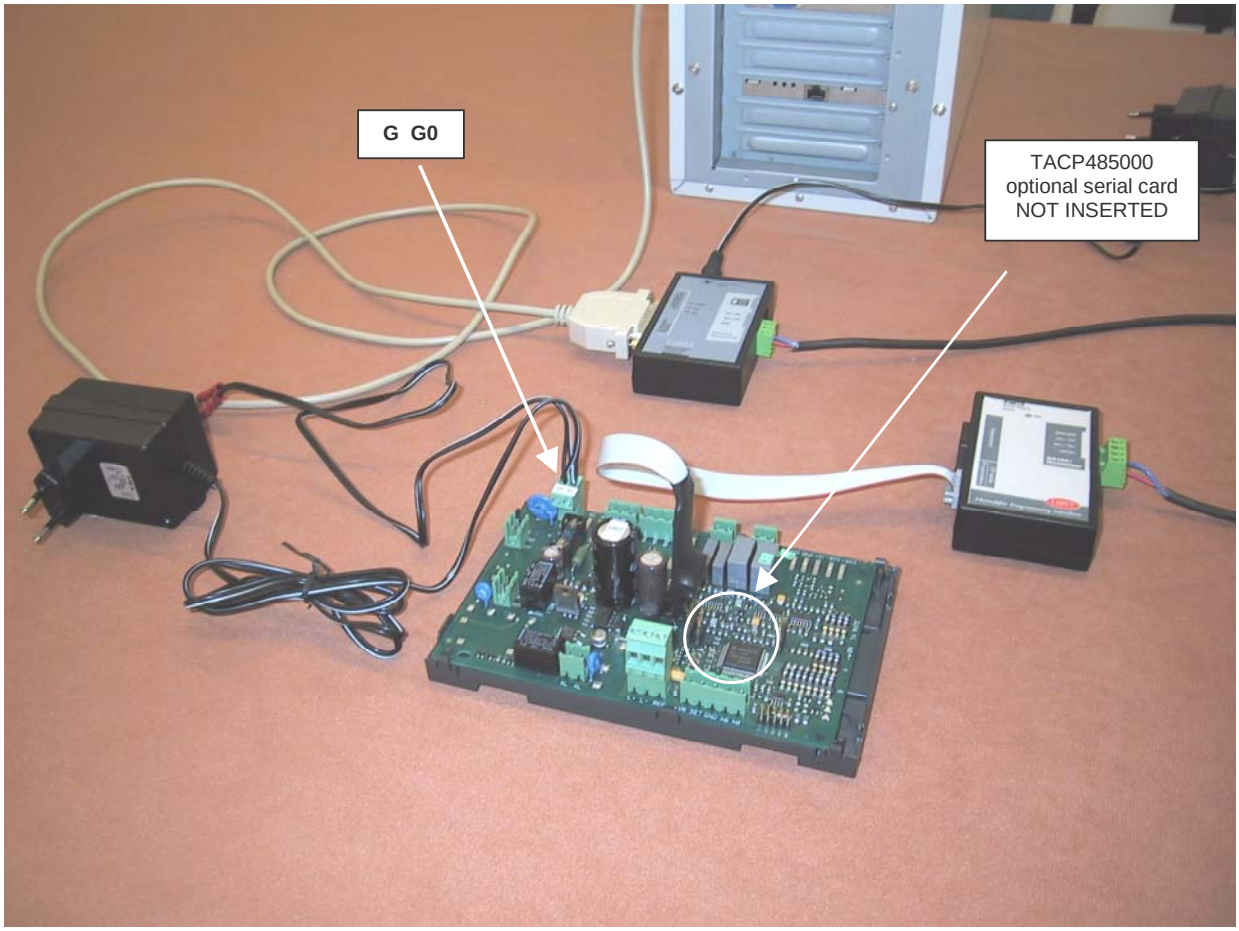

Figure 29

Type G connection

The “Boardcontroller” controller can be programmed directly even if it is not connected to the humidifier and the serial option card TACP485000 ***is*** installed.

In this case, you need the 230VAC/24VAC transformer (Figure 8) for feeding “Boardcontroller” controller in terminals G-G0 through the plug-in connector (Figure 30).

Precondition: the board can be programmed only if it is powered.

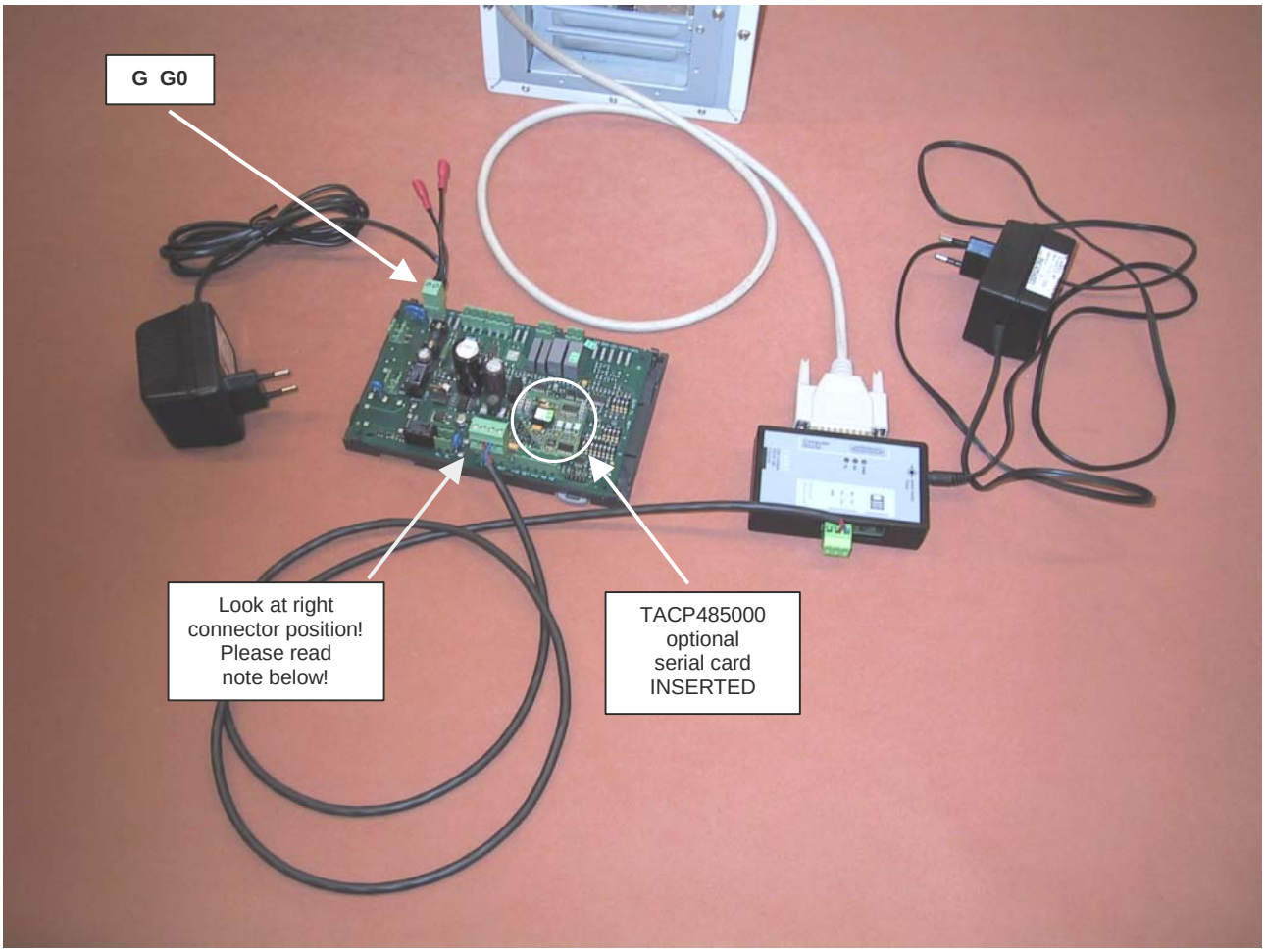

Figure 30

Unlike Interface Boards, in this case the output connector has 3 poles. Care must be taken when plugging the 3-to-4-pole cable connector (see Figure 23 e Figure 24).

Installing the Software

Please, refer to the “Readme.txt” file in the CD-ROM.

Changing the default serial port (COM1)

If a serial port other than default COM1 is required, proceed as described below (after installing the software).

Find folder Carel \ humiSet \ data \ nodes \ node0 from folder "Programs";
Identify file "driver.ini" and open it by using a text editor (e.g. NOTEPAD for Windows):

The text below will be displayed:

```
[config]
MaxRetry485=3
Line1=1,4,485
Line2=
Line3=
Line4=
Line5=
Line6=
```

The third line

`Line1=`**`1`**`,4,485`

contains the number identifying COM1 (figure 1 in bold).

To select COM2 you just have to modify the line as shown below:

`Line1=`**`2`**`,4,485`

Make sure you have not changed anything else, then click on exit to leave. You will be asked whether you want to save the changes. Answer "yes". If ***humiSet*** was already active, it might be possible to go on using the system without restarting it. Should problems occur, restart ***humiSet***.

Using the software

Programming with *humiSet*

The precondition for programming to start is prior connection of all hardware devices, as indicated in the previous paragraphs.

Now the controllers can be programmed.

Once the installation of the software is completed, the icon below will be displayed.

- Click twice on it to start running ***humiSet*** software.

  A similar, smaller icon will be displayed in the bottom right-hand corner of the application bar:

  Internet Explorer will be triggered, and the following home page will be displayed (Figure 31):

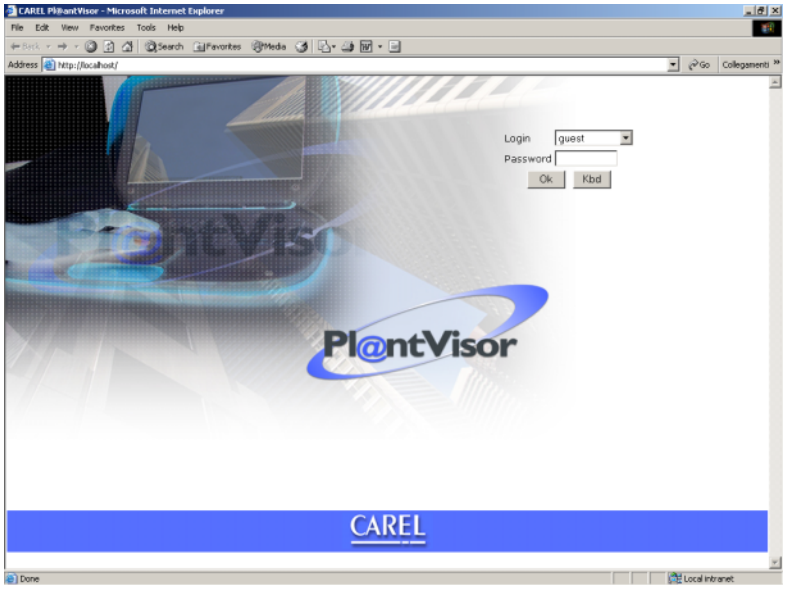

Figure 31

Press “OK”.

- In case of trouble with any connection or with the feeding, the application will display the following error page (Figure 32)

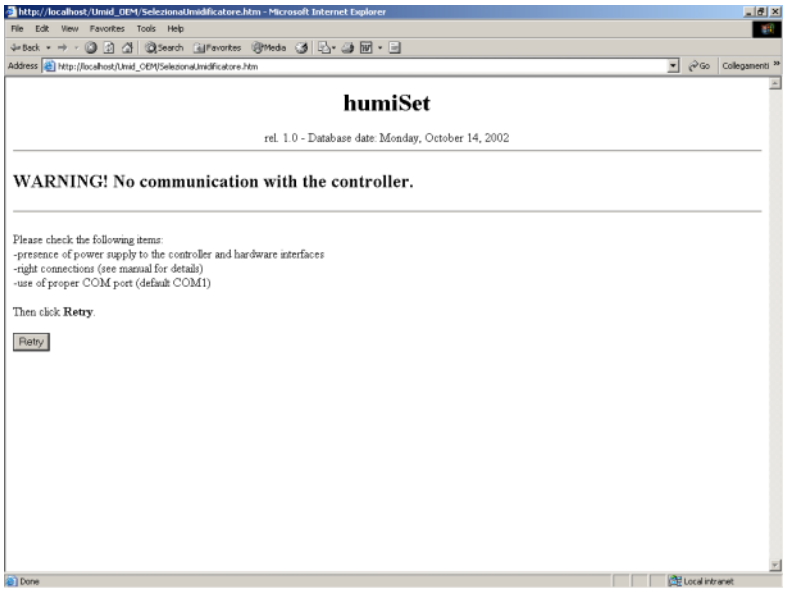

Figure 32

In this case, check both connections and feeding, then press “Retry”.

- If the communication is active, the following page will be displayed (Figure 33):

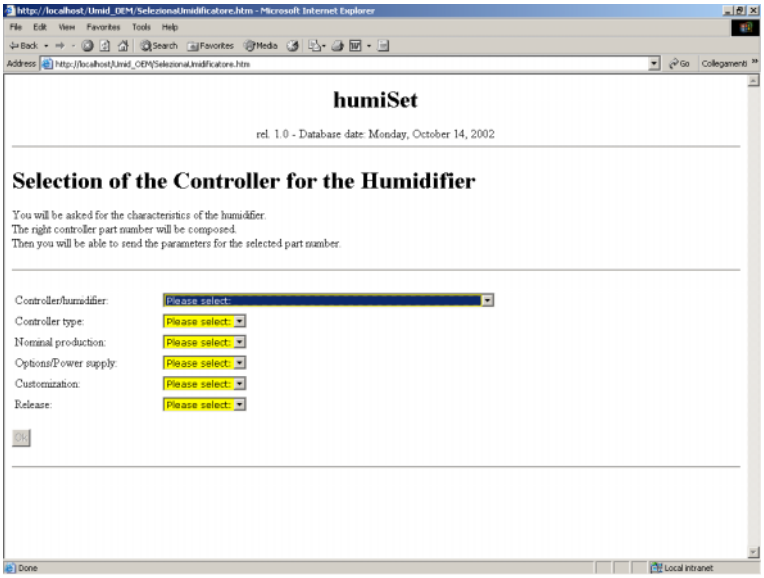

Figure 33

1-Draw the mouse on the first coloured bar “Controller/humidifier”, and press the left button of the mouse: a list of options will be displayed. Here choose the controller category depending on the humidifier to which the controller is associated.
2-After making the first choice, select “Controller type”. Choose according to the type of controller installed on the humidifier. Refer to tables 1 & 2, and to Figure 14, Figure 15 and Figure 16.
3-The third option concerns the rated production (kg/h of the humidifier where the controller must be installed).
4-The fourth option is about the Voltage of the humidifier where the controller must be installed, or its constructive options.
5-The fifth option concerns the possible customised variations.
6-The sixth option is about possible controller versions required for particular humidifier versions. This option is provided for future expansions; at present, there is no particular version.

The selection of the controller associated with the humidifier will be over when no menu asks “Please select:” any more. Each message “Please select:” means an item that has not been selected yet.
The selection is organised in such a way that, once an option is selected, the following ones will give only options consistent with the previously selected ones.

However, it is the operator's responsibility to check the consistency of the controller programming selected and the type of humidifier where the controller must be installed. Be careful!

- After selecting the last field, a Pop Up Window will display the code of the set of parameters to apply during the programming. It is the same code that must be used to request the programmed spare controller. Press key OK in the Pop Window (Figure 34). Then, the key “Ok” in the bottom left-hand corner will turn active. Press “Ok” to continue. The system will check the consistency of the choices made with the controller firmware.

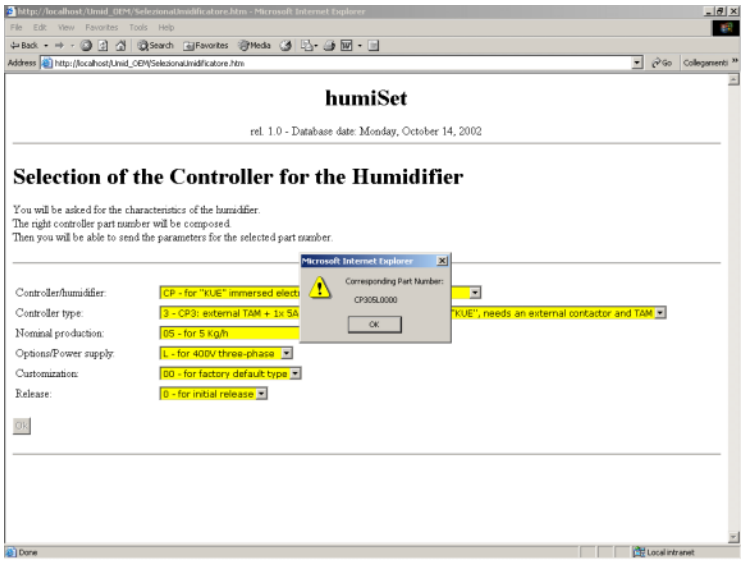

Figure 34

- If the consistency is confirmed, then a window indicating that everything is ready for parameter downloading will be displayed (Figure 35):

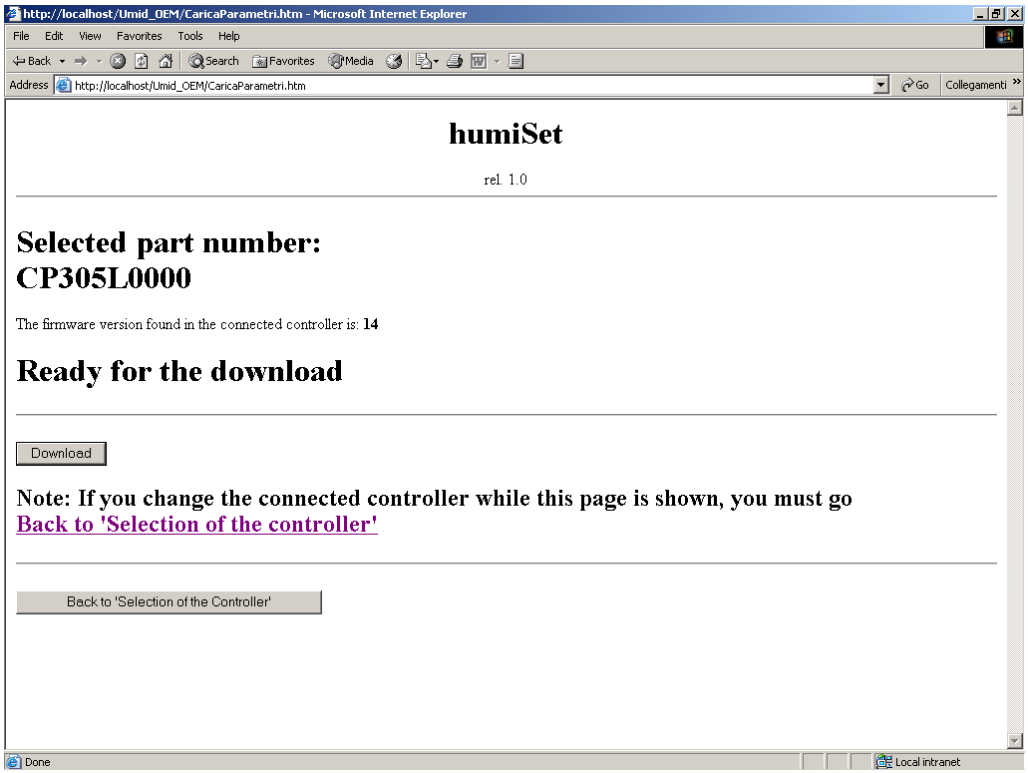

Figure 35

- If the consistency is not confirmed, then the option made does not suit the controller connected: for instance, a humidifier like "***humiSteam***" type H is selected, and the firmware for the management of humidifier "KUE*******" is stored, the following error page will be displayed (Figure 36):

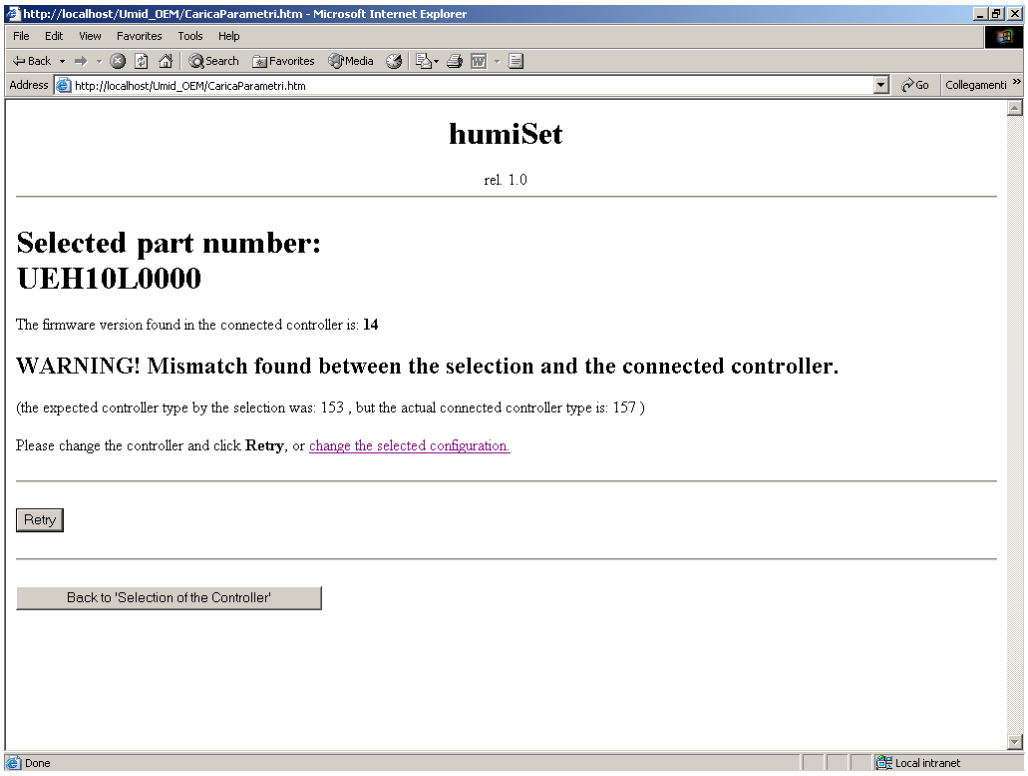

Figure 36

- If ***humiSet*** does not contain the required set of parameters, the following error page will be displayed (Figure 37):

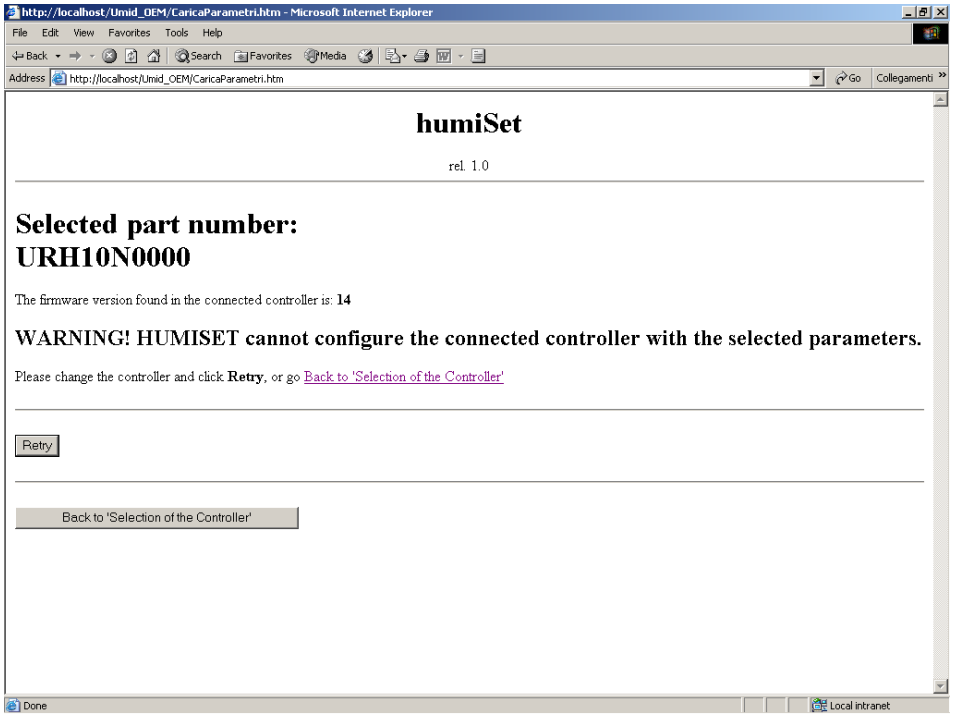

Figure 37

In this case,
-The connected controller might not suit the option selected; check controller and replace it with a suitable one; refer to tables 1 & 2 and to Figure 14, Figure 15 and Figure 16; or:
-The firmware in the controller might be more recent than the database in ***humiSet***; In this case, it is possible to find the updated database for the new versions of the controller firmware in **http://ksa.carel.com** as shown in the of Figure 33, or contact directly Carel. Anyway, we suggest checking carefully the previous points.

- Conversely, if the communication between ***humiSet*** and the controller is broken, the following page will be displayed (Figure 38):

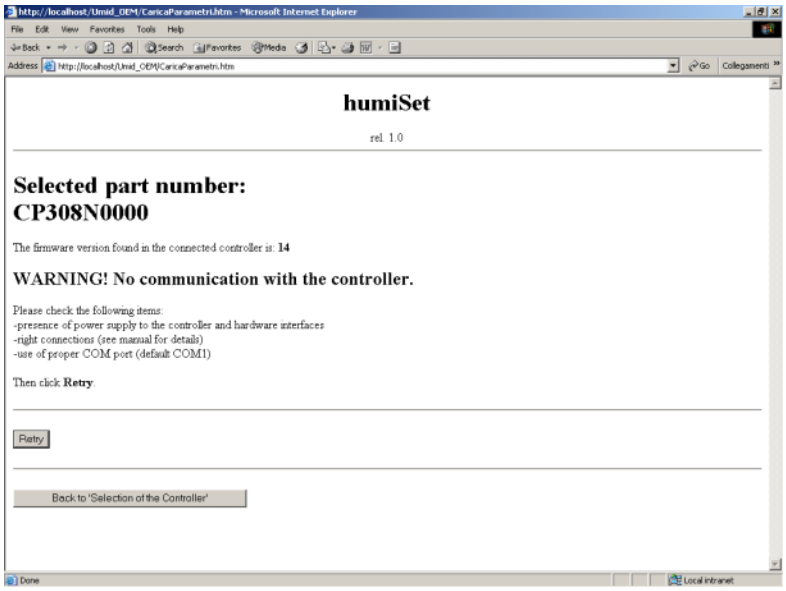

Figure 38

Once page “Ready for the download” (Figure 35) is displayed, press “Download” to continue. Great attention must be given to the fact that the controller must not be replaced while this page is displayed, either before or after pressing Download. Otherwise, the programming might be affected by errors that are not detected by ***humiSet***. If the controller has to be replaced before pressing “Download”, you must necessarily press “Back to ‘Selection of the Controller’”.

- If the programming is performed correctly, the following page will be displayed (Figure 39):

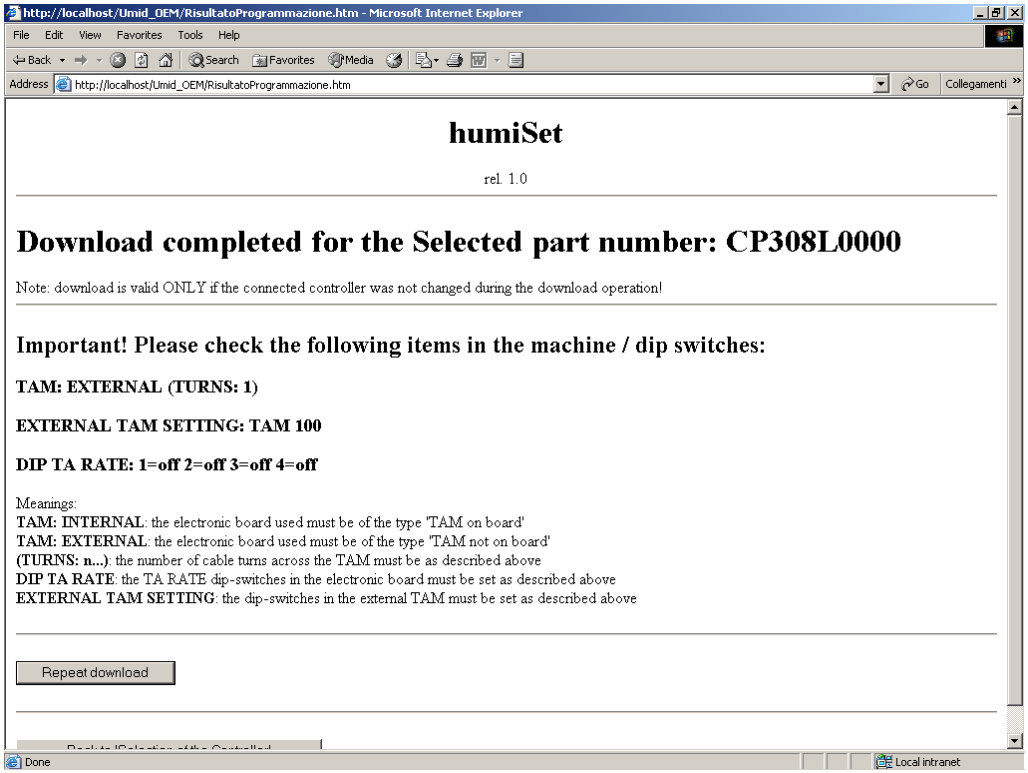

Figure 39

Certain data for completion of the operations are provided for certain types of controllers. Check them for correctness on the humidifier.

- In case of trouble during the writing of certain parameters, the page below will be displayed (Figure 40):

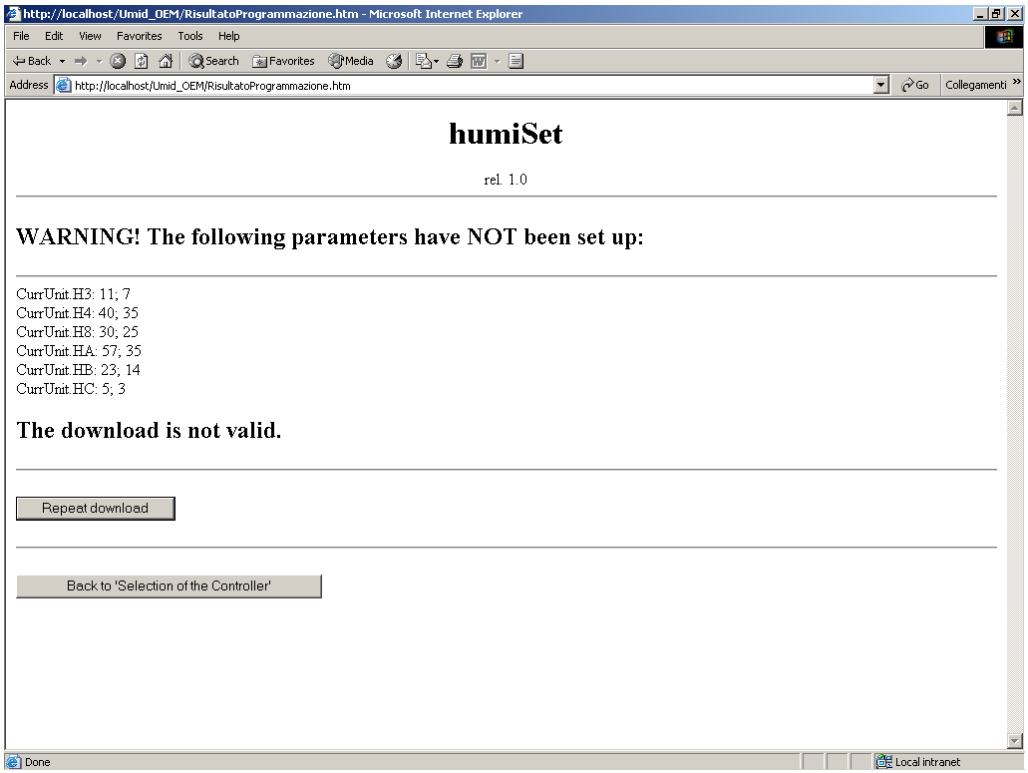

Figure 40

If the trouble persists at the following attempt, then the controller might be faulty. Replace it as necessary.
Note: "Boardcontroller" controllers with firmware release 14 or earlier are not programmable while they are showing the firmware release (at power-on, flashes of yellow and red led). Humicontrol controllers are not programmable during the first 5 seconds from power-on (until "---" is shown). If Figure 40, appears, retry only after these events.

- Likewise, the following page might be displayed (Figure 41):

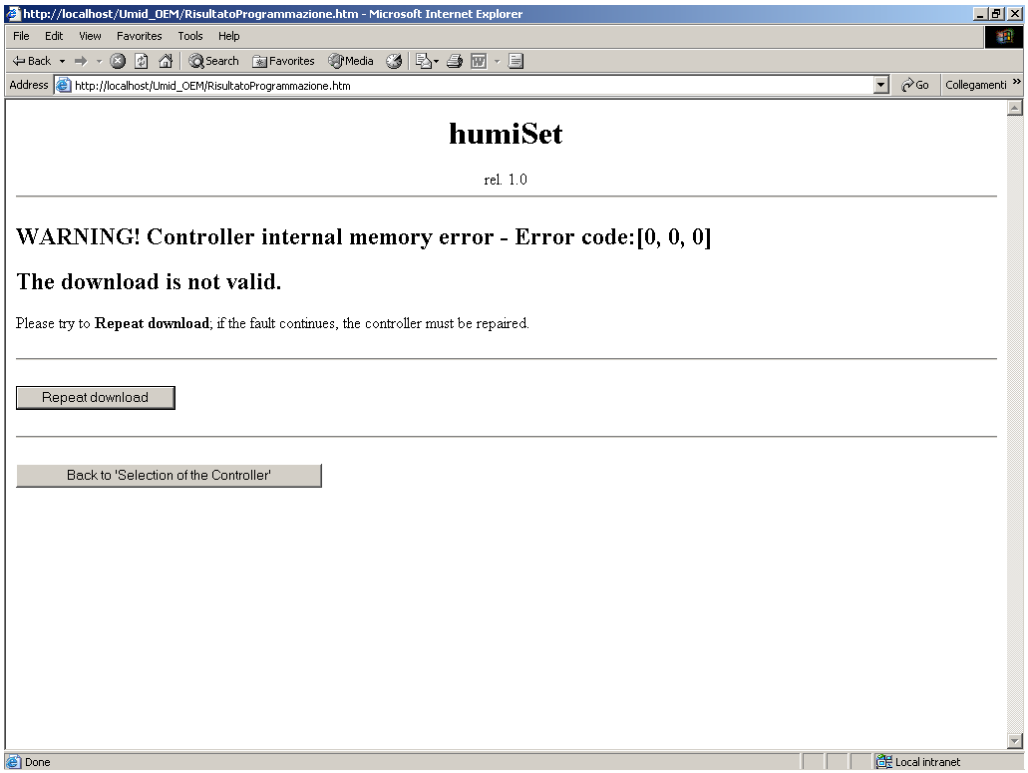

Figure 41

If the trouble persists at the following attempt, then the controller might be faulty. Replace it as necessary.

- If, after completion of the programming, the page below is displayed, check connections and repeat the programming (Figure 42):

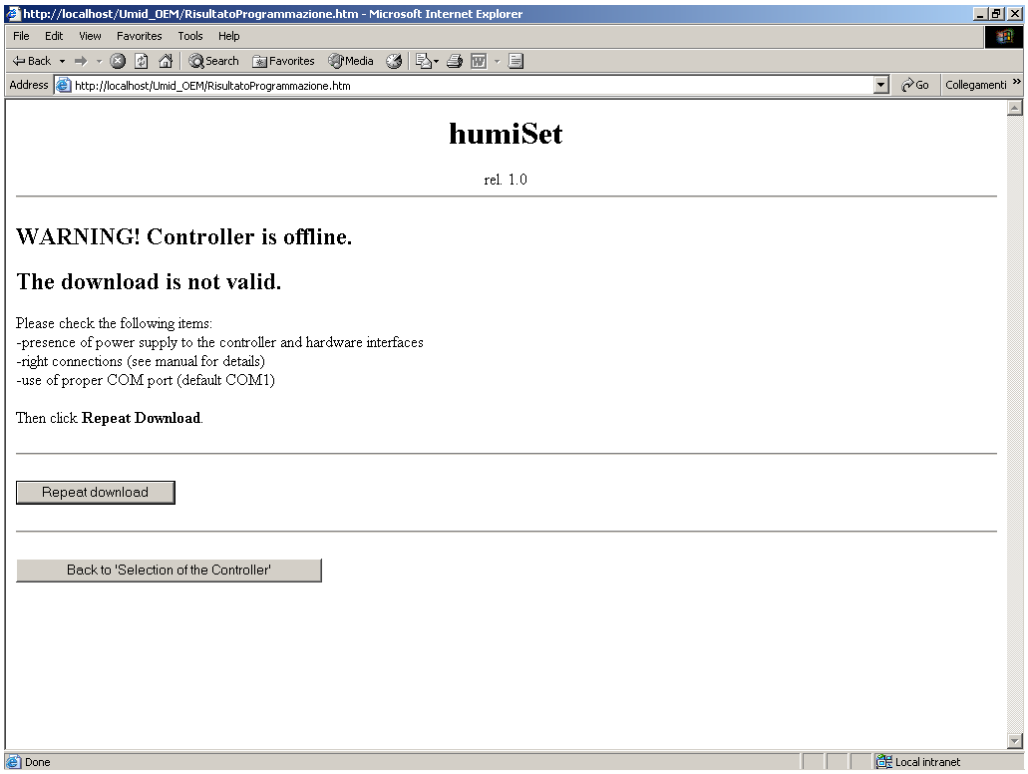

Figure 42

- The following page might be displayed during utilization of ***humiSet*** (Figure 43):

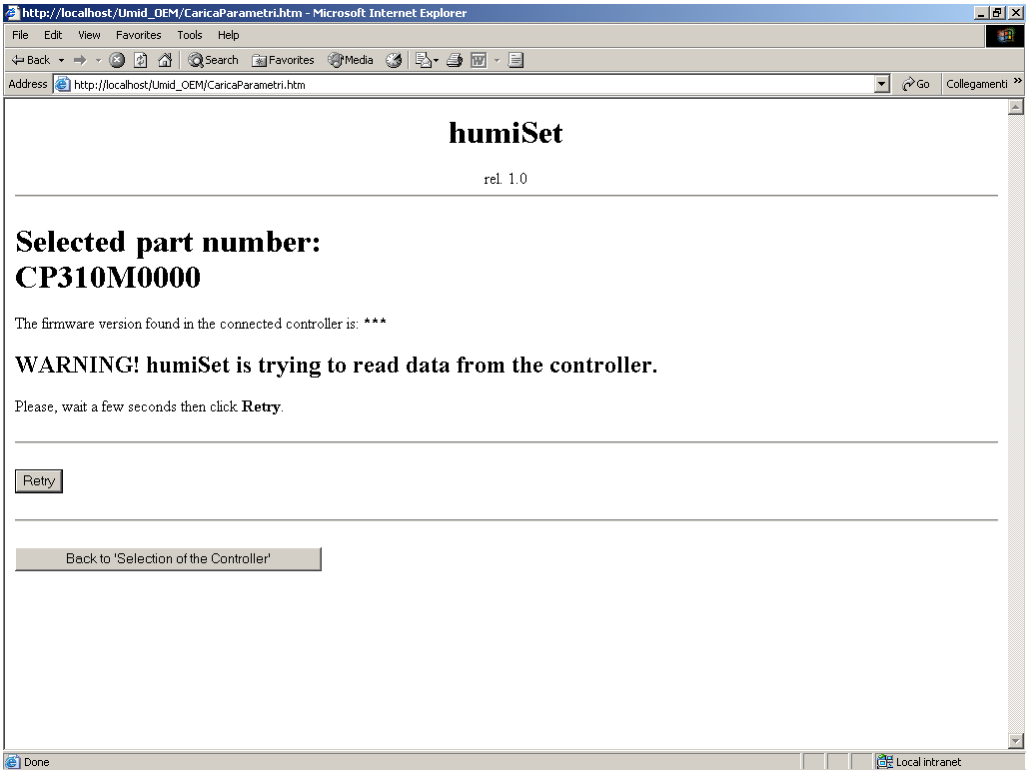

Figure 43

Press “Retry” to continue.

So, the points above listed the steps to follow for programming the parameters of controllers. Now, they are ready and can be used to manage the humidifier appropriately.

Stopping *humiSet*

On completion of the controller programming, Internet Explorer can be exited.
However, it is worth noting that the icon below is still in the application bar:

As long as the icon is there, just trigger Internet Explorer and enter http://localhost + ENTER to restart ***humiSet***.

When ***humiSet*** is exited, we suggest closing the icon as well. To do this, draw the pointer arrow on the icon in the application bar

then:

- Press the right button of the mouse
- Select “Close”

Note: humiSet cannot remain active non-stop for more than 20 hours.
If this limit is exceeded, the page below might be displayed (Figure 44):

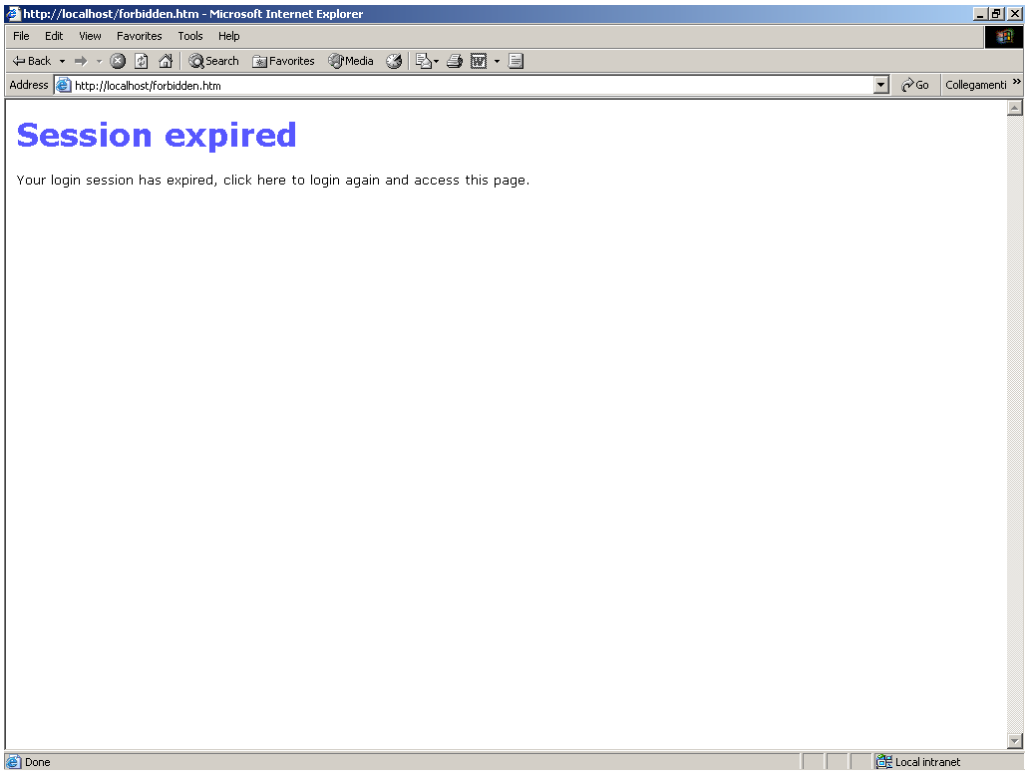

Figure 44

Just stop ***humiSet*** and start it up again.

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