# AGRITHERM40WIN Vers.1.04

USER MANUAL

825B076H

SGM LEKTRA

*applied solutions for the applications*

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## GENERAL DESCRIPTION

The PC program Agritherm40Win colloquise by means of a PC serial door RS232 and an interface serial RS232/485 modul with the MUX concentration units. The MUX units feed the multipoint thermometric probes which measure the temperature of the individual points and transfer the read value into a digital signal transmitted by RS485.
The PC program **AGRITHERM40WIN**, in order to identify the location of the single value of temperature reading, use the following logic address:

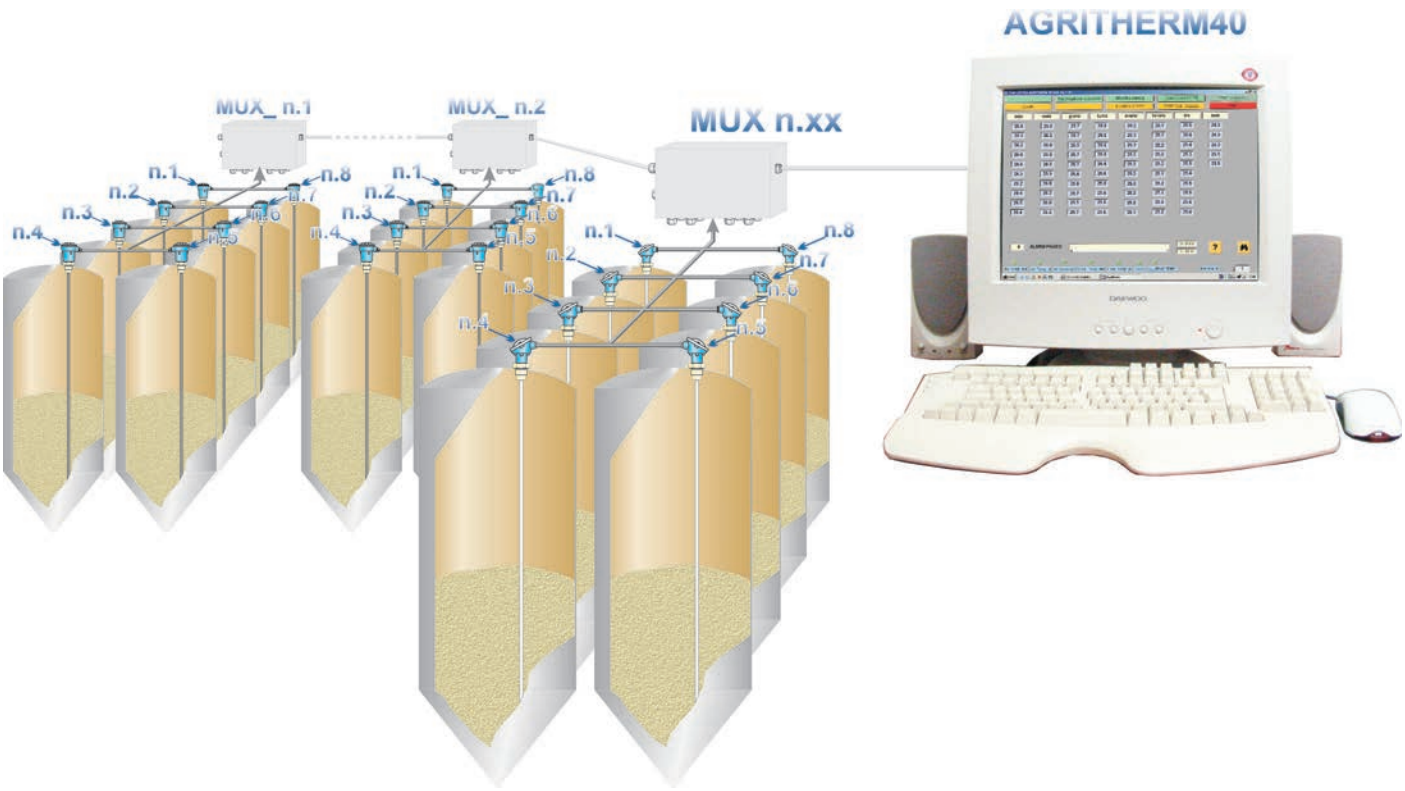
a) each **MUX**_ concentrator has an suo identification number **UID**, olso, on the same serial line, can not be two or more **MUX**_ with the same identification number **UID;**
b) each **MUX**_ concentrator has **8** channels numbered from **1** to **8** and, for this reason, each probe is identified by the **channel number** of the **MUX**_ to which is electrically connected;
c) measuring points of the probe are also numbered, the sensor **n.1** is the nearest to the terminal block of electricl connexions of the probe.

The temperature sensing is achieved through:

- sensors **PT100** (default), **NI100** o **NI10** (specify in order) for probes type **TH**;
- digital sensors for probes type **TT**.

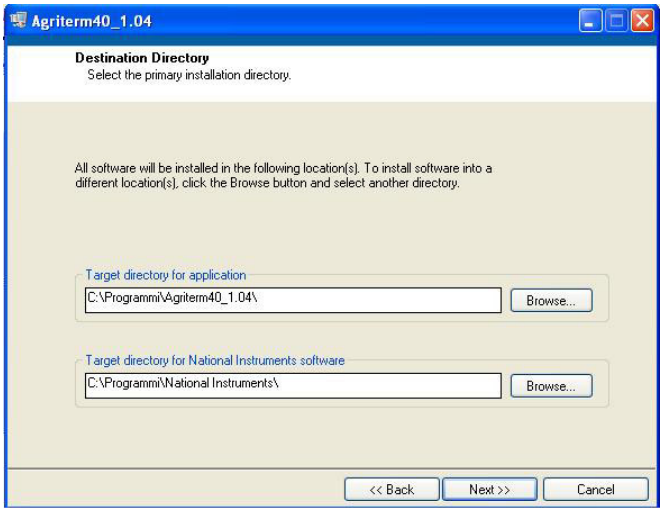
Each model of **MUX**_ concentrator has several characteristics:

- mod. **MUX**; max **n.8** probes type **TT** with max. **n.250** measuring points.
- mod. **MUXA**; max **n.8** probes type **TH** with max. **n.4** measuring points.
- mod. **MUXC**; max **n.8** probes type **TH** with max. **n.8** measuring points.
- mod. **MUXD**; max **n.8** probes type **TH** with max. **n.12** measuring points.

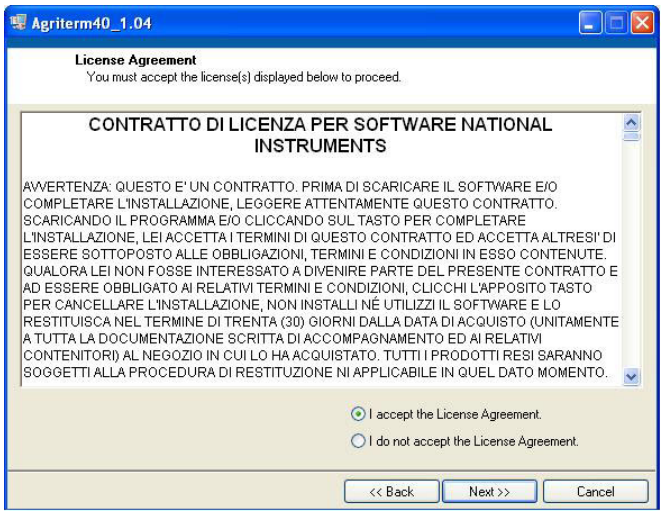


## Installing the Program

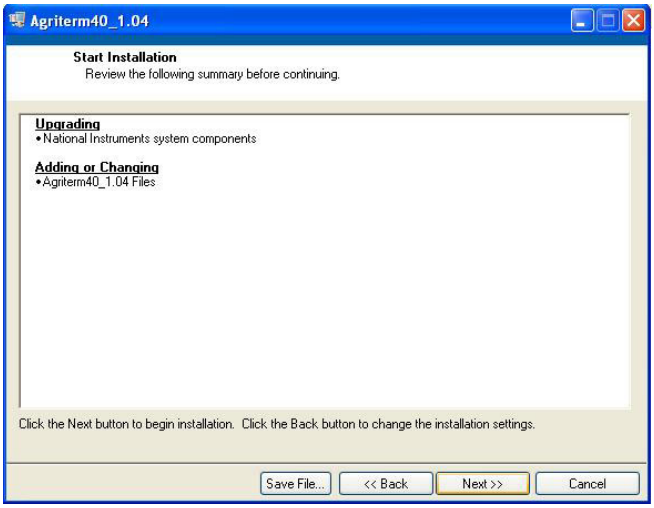
In most cases, the Agritherm 40 Win program is installed directly by S.G.M. LEKTRA, otherwise the procedure indicated below should be followed:
- insert the CD SGM LEKTRA in the drive, select the folder CVIDISTKIT.AGRITHERM40_1.04 , select the folder VOLUME and click on SETUP.
"**Agritherm setup**" asked to confirm the destination folder of the program **Agritherm40Win**. To change the destination



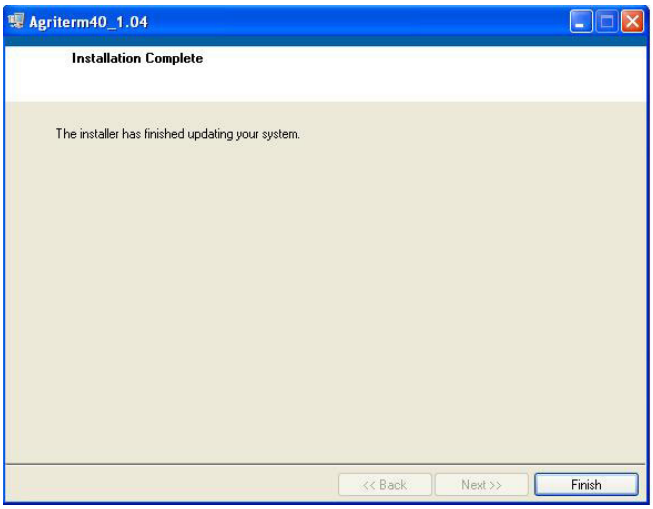

folder select the "**Browse**" button.
The button "**Cancel**" will cancel the installation process.
The button "**Back**" will come back in the process.
The button "**Next >**" will go on in the process.




"**Agritherm setup**" asked to agree the licence contract before to follow in the installation process.
The button "**Cancel**" will cancel the installation process.
The button "**Back**" will come back in the process.
The button "**Next >**" will go on in the process.
"**Agritherm setup**" require to confirm with "next" the installation files choosen.




The button "**Finish**" will close the installation process and will be necessary to restart the computer.




For complete installation, copy the contents of the folder Backup present into installation CD and insert the files into C:\PROGRAMMI\AGRITHERM40_104.
The operation make valid the system configuration.
If you want to launch automatically the program at Windows® starting it is sufficient to create a connexion into "**automatic startup"** folder.
For the normal launch of the program click on the ***start button*** and select the section Agritherm from program menu, it will appear the main screen as shown in the fig.1 on the next page.
To remove the program Agritherm40 from the PC it is necessary:
a) to access to "**Pannello di controllo**".
b) to open "**Installazione applicazioni**"
c) on mode "**Cambia/Rimuovi programmi**" select Agritherm icon and by "Rimuovi" button to start the uninstall program.

## OPERATING FUNCTIONS

When **AGRITHERM40WIN** program is running the main page (fig.1) shown the following informations:

1) on the head of each probe is shown the own description with max 7 alphanumeric characters;
2) under the description of each probe are shown, into single boxes, the measurements points; the point n.1 is on the top;
3) **PAGINE ALLARMI** row shows the number of video pages that have sensors in alarm;
4) points on **Max.Temp.** alarm conditions are highlighted with the box outlines **RED;**
5) points on **Min.Temp.** alarm conditions are highlighted with the box outlines **GREEN;**
6) points not read due to serial communication error are highlighted with the box outlines **YELLOW** and with the word "**EEEE**";
7) the window on the left of **ALARM PAGES** shown the number of the probe properly interrogated;
8) the indicator **Relè Max.1** indicates with colour red that there is or there was at least one point of measurement with an alarm **of Max.Temp.** The associated relay, **R1,** remain in alarm conditions, relay de-energized with open contact, even after lowering the temperature value detected, it is necessary to click on button "**TACITAZIONE ALLARMI**" to restore the condition of non-alarm, relay energized with closed contact;

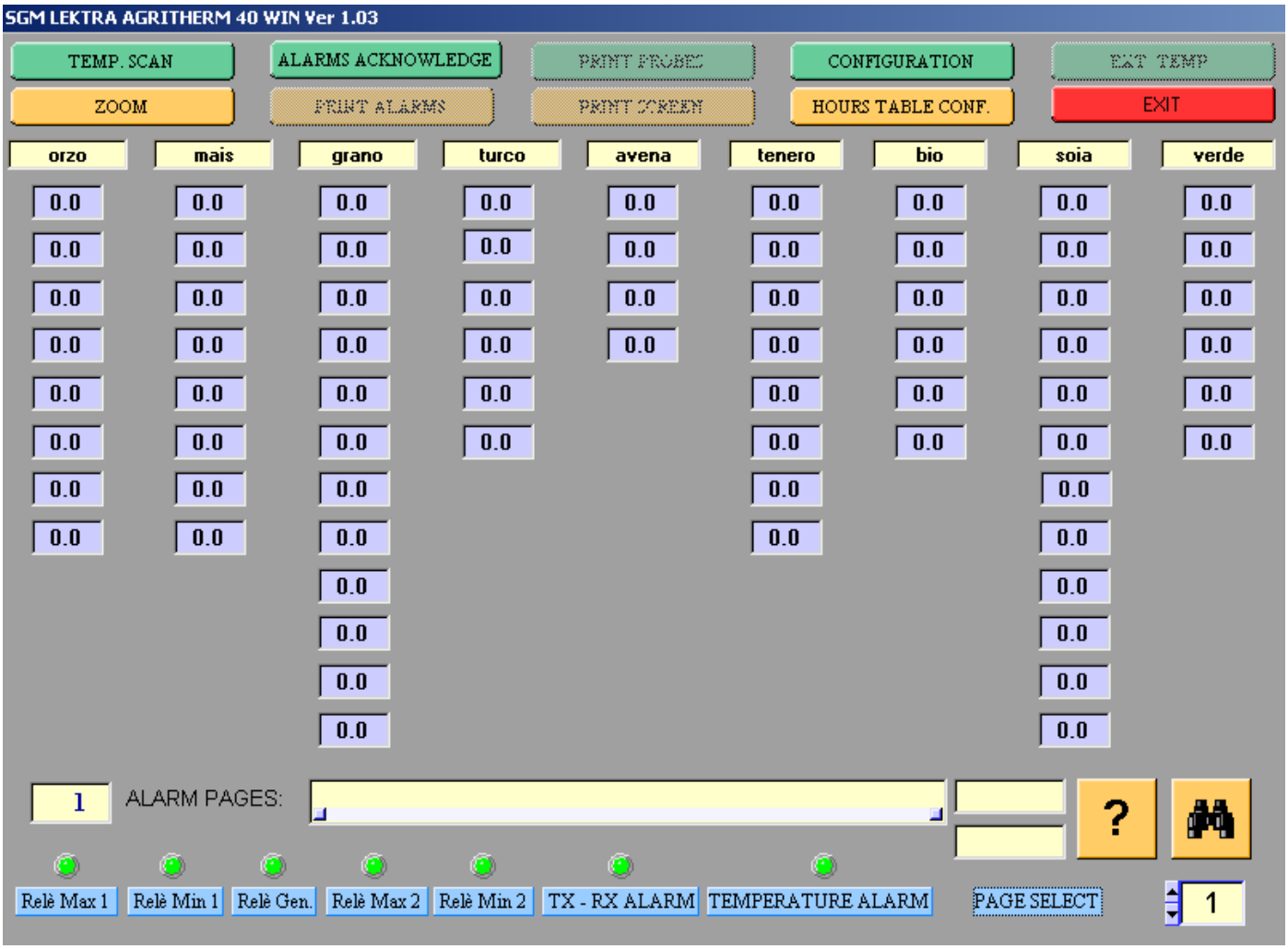



Fig.1

**9**) the indicator **Relè Min.1** indicates with colour red that there is, or there was, at least one point of measurement with an alarm **of Min.Temp.** The associated relay, **R2,** remain in alarm conditions, relay de-energized with open contact, even after lowering the temperature value detected, it is necessary to click on button "**TACITAZIONE ALLARMI**" to restore the condition of non-alarm, relay energized with closed contact;

**10**) the indicator **All. Generale** indicates with colour red that there is, or there was, at least one point of measurement with an alarm **of Min. or Max. Temp** or **TX/RX** due to communication fault. The associated relay, **R3**, remain in alarm conditions, relay de-energized with open contact, even after lowering the temperature value detected, it is necessary to click on button, "**TACITAZIONE ALLARMI**" to restore the condition of non-alarm, relay energized with closed contact;

**11**) the indicator **Relè Max.2** indicates with colour red that there is at least one point of measurement above the threshold of **Max.Temp.**. The associated relay, **R4**,remain in alarm conditions, relay de-energized with open contact, until the temperature detected value exceed the value set; when the temperature detected value will be below the value set the relay will return automatically in a not alarm condition, relay energized with closed contact;

**12**) the indicator **Relè Min.2** indicates with colour red that there is at least one point of measurement above the threshold of **Min.Temp**.The associated relay, **R5**, remain in alarm conditions, relay de-energized with open contact, until the temperature detected value exceed the value set; when the temperature detected value will be below the value set the relay will return automatically in a not alarm condition, relay energized with closed contact;

**13**) the indicator **TX/RX** indicates with colour red that there is , or there was, at least one point of measurement with a serial communication error between MUX and AGRITHERM40;

**14**) the indicator **ALLARME TEMP.** indicates with colour red that there is at least one point of measurement above the threshold of **Min.Temp.** or **Max.Temp;**

**15**) the windows on the right of **ALARM PAGES** show the date and the time;

**16**) in the window **PAGINA N.**, where it is normally shown the number of the page on the screen, it is possible to select another page
to see another probe.

## OPERATING FUNCTIONS

The connector pins of the relay card are as follow:

**a**) Relay Max.1> pin 2 C , pin 3 N.C.. , pin 1 N.O.

**b**) Relay Min.1> pin 5 C , pin 6 N.C.. , pin 4 N.O.

**c**) Relay Gen.> pin 8 C , pin 9 N.C.. , pin 7 N.O.

**d**) Relay Max.2 (impulse) > pin 21 C , pin 22 N.C.. , pin 20 N.O.

**e**) Relay Min.2 (impulse) > pin 24 N.C.. , pin 23 N.O.

## NAVIGATION OF VIDEO PAGES

To select the desired function, the easiest way is to use the system mouse or other pointer control devices even if the operation of selection
can be made using the tab key.
The selected function is obscured in the outline.

## USING FUNCTION KEYS AND WINDOWS

**SCROLL-BAR:** 


These types of window function have on the left two arrows, one upward (increasing) and the other down (decreasing). The box shows the data, indicated with a decimal number, previously set. This number can be changed with the mouse or the keyboard.

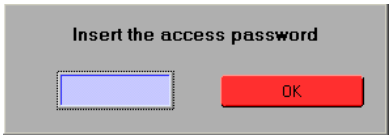
1) With the mouse:
   a) position the pointer over one of the two arrows, to increase or to decrease the data, and click the left button;
   b) position the pointer on the box data, click two time with the left button, select with the pointer the number from the vertical bar that appears and click with the left button to confirm the selection;
   c) position the pointer on the box data, click with the left button and enter the number directly from the keyboard.
2) With the keyboard:
   a) select the window with "**tab**", if you highlight the box, it is possible:
      i) increase or decrease the value with the keyboard arrows up and down;
      ii) enter the number directly from the keyboard;
   b) select the window with "**tab**", if you highlight the box, it is possible:
      i) press the bar "***spazio***" to open the window there they are shown the available options, select il the value with the keyboard arrows up and down and confirm with the button "**invio**";
      ii) increase or decrease the value with the keyboard arrows up and down;
      iii) enter the number directly from the keyboard.

**SWITCH BUTTONS:**


The switch buttons are used to set a specific function in the required manner, which can be modified in the following ways:

1) by positioning the mouse pointer on how the required function and click with the left button;
2) with the keyboard by clicking on button "**tab**" and using the keyboard arrows up and down to position the switch on the required function.

**INPUT WINDOWS:**




These windows are used to introduce from keyboard numeric parameters or alphanumeric descriptions. At the end of the writing within these windows you MUST press "**enter**" to confirm the data and to make effective the placement.

## MINIMUM PC REQUIREMENTS

**Minimum PC requirements**

Processor 80486, o similar with mathematic coprocessor.
1 CD ROM
1 Monitor colour VGA.
1 Hard disk with minimum 10 Mbytes free.(more if it is necessary a historic data storage)
1 Mouse.
1 Free serial door (COM1/COM 2) for the RS-485 bus and MUX unit connexion
1 80 column b/w or colour printer

**PC operating system**

Microsoft Windows® 95, 98, 98SE, ME, 2000, XP
The program is not designed for use in MS DOS environments or multi-user networks of any kind.

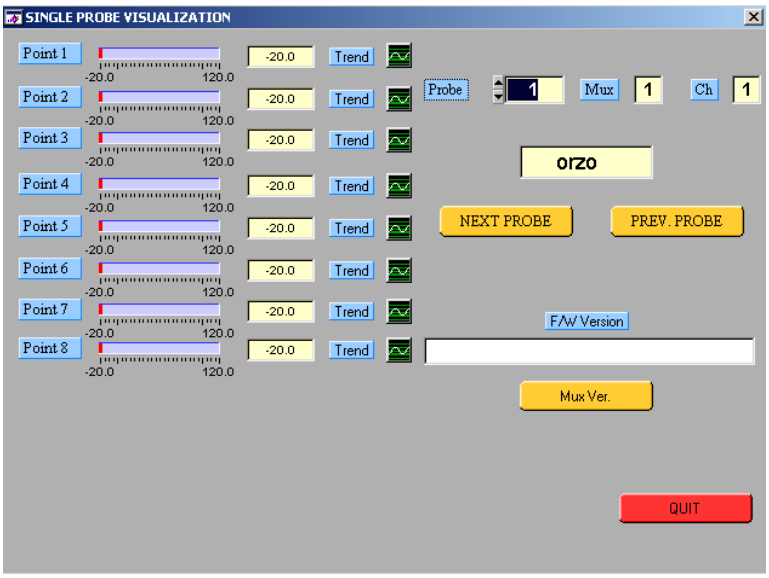
## Program files

Agritherm40Win program is made up of the following files:
Agriterm.exe, panel.uir, config.log, tab_conf.log, minmax.log, parms.dat, temp.dat

## Main screen buttons description

**1 )** ZOOM **:**

Show in real time the measurement points of the selected probe. This is only a diagnostic function which it is normally used during inspections to verify the correct general functioning of the system by **SGM LEKTRA** technical staff. Selecting this function it will open a window as shown on the following figure:

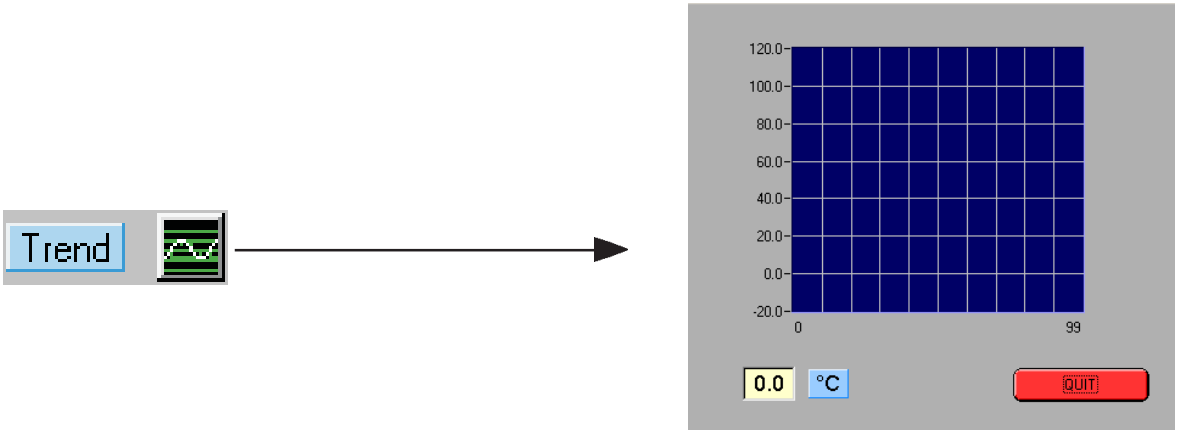



**1.1) NEXT PROBE / PREVIOUS PROBE:**
The buttons are used to see the next or the previous probe.

**1.2) Probe / Mux / Chanel:**
In these windows it is possible enter directly the required probe address.

**1.3) F/W Version:**
Identifies the scanned MUX firmware version.

**1.4) Trend:**
Show the reading point with graphic representation, as shown on the following figure.




**1.5) END**
Escape

**2 )** ALARMS ACKNOWLEDGE **:**

By the temperature scanning, if alarms have been detected, it will have the static commutation of the output relays, **Relay Max.1** , **Relay Min.1**, and of the video signal **TX/RX.** The **TACITAZIONE ALLARMI** turn off all signals.

**3 )** PRINT PROBES **:**

Prints all the probes detected during the last scanning.

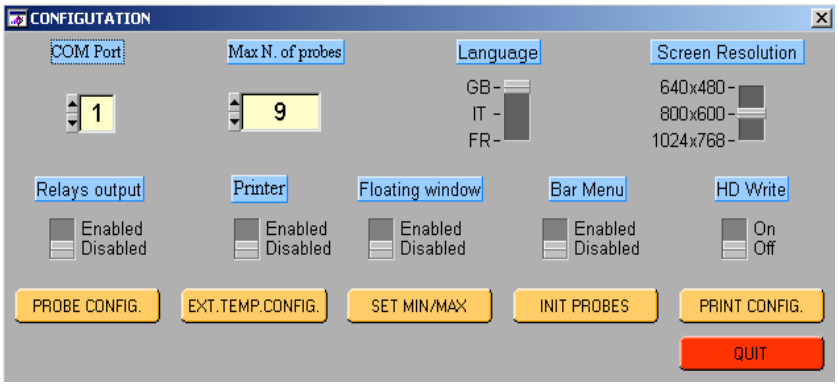
**4)** PRINT SCREEN **:**

Prints the video screen currently displayed.

**5)** CONFIGURATION **:**

Provides access to the program parameters setup and plant configuration.
*It should only be used when strictly necessary by qualified technicians experienced on functions and parameters setup.*
Settings, according to plant specifications supplied by client, are made at the SGM LEKTRA laboratories, in order to facilitate the use of the system AGRITHERM40WIN.
For the access to configuration it is necessary to use a password, see the following figure.
Unauthorized staff must not know the password because into this level it is possible to modify wrongly all the system parameters, compromising the correct operation. We recommend you to make a copy, in another PC directory or in another files storage device, of the following files: **Parms.dat**, **Temp.dat**, **Config.log**, **Tab_conf.log,** which are present in the installation directory of program (Agritherm40win).


To enter the password, digit **thermo** and then click **OK** to confirm, the following screen will appear:




**5.1) COM port:**
Selects the serial port COM1/COM2 through which the program communicate with the **MUX** units via the interface device **RS232/RS485**

**5.2) N. Max probes:**
Represents the maximum number of probes present on the video screen, one screen may contain a **maximum of** 9 probes.

**5.3) Language:**

Selects the desired language: **GB** = English, **IT** = Italian, **FR** = French.

**5.4) Screen Resolution:**

Sets the maximum graphic resolution. Normal setting is **800x600**dpi, the optimum resolution for **SVGA 14/15"** monitors, for monitors **17/19"** we suggest **1024x768**dpi.

It is necessary that the PC graphic setting should correspond to the one to be optained by Agritherm40Win program. If, due to incorrect setting, exit commands should disappear, it is sufficient to press **ESC** to terminate the program, then set the graphic resolution to the maximum ( 1024x768 ) and restart Agritherm40Win.

**5.5) Relays outputs:**

The switch **Enable/Disable** operate on relays outputs (optional 5 relays card).

**5.6) Printer:**

The switch **Enable/Disable** operate on printer. Program is supported by operating system so it works with any printer definite by system.

**5.7) Floating window:**

The switch **Enable/Disable** operate on the buttons of the top bar, so when the Disable function is setted, it is not possible minimize to icon Agritherm40Win.

**5.8) Bar Menu:**

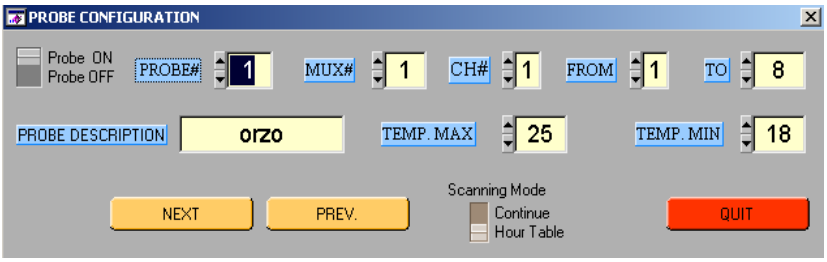
The switch **Enable/Disable** changes the setting of the buttons on the main screen which they will appear as a drop-down menu.

**5.9) History:**

These function stores all temperature scanning into the file Backlog.dat

## 5.10) SETUP PROBES:

Probe setup screen is use to set all the probe setup values.




### 5.10.1) Probe ON/Probe OFF:

The switch **ON** enables the probe which will be displayed on main screen.

### 5.10.2) PROBE NUMBER:

Indicates the progressive display position of the probe on the main screen which may display maximum 9 probes (columns) every screen.

### 5.10.3) MUX NUMBER:

Indicates the identifying address **UID** (Unit Identificator Device) of the **MUX** unit which the probe is associated (see wiring diagram).

### 5.10.4) CHANNEL NUMBER:

Indicates the channel of the MUX to which the probe is connected (see wiring diagram).

### 5.10.5) FROM:

Initial point of measurement of the probe.

### 5.10.6) TO:

Total points of measurement of the probe.

### 5.10.7) PROBE DESCRIPTION:

Enter alphanumeric text without spaces, up to 7 characters.

### 5.10.8) Temp.Max.

Set the alarm temperature threshold. The probe on alarm will be displayed with red outlines.

### 5.10.9) Temp.Min.:

Set the pre-alarm temperature threshold. The probe on alarm will be displayed with green outlines.

### 5.10.10) NEXT.:

Move the program to next probe.

### 5.10.11) PREVIOUS.:

Move back the program to previous probe.

### 5.10.12) Scanning mode:

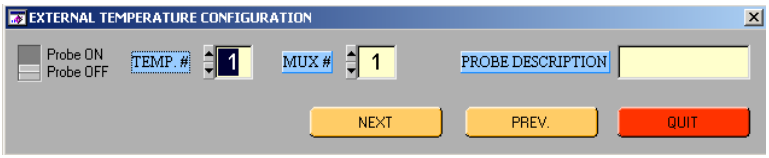
Select the scanning mode (continuous or time table)

### 5.10.13) END:

Close this session and returns to the setup screen.

## 5.11) SET EXT. TEMP.

External probe setup screen with a maximum of 40 probes ( 1 for every MUX unit ).




### 5.11.1) Probe ON/ Probe OFF :

The **ON OFF** switch enables the probe **ON** (see wiring diagram)

### 5.11.2) PROBE NUMBER :

Progressive number from 1 to 40 .

### 5.11.3) MUX NUMBER:

Progressive number from 1 to 40.

### 5.11.4) PROBE DESCRIPTIONE:

External probe ID field,enter alphanumeric text without spaces ( max. 7 characters ).

### 5.11.5) NEXT:

Move the program to next probe.

### 5.11.6) PREVIOUS:

Move back the program to previous probe.

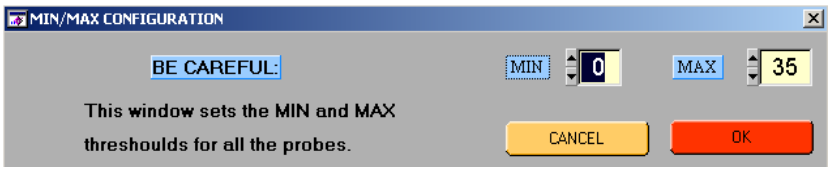
### 5.11.7) END:

Close this session and returns to the setup screen.

.

**5.12) SET MIN. mAX.:**

Sets the temperature thresholds for all probes.




**5.12.1) Min.:**

**Minimum temperature alarm** threshold.

Enter values from –10 to 99, below these values the green alarm will occur.

**5.12.2) Max.:**

**Maximum temperature alarm** threshold.

Enter values from –10 a 99, below these values the red alarm will occur.

**5.12.3) Cancel:**

Cancel the operation and returns to the setup screen.

**5.12.4) OK:**

Confirms the parameters set. (for the operation more seconds may occur)

**5.13) INIT PROBES:**

Initialized all the probes deleting all previous parameters setups. It is used when the plant must be totally reconfigured. This operation is not recommended.

**5.14) PRINT CONFIG:**

Print the configuration of all probes sets.

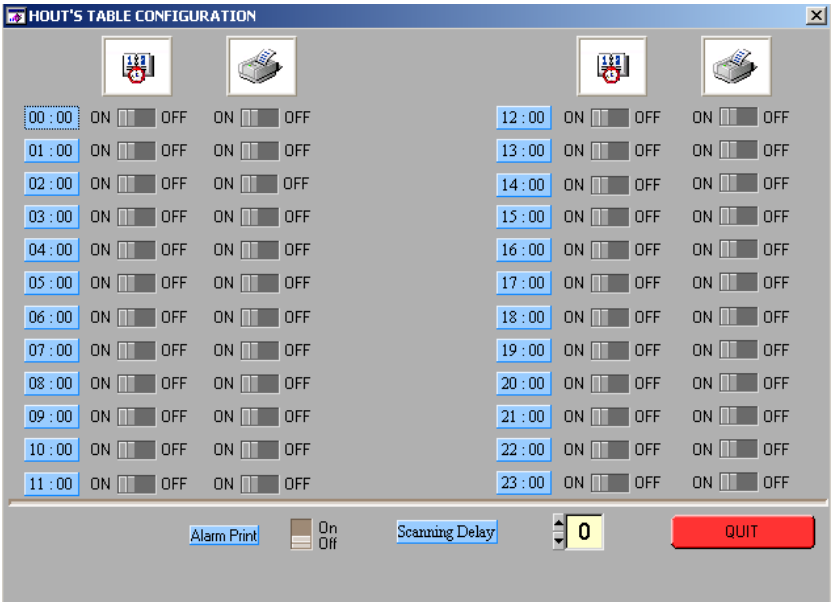
*NOTE- We suggest the storage of a print of the system configuration at the start-up of the plant and at every revision.*

**5.15) END:**

Return to the main screen.

**6)** CONF. TAB. ORARIA

Printing mode and time memory storing setup.




### 6.1) PRINTING MODE AND TIME MEMORY STORAGE

Using the **ON/OFF** switches it is possible enable the time set for the temperature scanning.

Using the **ON/OFF** switches located under this icon , you can program the automatic printing, for all probes (if the *PRINTING* option is enabled, see page 8) of the temperature values detected during the last scanning.

### 6.2) SCANNING TIME INTERVAL

Time interval (minutes), when you want an interval, between scannings, during the continuous operation mode, enter values from 1 to 30.

### 6.3) ALARM PRINT:

The **ON/OFF** switch enable the printing of the alarms detected during the scanning.

### 6.4) END:

Returns to main screen

**7)** TEMP. ESTERNA **:**

External probes reading screen, function available if external probes have been connected and the MUX unit has been set up for their connection.

**8)** PAGE SELECT 1 **:**

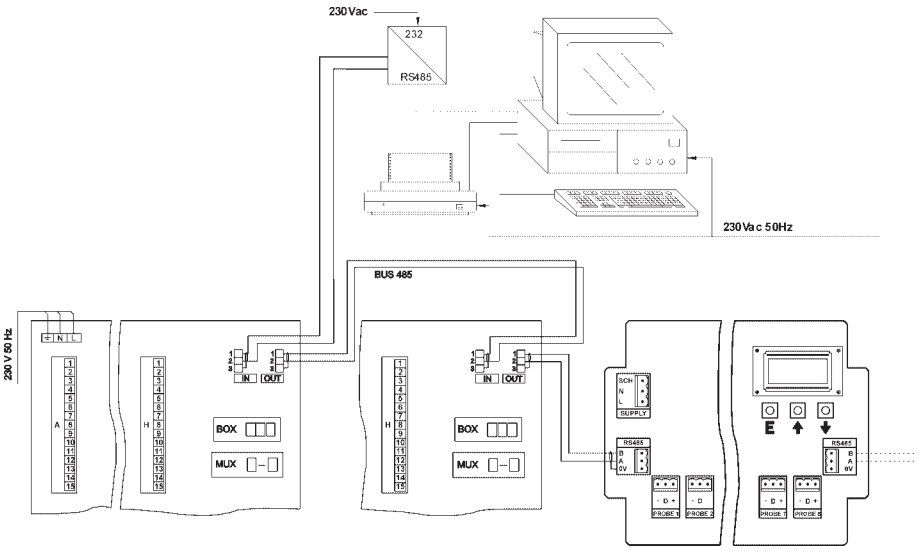
This “scroll-bar” button is used to select to move the screen page to the next or previous ones.

**9)** FINE **:**

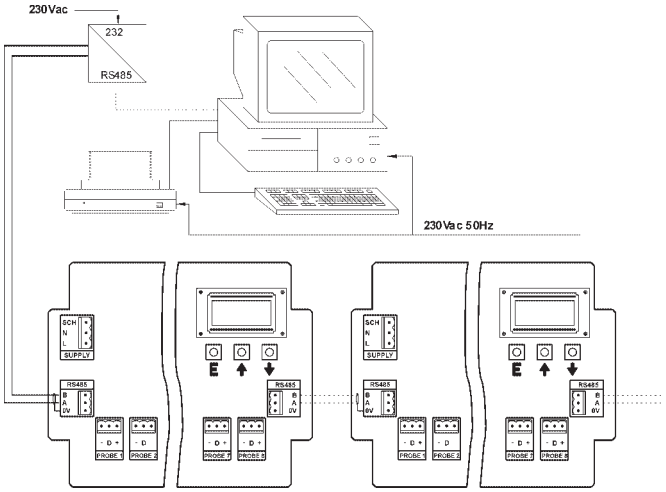
It is used to exit from AGRITHERM40Win program. From the moment of his use, no temperature will be updated and the historic files storage will be interrupted. It is however possible to minimize the program on icon to be able to use other programs while Agritherm40Win will continue to operate.

## AGRITHERM40WIN Electric diagrams

For an existig plant extension, using new **MUXA/C/D** units, the following diagram must be done.




For a new plant erection, using new MUX units, the following diagram must be done.



## **AGRITHERM40WIN** Warranty

Products supplied by SGM LEKTRA are guaranteed for a period of 12 (twelve) months from delivery date according to the conditions specified in our sale conditions document. SGM LEKTRA can choose to repair or replace the Product. If the Product is repaired it will mantein the original term of guarantee, whereas if the Product is replaced it will have 12 (twelve) months of guarantee. The warranty will be null if the Client modifies, repair or uses the Products for other purposes than the normal conditions foreseen by instructions or Contract. In no circumstances shall SGM LEKTRA be liable for direct, indirect or consequiential or other loss or damage whether caused by negligence on the part of the company or its employees or otherwise howsoever arising out of defective goods.

## **AGRITHERM40WIN** Factory test certificate CE

In conformity to the company and ceck procedure I certify that the equipment:

AGRITHERM40WIN..... part nb. .....

is conform to the technical requirements on Technical Data and it is made in conformity to the SGM-LEKTRA procedure

Quality Control Manager: .....

Production and ceck date: .....

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