Agritherm50

Temperature display and control software

EN Technical documentation Rev. of 29/03/2022

sgm lektra

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1-1- CHARACTERISTICS

AGRITHERM50 is a software for controlling the temperatures inside grain storage silos/industrial buildings.
This control is essential to prevent product fermentation phenomena and to meet the current fire-prevention regulations.
Agritherm50 is used to set two temperature thresholds, pre-alarm and alarm, which can be customised for each individual measurement probe.
Optionally, a relay card for visual and/or acoustic signalling or for the enabling of ventilation can be associated with the alarms management.
In addition to being displayed, the temperatures can be stored in a data recorder to ensure the traceability of the storage process.
The display layout can be customised according to the customer's requirements.

2-SOFTWARE INSTALLATION

Minimum requirements: Windows 7 - 32 bit or higher.

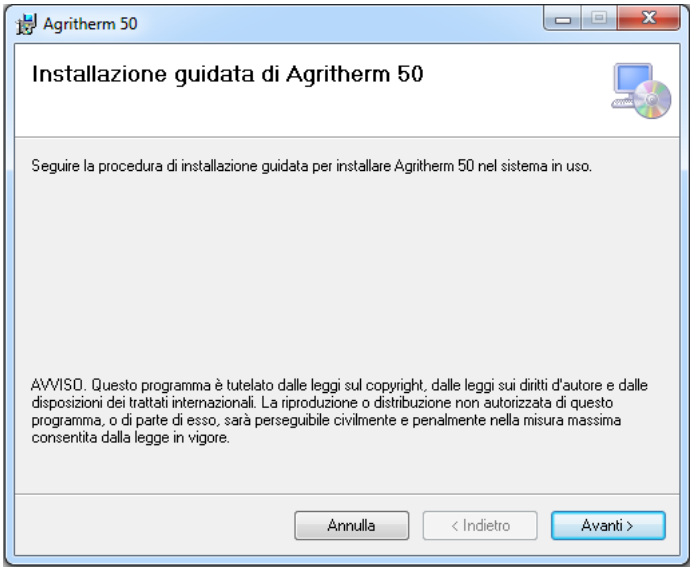
2.1 AGRITHERM50 INSTALLATION WIZARD

Insert the USB-PEN, open the SOFTWARE folder

and run the setup.exe file

Click on "**Avanti**" to proceed

Click on "**Annulla**" to exit the installation wizard



2.2 DESTINATION FOLDER SELECTION

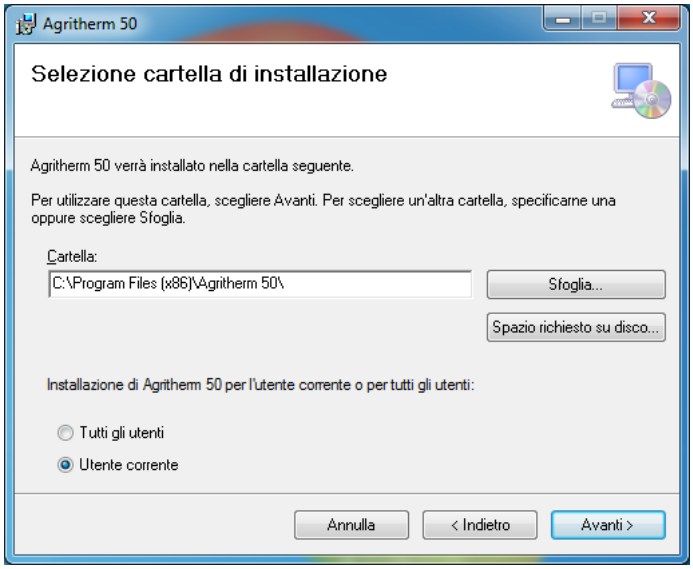
"**Agritherm50**" asks for confirmation for the program destination folder.

Click on "**Sfoglia**" to change the destination folder.

Click on "**Avanti**" to proceed.

Click on "**Indietro**" to return to the previous step of the installation procedure.

Click on "**Annulla**" to exit the installation wizard.

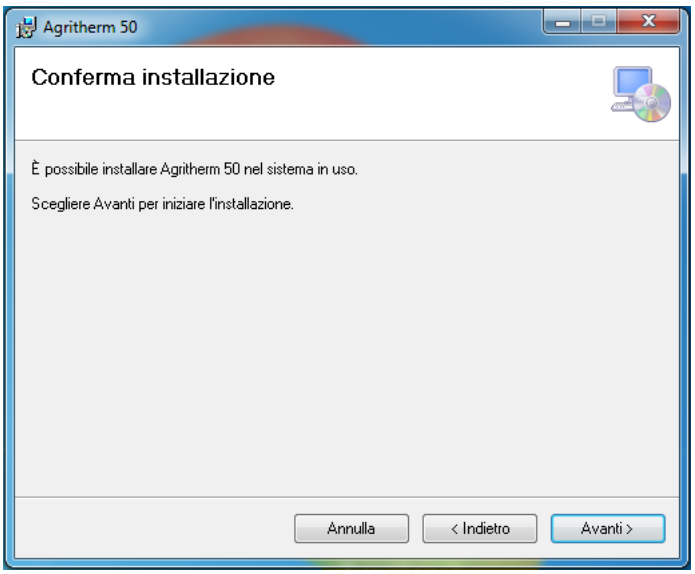


2-INSTALLATION

2.3 CONFIRM INSTALLATION

Click on “**Avanti**” to proceed with completion of the installation.
Click on “**Indietro**” to return to the previous step of the installation procedure.

Click on “**Annulla**” to exit the installation wizard



Wait for the procedure of file installation to be completed

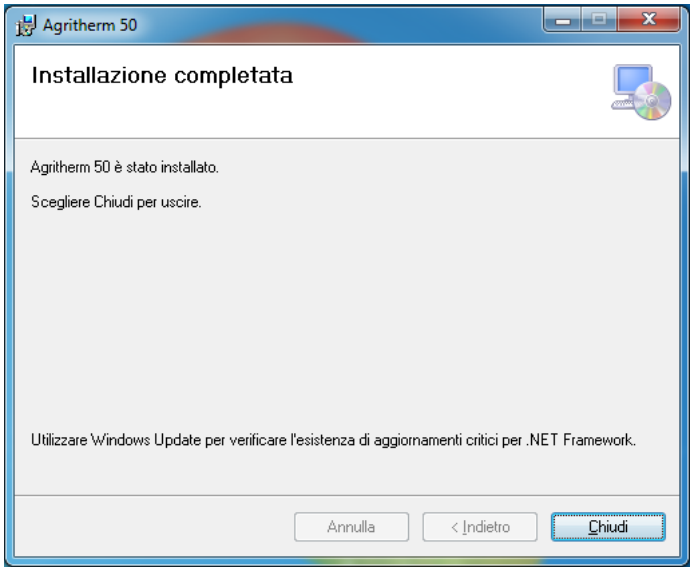
Click on “**Annulla**” to exit the installation wizard.

2.4 INSTALLATION COMPLETED

Click on “**Chiudi**” to exit and complete the installation procedure.

The icon for starting of the software will now be present on the desktop. If it is necessary for the AGRI-THERM50 to be launched automatically when Windows® starts, simply create a link within the autorun folder.
To remove the Agritherm50 program from the PC, proceed as follows:

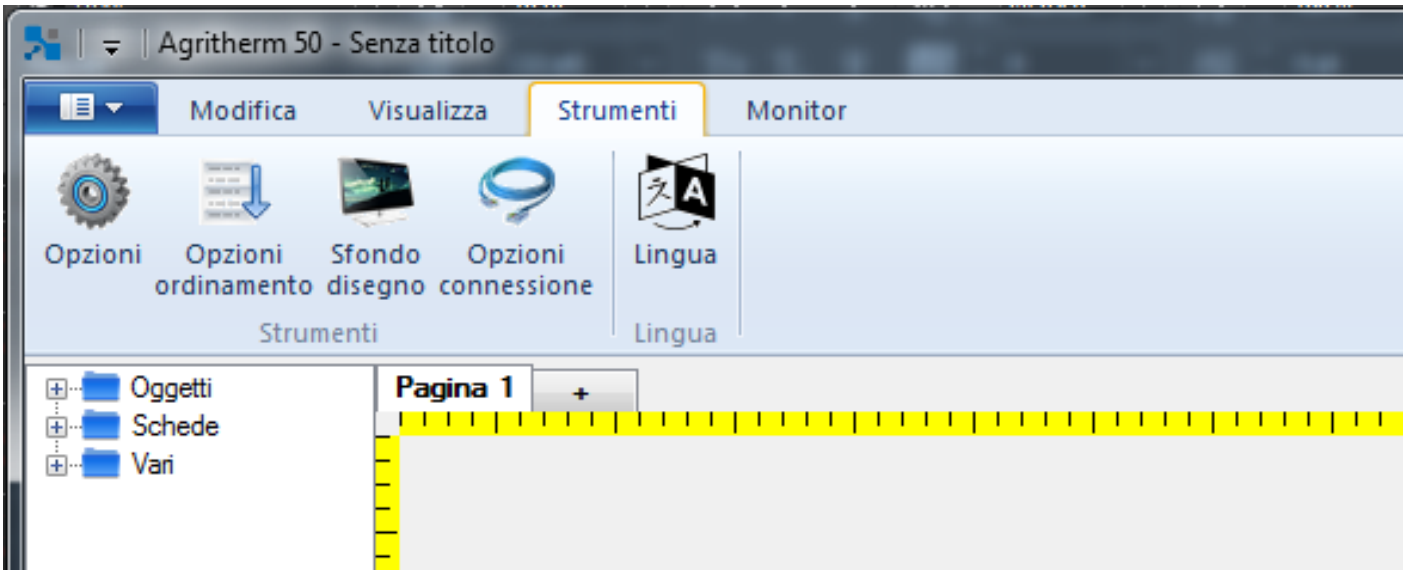
a) access the “**Control panel**”.
b) open the “**Programs and functions**” section
c) in “**Uninstall or change program**” mode, select the Agritherm50 icon and click on “**Uninstall**”

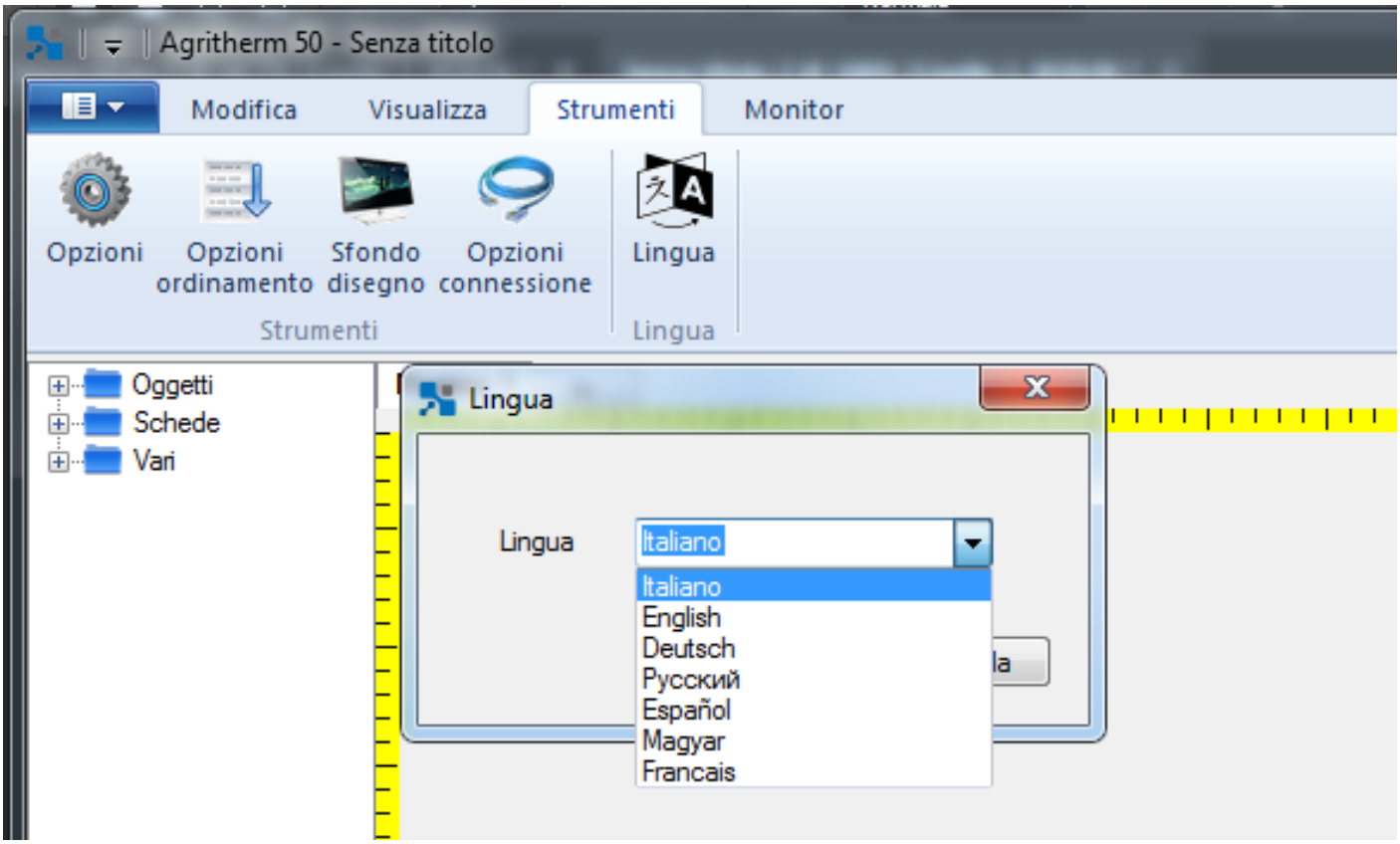


3-SOFTWARE START-UP

3.1 SET LANGUAGE

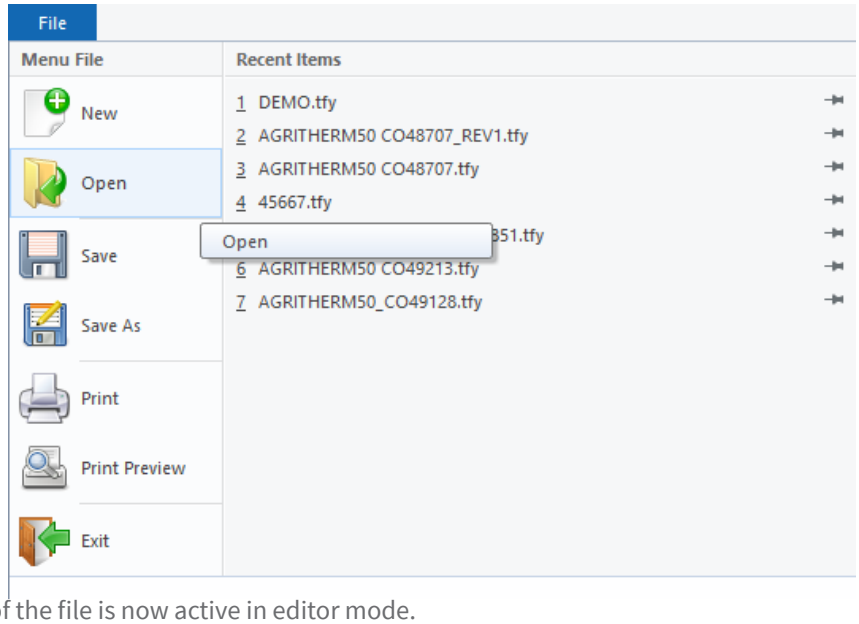
To select the desired language, first click on "**Strumenti**", then on "**Lingua**".
This opens a window for the selection. Close and reopen Agritherm 50 to save the change.



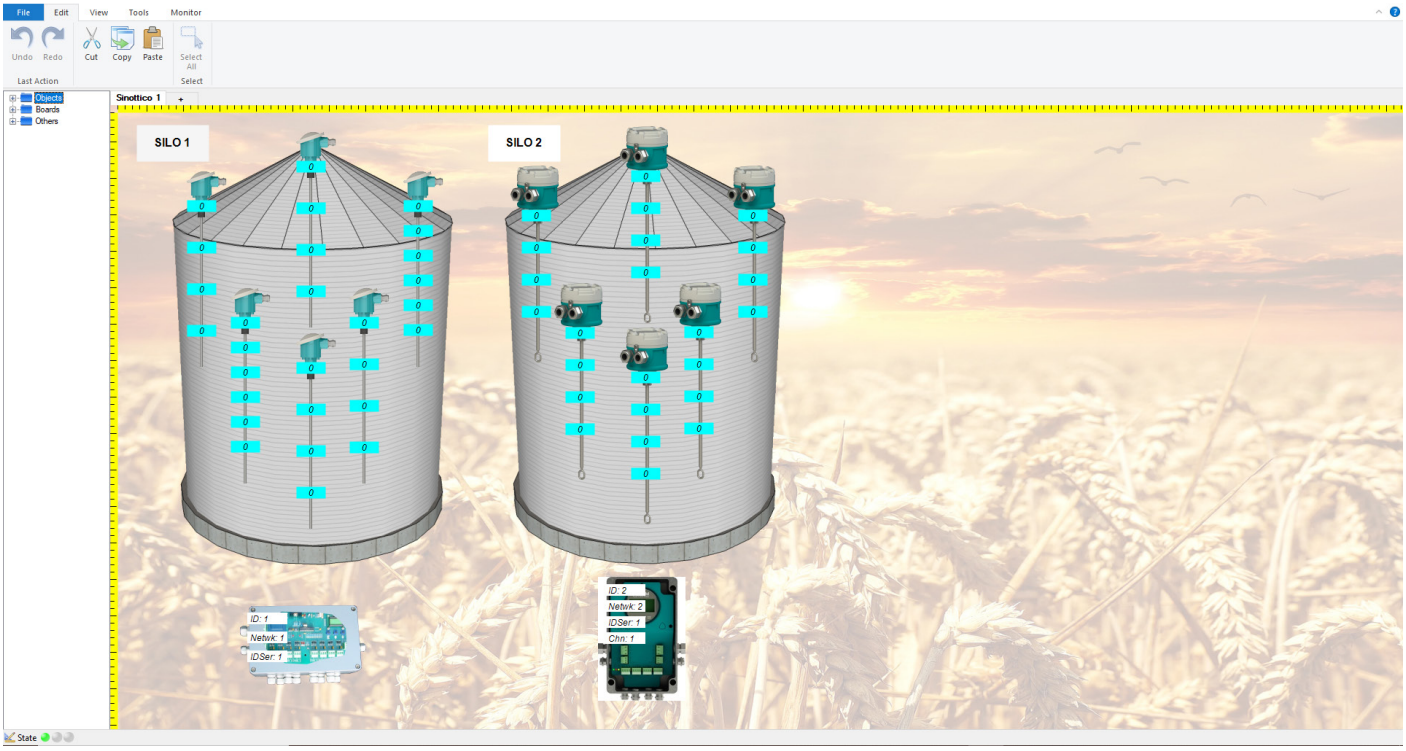


3.2 SYSTEM CONFIGURATION LOADING

To load the system configuration, copy onto the PC the contents of the BACKUP folder present on the key supplied, click on “Applications menu”, “Open” and select the previously copied “.tfy” file.



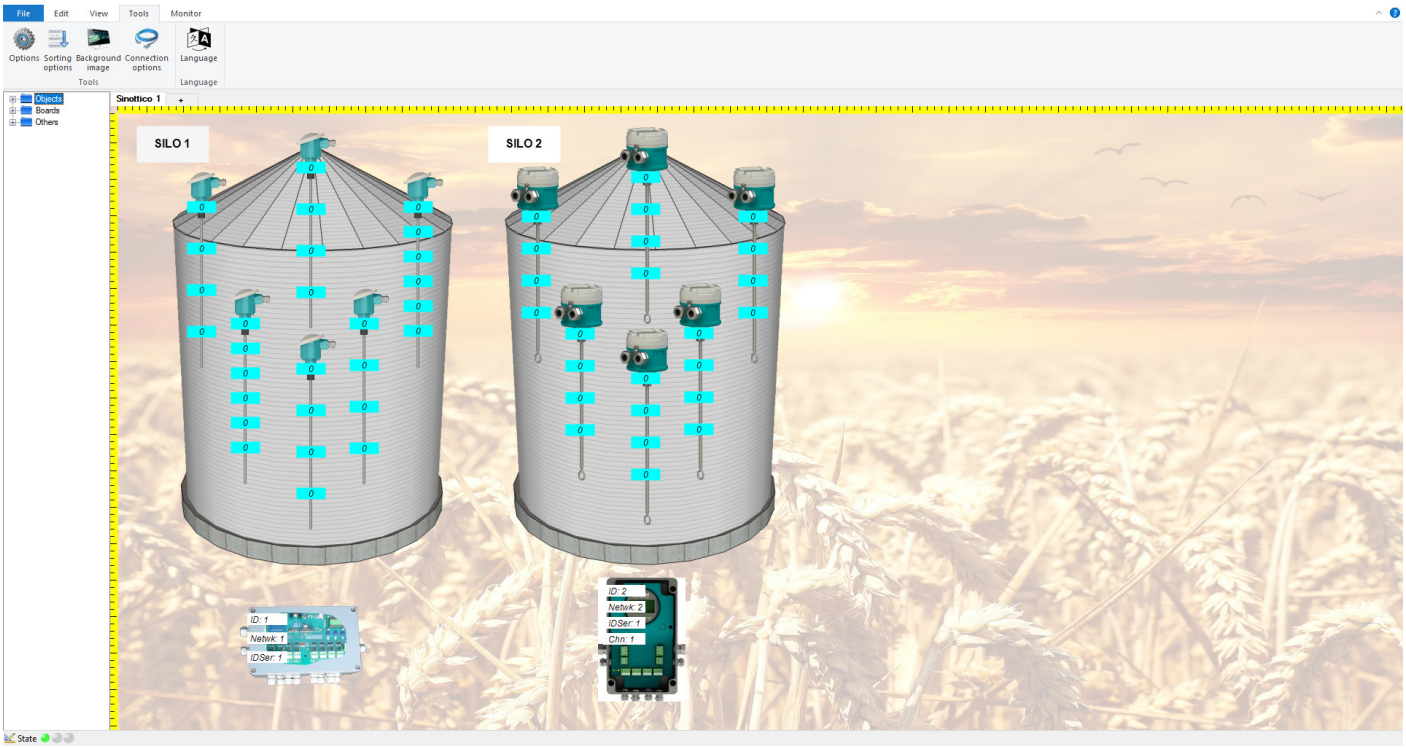
The system configuration of the file is now active in editor mode.



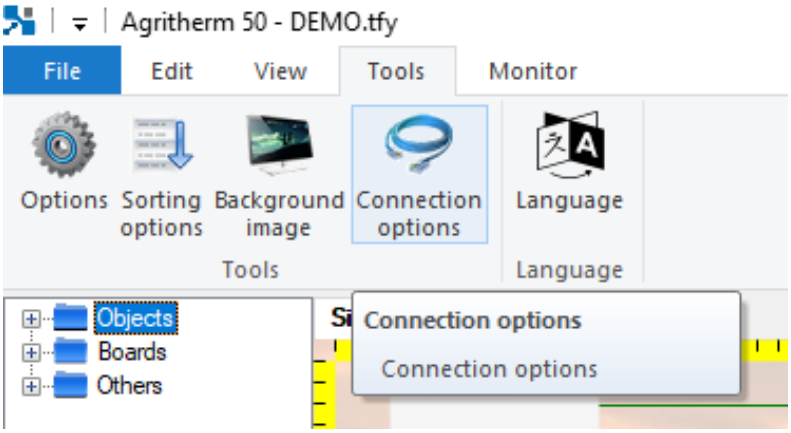
4-COM PORT CONFIGURATION

4.1 CONFIGURATIONS

For correct serial communication, it is necessary to check the setting of the AGRITHERM50 serial port.
Click on “Tools” to access the configurations.



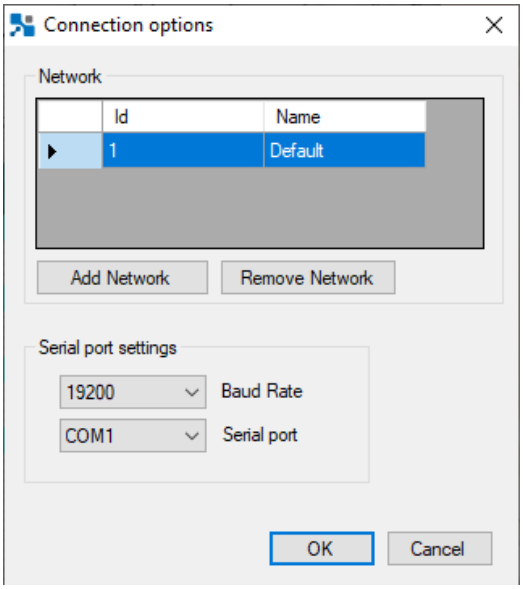
Click on “Connection options”.



The “Agritherm50” software is designed to work with 2 different types of concentrators:

- with traditional SGM protocol (MUX with TT probes, on RS485 serial network at 9600 baud)
- with MODBUS protocol (MUXM with TM probes, on RS485 serial network at 19200 baud)

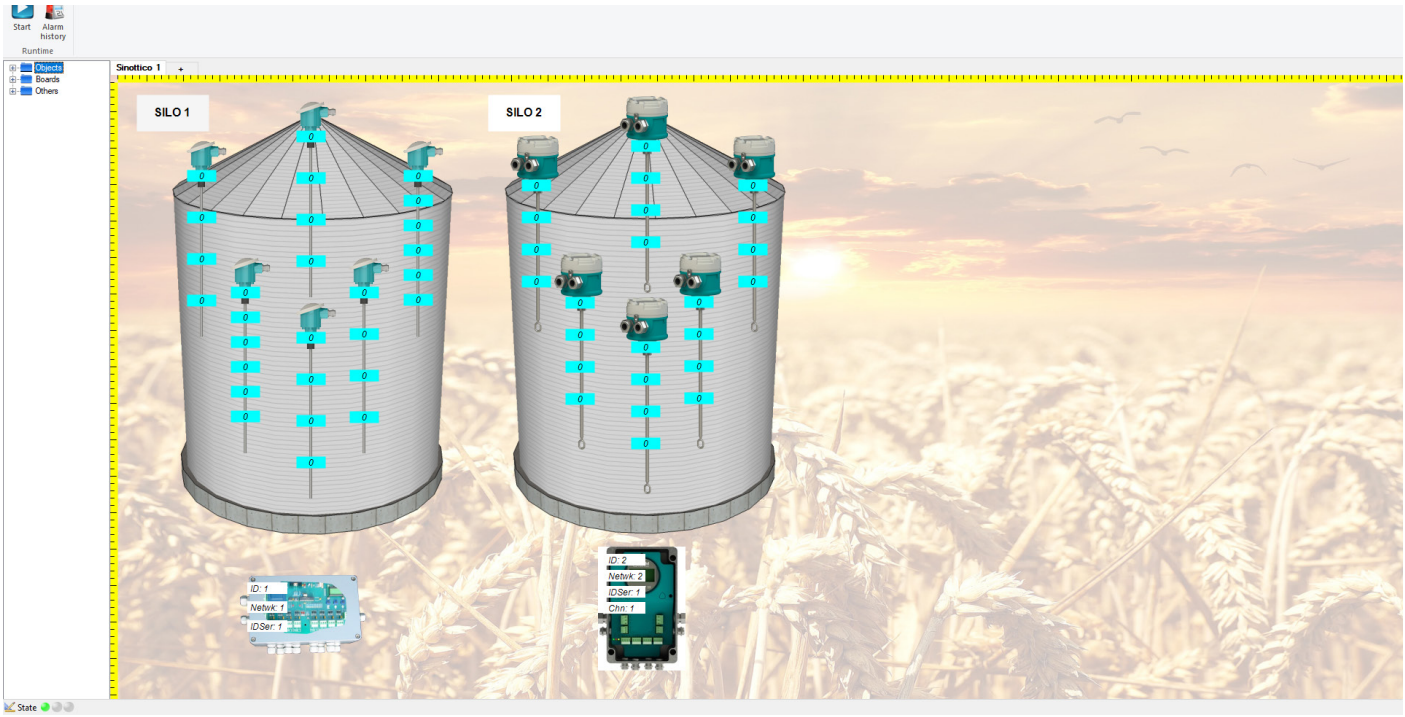
The “ID” and “NAME” fields of the individual system serial communication lines are assigned during the phase of system configuration at SGM Lektra;
N.B. - In this window it is necessary to verify that the settings of the COM serial port associated with the RS485 converter and the baud rate set are correct.



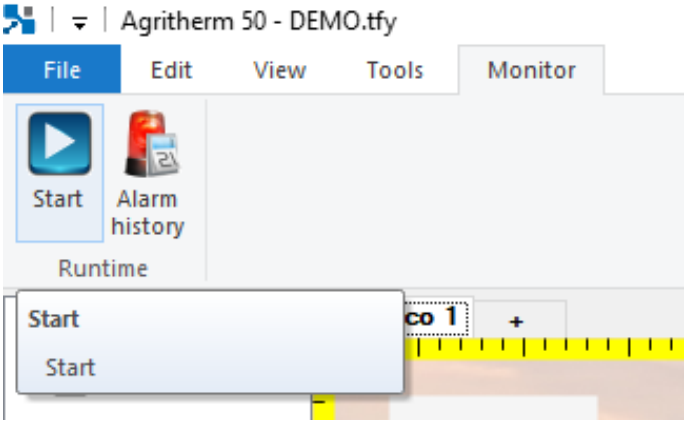
5-PROBE MONITORING

5.1 MONITOR

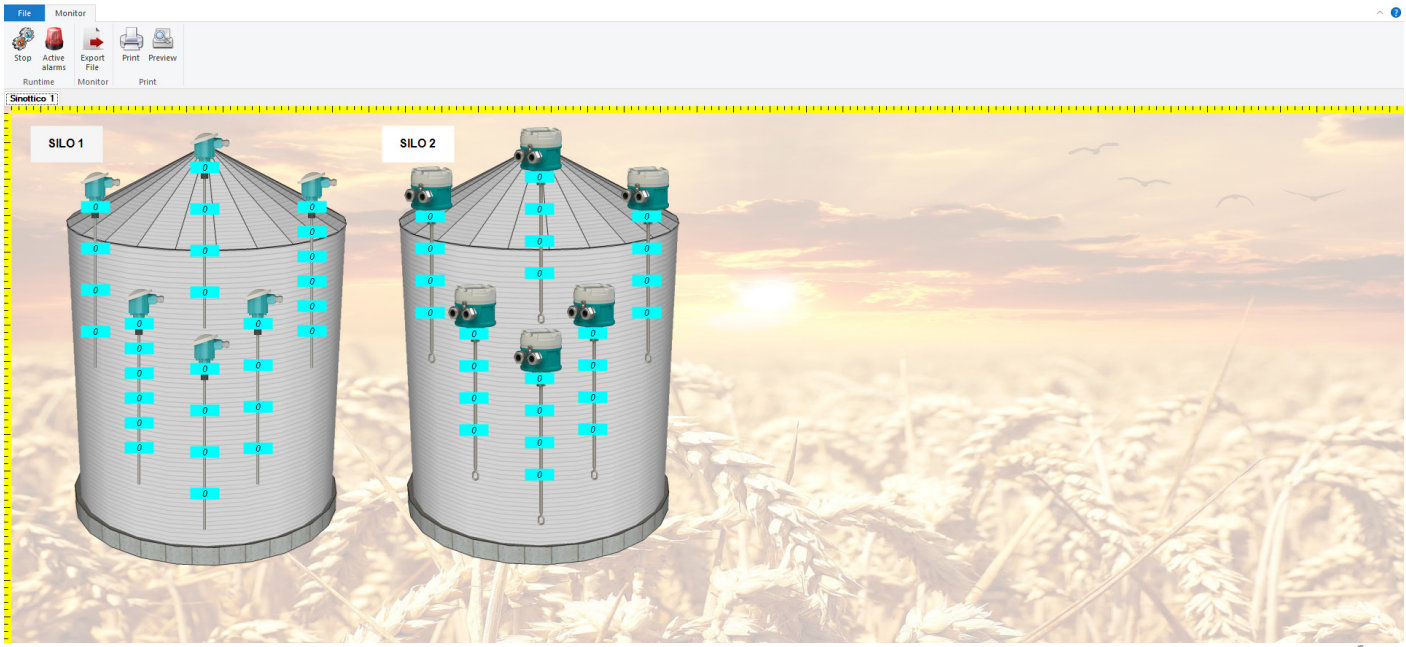
Click on “Monitor” to access the probe monitoring management



Click on “**Start**” to activate the automatic scan of the configured probes.



During the probe monitoring phase, the “**Application**”, “**Edit**”, “**View**” and “**Tools**” menus are not accessible.



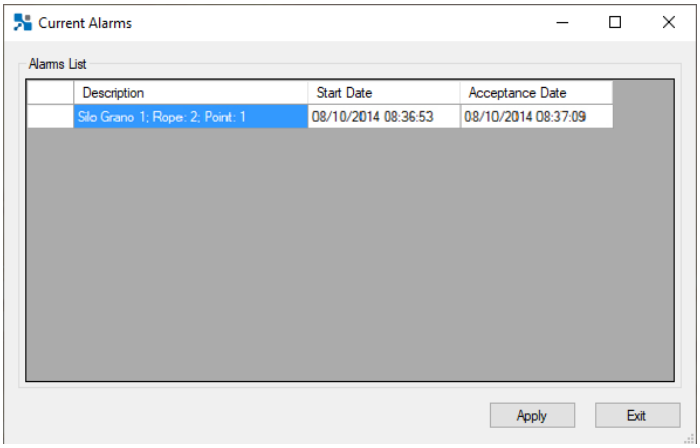
6-MONITORING FUNCTIONS

6.1 ACTIVE ALARMS

By clicking on the "**Active alarms**" icon, the "**Current Alarms**" display window opens.

6.1.1 Current Alarms

In this window it is possible to view the alarm events table:

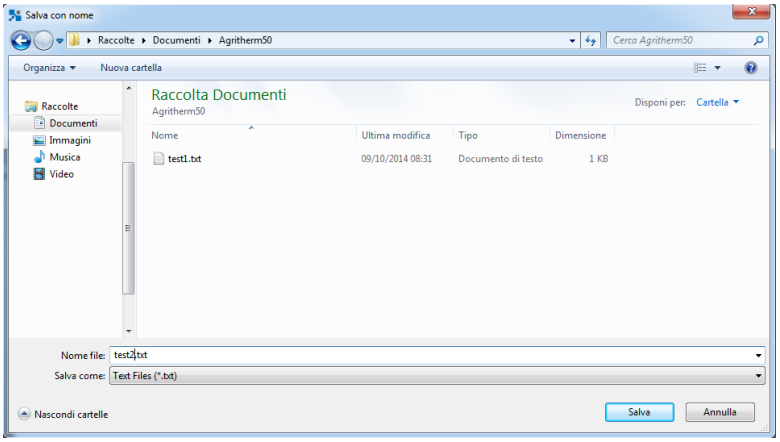


- The "Description" column displays the coordinates (silo/industrial building name; probe no.; probe point no.) for localisation of the alarm measurement point
- The start date and time of the alarm event are displayed in the "Start Date" column
- The date and time are displayed in the "Recognition Date" column. It is automatically filled in by pressing the "Accept" button

6.2 EXPORT FILE

This function saves, in a TXT file, the temperatures measured upon clicking the key "Export File".

In the explore resources window it is possible to select the folder and enter the file name.



6.3 PRINT

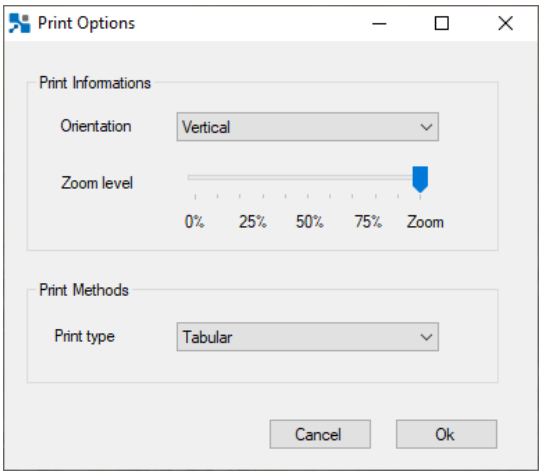
By clicking on the “Print” icon, the “Print options” window opens.

6.3.1 Print options

In this window it is possible to customise the print format

6.3.1.1 Print information

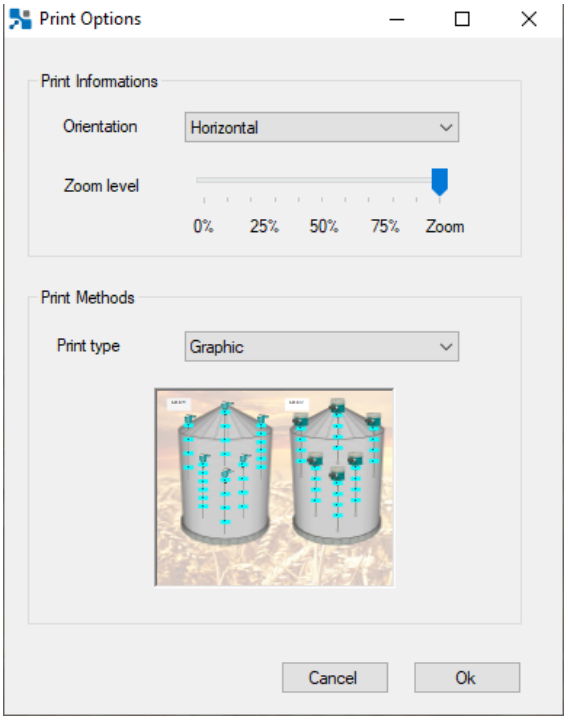
Customising the print page format:
- “Orientation”; select sheet orientation: portrait or landscape
- “Zoom level”; select the print zoom percentage



6.3.1.2 Type of printing

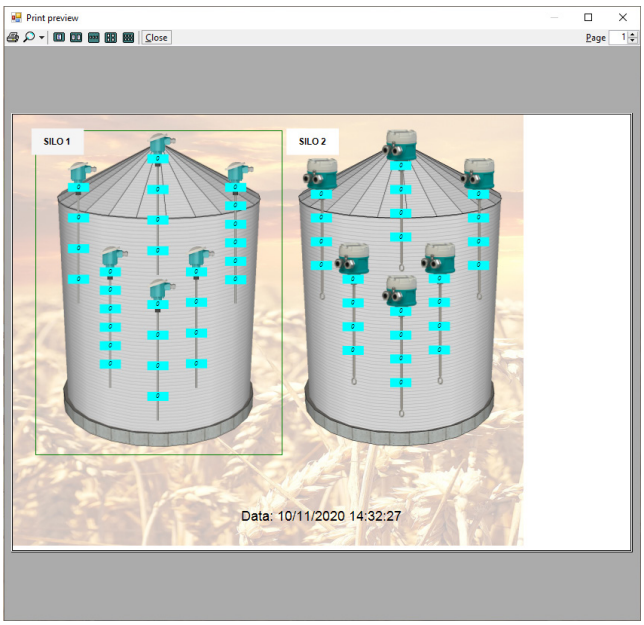
Customizing the print graphic format:
- “Tabular”; the printout will show the temperature table shown on the screen in the selected synoptic.
- “Graphics”; the printout will show the screen representation of the selected synoptic.

By clicking on the “Ok” button, the settings are confirmed and the “Print preview” window will open.
Click on the “Cancel” button to exit.



6.3.2 Print preview

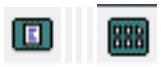
In this window it is possible to check the previously selected print settings.
Depending on the format chosen (see paragraph 6.3.1.2) the print preview displayed will be:
- a graphic representation of the silos and/or industrial buildings
- temperature tables of the silos and/or industrial buildings



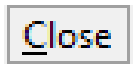
In both options, the following buttons are available:

- sending of the print directly to the default system printer

- adjusting of the zoom of the print preview.

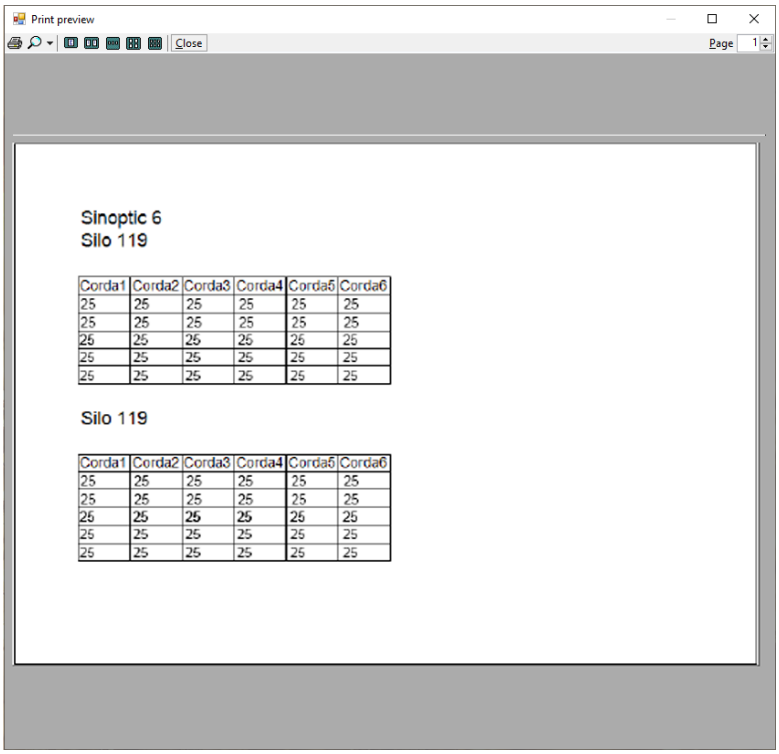


- selecting single or multiple page print preview display.



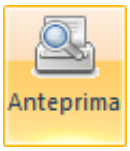
- cancelling of the print operation.

- selecting of the page number in the print preview.



6.4 PREVIEW

By clicking on the “Preview” icon, the “Print options” window opens with the same functions already described in paragraph 6.3.1

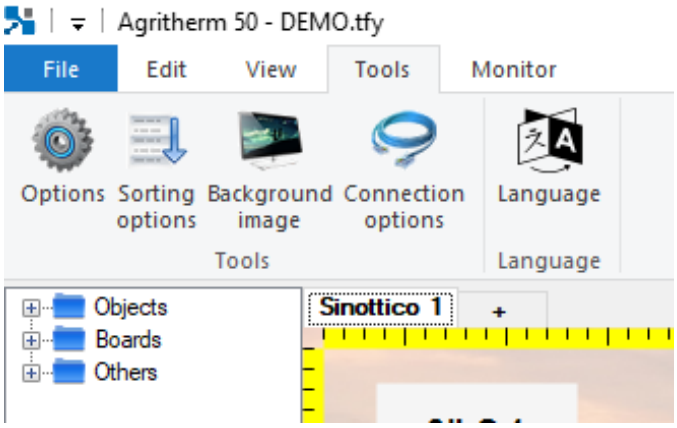


6.5 STOP

Clicking on the “Stop” icon stops the automatic scanning of the probes and the “Application”, “Edit”, “View” and “Tools” menus are once again accessible.

7-OPTIONS

By clicking on “Options” it is possible to access the “General Options” window to configure the AGRITHERM50.
N.B. - the “Tools” menu is not accessible while monitoring the temperature probes; click on the “Stop” button to stop probe monitoring.



7.1 GENERAL OPTIONS

In the “General Options” window it is possible to customise a number of functions of the AGRITHERM50.

7.1.1 Start automatic monitoring

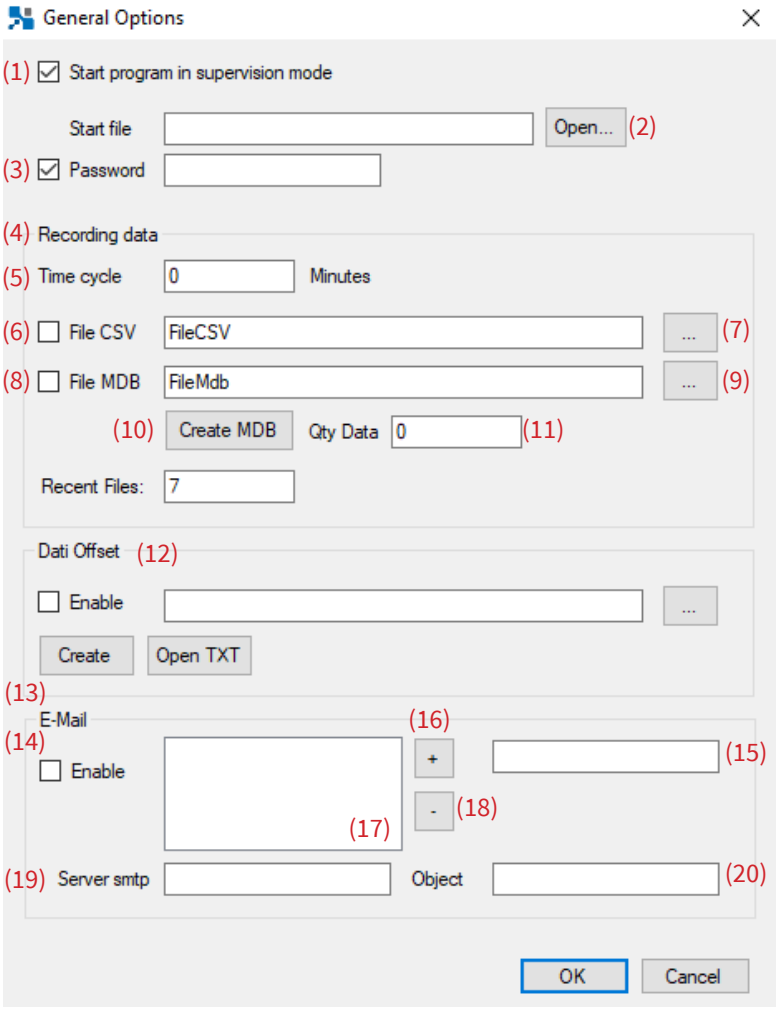
Upon start-up, the AGRITHERM50 can automatically give the **START** command (see chap. 5) for monitoring of the temperature probes. For this function it is necessary to activate the flag (1) “Start the Program in supervision mode” and then click on “Open” (2) to select the .tfy system configuration file to be loaded automatically.

7.1.2 Password protection

The protection password prevents an unauthorised STOP command (par.6.1) from being given. For this function it is necessary to activate the “Password” flag (3) and then to enter the unlock key in the appropriate field, max. 18 characters.

7.1.3 Data recording

AGRITHERM50 has the “Recording Data” (4) on file function for archiving of the measured temperatures on file. Archiving in Excel® (.csv) or Access® (.mdb) files is possible



7.1.3.1 Time cycle

In the “Time cycle” field (5) it is possible to set the time interval, in minutes, of the data recording.

7.1.3.2 Excel® format

To archive the measured temperatures on file in Excel® format (.csv), proceed as follows:
a) activate the “CSV File” flag (6)
b) clicking on the button (7) the “Search Folder” window will open. Here it is possible to select the folder where the files will be saved, or by clicking on “New Folder”, it is possible to create the folder where the files will be saved. Click on “OK” to confirm. The archiving system will create individual files at each recording event (see para.7.1.3)

7.1.3.3 Access® Format

To archive the measured temperatures in Access® format (.csv) files, proceed as follows:

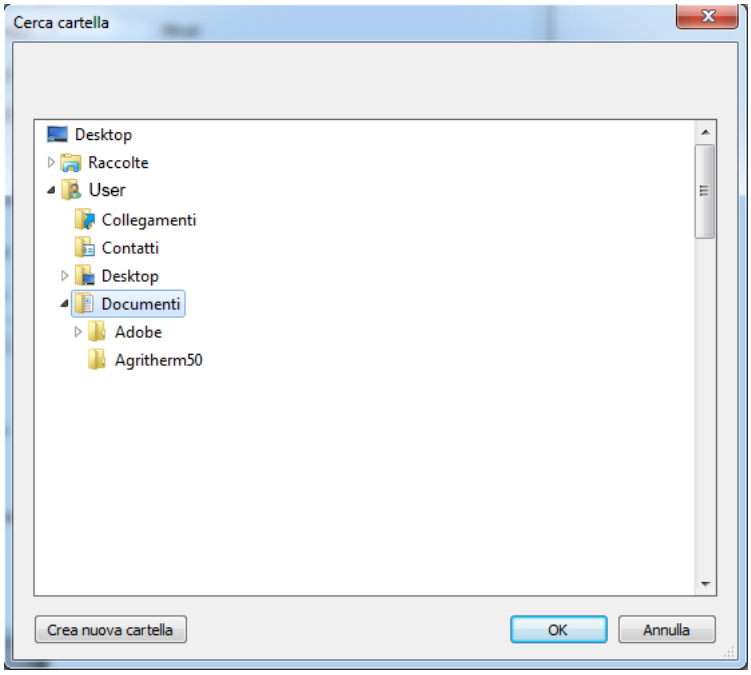
a) activate the “MDB File” flag (8)

b) clicking on the button (9) the “Search Folder” window will open. Here it is possible to select the folder where the files will be saved, or by clicking on “New Folder”, it is possible to create the folder where the files will be saved. Click on “OK” to confirm.

c) click on the “Create MDB” button (10) to generate the TFDB.mdb database file

d) in the “Data qty” field (11) enter the limit number of recordings in the TFDB.mdb database file.

The system, at each recording event (see para.7.1.3), will increase the data in the individual tables (one for each silo) in the TFDB.mdb database file.



7.1.3.4 Offset Data

Beta version function, not yet usable.

7.1.3.5 E-mail di allerta temperature

The E-Mail function (13) of the AGRITHERM50 is able to automatically send alert e-mails.

To configure the sending proceed as follows:

a) activate the “Enable” flag (14)

b) enter the recipient’s e-mail address in the appropriate field (15);

c) click on the “+” button (16) to add the e-mail address to the list of recipients (17)

d) enter the SMTP server in the appropriate field (19)

c) In the “Subject” field (20) enter the e-mail sending header.

To delete an e-mail address from the list of recipients (17), proceed as follows:

a) in the list of recipients (17) click on the e-mail address to be deleted

b) click on the “-” button (18) to delete the e-mail address from the list of recipients (17)

7.2 Relay module

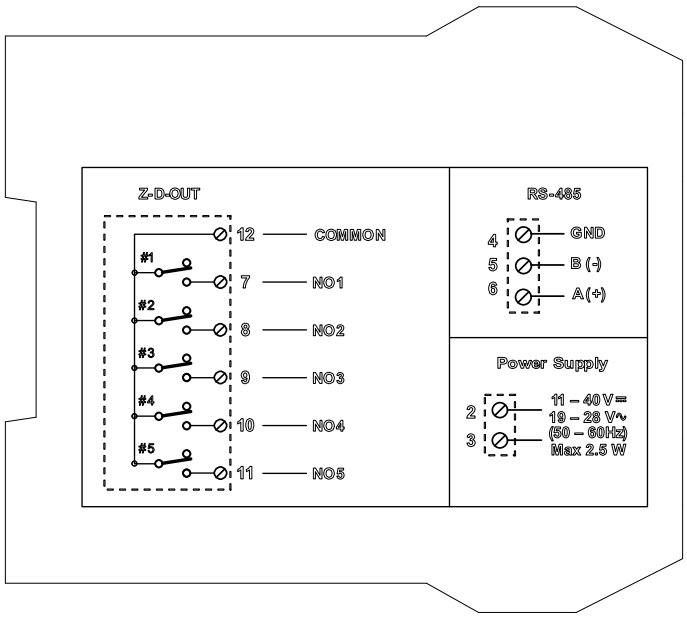
The 5 relay/RS485 output module will be connected via serial to the USB/RS485 interface module, which will be connected to a USB port on the PC.

The operating logic is:

- **TEMPERATURE ALARM. AVERAGE** (cannot be silenced). When any point of any probe exceeds its "Average temperature" threshold, the NO1 contact relay (relay normally energised) will be de-energised. Relay NO1 only loses its alarm condition when at the end of the temperature scan cycle there are no points in average temperature alarm.
- **AVERAGE TEMPERATURE ALARM** (can be silenced). When any point of any probe exceeds its "Average temperature" threshold, the NO2 contact relay (normally energised relay) will be de-energised. The relay will remain in an alarm condition until it is silenced using the appropriate button next to the "Active Alarms" button. Once the alarm has been silenced, it cannot be reactivated from the temperature points that are in alarm at the time of silencing, but can only be reactivated by new average temperature alarm events (e.g. a new alarm is detected during scans following silencing which was not present at the time of the silence). A point, which generated the average temp. alarm, can only generate a new average temp. alarm event (which can be silenced) after its read temperature drops below its "Average temperature" threshold.
- **MAXIMUM TEMPERATURE ALARM** (cannot be silenced). When any point of any probe exceeds its "Average temperature" threshold, the NO3 contact relay will be de-energised (relay normally energised). The NO3 relay only loses its alarm condition when at the end of the temperature scanning cycle there are points in maximum temperature alarm.
- **MAXIMUM TEMP. ALARM** (can be silenced). When any point of any probe exceeds its "Maximum temperature" threshold, the NO4 contact relay (relay normally energised) will be de-energised. The relay will remain in an alarm condition until it is silenced using the appropriate button next to the "Active Alarms" button. Once the alarm has been silenced, it cannot be reactivated from the temperature points that are in alarm at the time of silencing, but can only be reactivated by new maximum temperature alarm events (e.g. a new alarm is detected during scans following silencing which was not present at the time of the silence). A point, which generated the maximum temp. alarm, can only generate a new maximum temp. alarm event (which can be silenced) after its read temperature drops below its "Maximum temperature" threshold.

The graphic alarm in progress is:

GREEN – no alarm in progress
YELLOW – presence of average temperature alarm
RED – presence of maximum temperature alarm



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