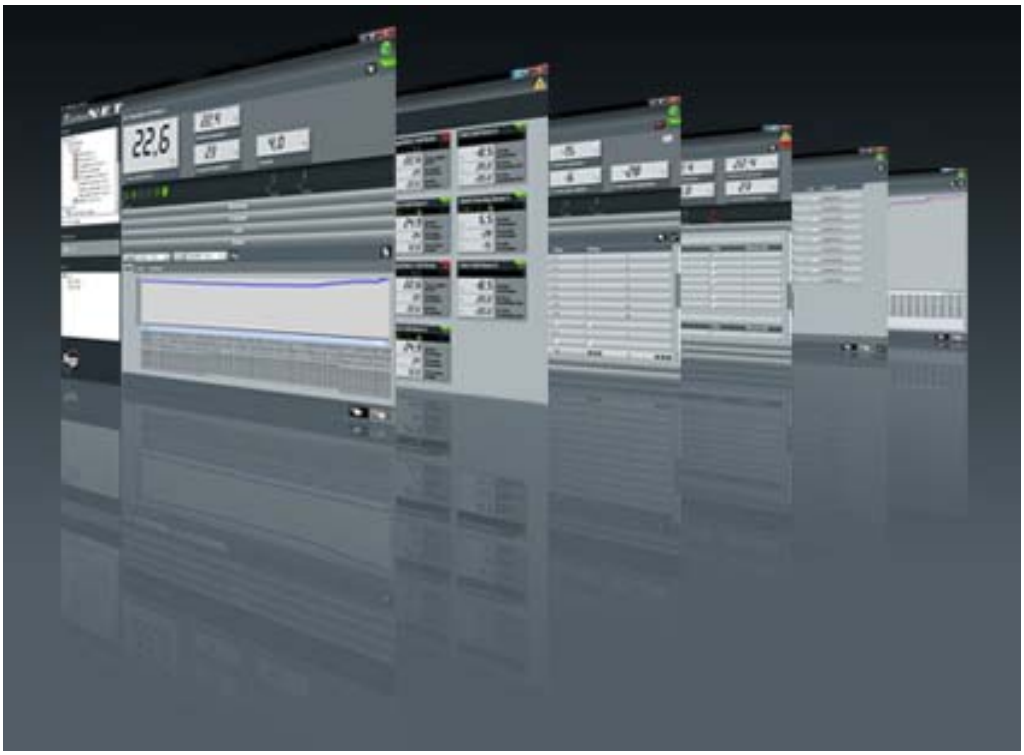
TeleNET



Use and maintenance manual

Rev. 03-08 ENG
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Versione DB 2008.11.0

ELECTRICAL BOARDS FOR REFRIGERATING INSTALLATIONS

Electrical Boards Pego®

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1 INTRODUCTION

1.1 TELENET OVERVIEW

TeleNET is an application for supervision and monitoring of refrigeration and conditioning systems controlled by Pego electronic instruments. The network of instruments channels the data onto a personal computer where it possible to display and print reports, manage alarms, modify operating parameters and monitor the whole system.

Applications:

- Monitoring and supervision of refrigeration and conditioning systems.
- Automatic control of work cycles.
- Recording of physical parameters (temperature, humidity, pressure, CO_2).
- Industrial cooling, storage, seasoning systems.
- Registration and consultation of data saved on Secure Digital card (for Pego electrical panel Plus Expert series)

Packaging contents:

n°1 Software installation CD-ROM
n°1 USB key for software protection
n°1 TWRS 485 desk interface
n°1 Connecting serial cable
n°1 Power supply
n°1 User manual

TeleNET SD packaging contents:
Only for TeleNET software application for recording download of PLUS EXPERT panels series it's provided only the installation CD-ROM. (please refer to chapters 4,5,6,7)

1.2 CLIENT/SERVER STRUCTURE

TeleNET is a client/server type application that facilitates configuration on local LAN and Internet ambient.

It identifies:

Server: PC where the database belongs. All informations on instruments and history are stored in a unique SQL database.

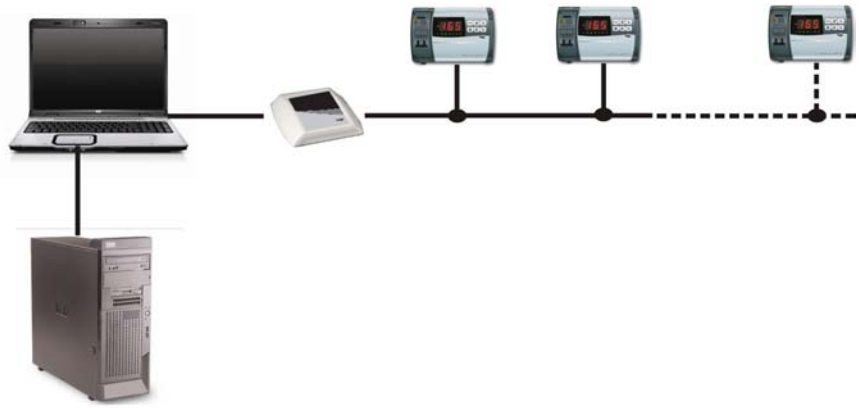
Client Node: PC which is connected the TWRS485 interface for instruments chain and USB hardware protection key. With a single TeleNET license is possible to manage only one client node

Typical examples of installations are the following:

1) Complete installation on a single PC (Server + Client Node)

2) Local LAN installation with server on a dedicated PC.

In this case database stays on a server while instruments chain is connected on a PC in local net with server



1.3 SYSTEM REQUIREMENTS

Minimum requirements for TeleNET utilization are:

- Server

Operating system	○ Windows® XP sp2 ○ Windows® Vista
Memory	RAM 1 GB (2 GB for Windows Vista)
Hard disk	10 GB available space

- Client

Operating system	○ Windows® XP sp2 ○ Windows® Vista
Memory	RAM 1 GB (2 GB for Windows Vista)
Hard disk	10 GB available space
Display	Resolution 1024x 768 24 bit min. Recommended 1280x1024 32 bit
Mouse	Microsoft Mouse or compatible peripherals
Others	Install most recent service pack and Windows critical updates available on Windows Update website

1.4 SOFTWARE RELEASE AND UPDATES

After the installation it's possible to verify software release both for Client and Database.

Verify software release for communications during assistance or to verify updates availability on www.pego.it website.

See chapter 6 on how to display software release.

2 SOFTWARE INSTALLATION

2.1 COMPLETE INSTALLATION

Insert TeleNET CD-ROM and wait the automatic start of installation process.
If installation does not start automatically please manually double click on Setup.exe file on the main CD-ROM directory.

Complete installation

Select "Setup All" to start installation process. The complete setup installs both client and database in a single process.
Follow the indication until installation completing.

The key allows to cancel installation process.

When installation is finished TeleNET icon is created on Desktop.

2.2 LAN INSTALLATION: SERVER

Insert TeleNET CD-ROM and wait the automatic start of installation process.
If installation does not start automatically please manually double click on Setup.exe file on the main CD-ROM directory.

Server installation

Select "Setup Server" to start installation process. The server setup installs only the database that will include configurations and registered data.
Follow the indication until installation completing

The key allows to cancel installation process.

2.3 LAN INSTALLATION: CLIENT

Insert TeleNET CD-ROM and wait the automatic start of installation process.
If installation does not start automatically please manually double click on Setup.exe file on the main CD-ROM directory.

Client installation

Select "Setup Client" to start installation process. The client setup installs only the client.
Follow the indication until installation completing
On first start of client it will be requested name of server where the database is installed.
The key allows to cancel installation process.

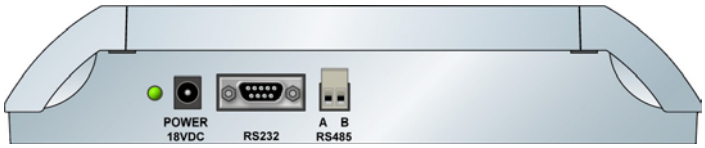
When installation is finished TeleNET icon is created on Desktop.

3 *HARDWARE INSTALLATION*

3.1 TWRS485 INTERFACE

TWRS485 interface is the connecting device between Pego instruments chain and computer. It allows the connection up to 32 instruments. In addition it's possible to connect up to 9 TWMI/O modules (eventual TWMA alarm module included)

Position the interface near the computer and make the electrical connections.



Connections:

1. POWER 18VDC : connect the power supply, provided with the package, to a socket.

2. RS232 : connect, using cable provided with the package, to an RS232 socket on computer. In case only an USB interface is available it's needed to install an USB-232 converter (not included). Verify in " Device Manager " of the operating system (from Control Panel -> Performance and Maintenance -> System -> Hardware ->Device Manager -> Ports (COM & LPT)) the COM number used by interface.

3. RS485 A B: connect line from the instruments. Please refer to instrument user manual to find the connection of lines A and B.

Note: it's possible to order additional TWRS485 interfaces to increase the number of connectable instruments (each interface will add 32 instruments)

For the users who utilise TWRS 485 interface model where power supply for TWM modules is needed (terminals 1-2-3-4 instead A and B) please refer to instrument manual for the connections.

3.2 USB HARDWARE KEY

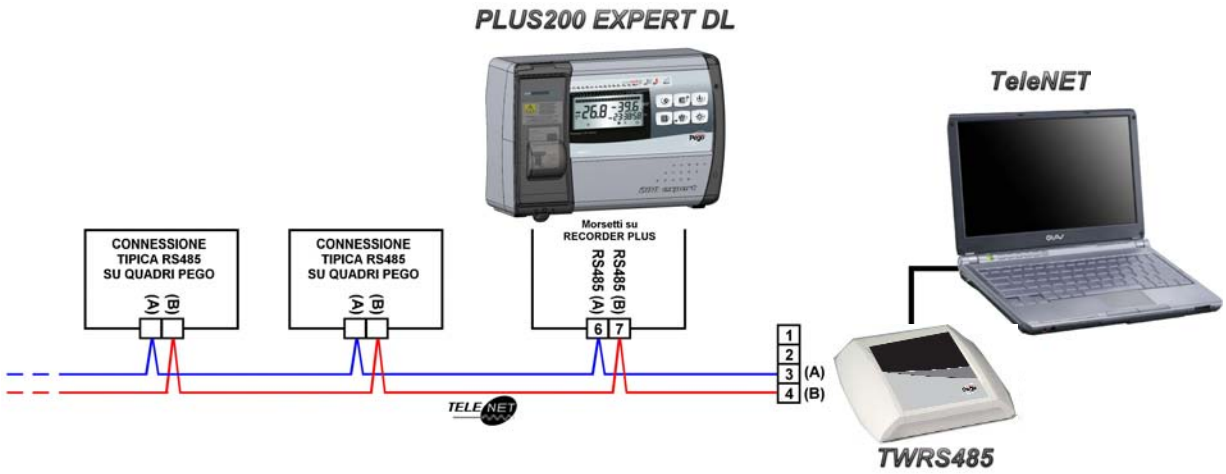
On Client Node, that is the PC where one or more TWRS485 interfaces will be connected with instruments net, is necessary to connect USB hardware protection key provided with package.
The key insertion in one USB free slot can be done also after software installation, but it is necessary for first node and instruments configurations.
In case of a driver installation request, it's enough to indicate installation cd-rom path on the request mask.

NB. The key must keep being inserted on USB port during TeleNET functioning.

3.3 INSTRUMENTS CONNECTIONS

Refer to the manual of each instrument for the connection of RS-485 serial line and configuration of net addresses.
RS-485 line must be done with a connection from the interface to the first instrument, form first to second instrument and so on until the last instruments where the line ends.
Do not make connections with embranchments, y-connection or circle connections..

Connection example:



Maximum net lenght is around 500m
Please use twisted pairs wire suitable for RS485 signal transmission with min. section 0,5 mm^2 (i.e. Belden 8762 cable)
Do not wire together with power cables.

4 ACCESS

4.1 FIRST ACCESS

To open the program use TeleNET icon on the Desktop.

On the access mask insert the following default data:

Login: **adminlogin**
Password:
press the icon

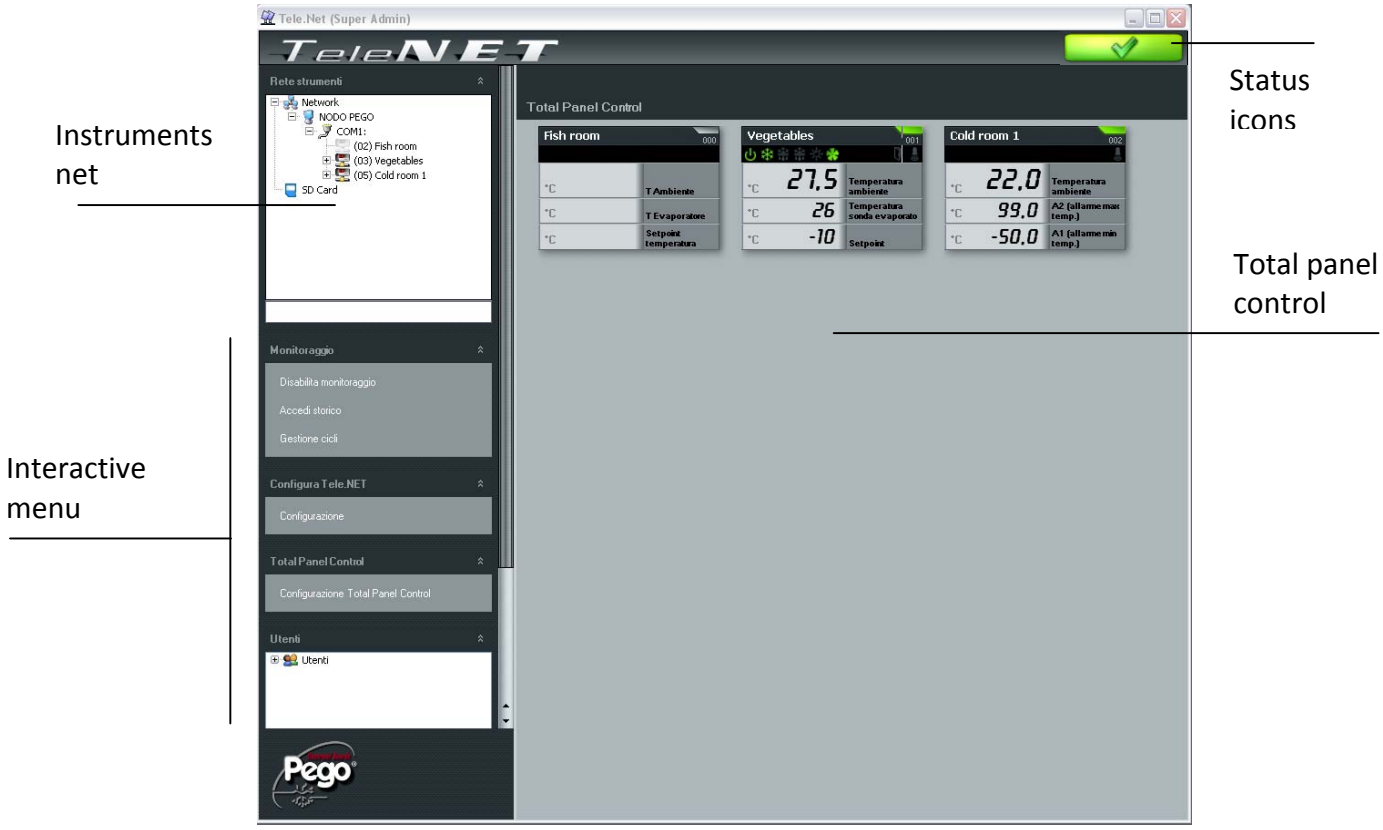
NB: on first access leave the field password blank and proceed pressing the key

Default language is english.
To change language refer to chapter 6 “TeleNET configuration”

5.1 MAIN INTERFACE

The following image shows TeleNET operating interface.

Section on the left is the one with instruments net tree (the Network) and interactive menu for the various configurations.
Section on the right is the operating part of Total Panel Control and windows related to the selected menus



Main menu allows to configure instruments net and users.
The menu is divided in two dedicated menus for the Network or for SD card section

To activate Network menu select Network on the instruments net

Select Network to open the related menu

To activate SD Card menu select SD Card on the instruments Net

Interactive menu

Basing on the selected item on instrument Net, the interactive menu shows the possible selectable options.

5.3 KEYS AND ICONS

Pulsanti operativi utilizzati nelle impostazioni delle varie schede utente, nodo, strumento, ecc.. :

	Enable to modify the field contents		Up
	Save modifications		Scroll up
	Erase element		Down
	Cancel without saving modifications		Scroll down
	Add element		Add
	Open element		Add all
	Exit from the folder		Remove
	Confirmation / command send		Remove all
	Confirm date		Activate / deactivate filter
	Copy		Back to previous window
	Export to Excel		Go to next window
	Cycle stop		Close the tree
	TeleNET e DB release		Expand the tree
	Print		

Icone di stato generale di funzionamento TeleNET:

			Monitoring enabled and no alarms
			Monitoring enabled and alarm present
			Monitoring disabled

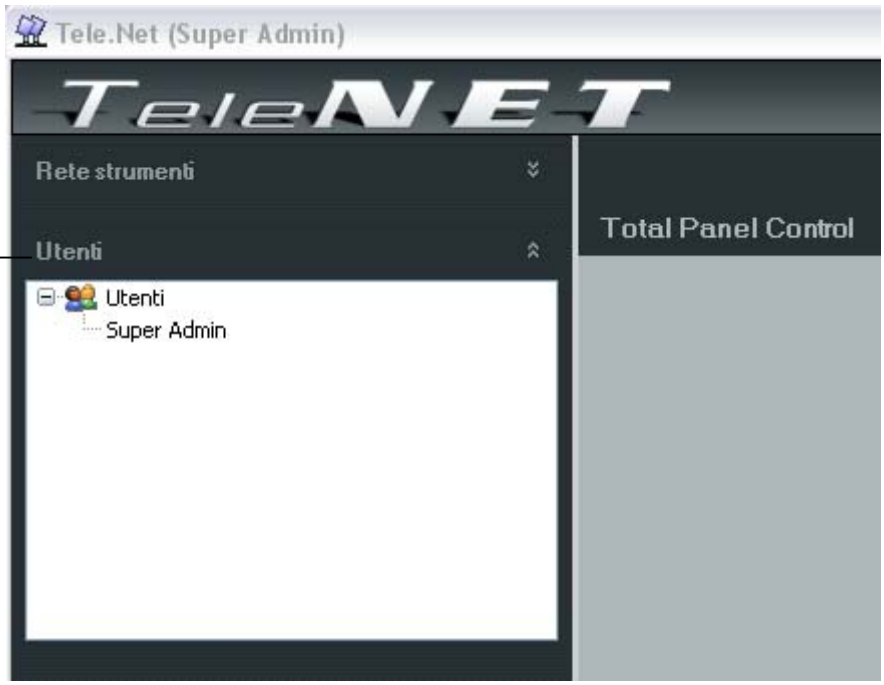
The following icons are used on the instruments net tree to give a first level of informations coming from the devices:

	Monitoring instruments correctly functioning
	Instruments non correctly connected
	Disabled instruments
	Instruments net
	Node
	Serial port (COM)
	Shows presence of alarm on one or more instruments
	Shows presence of an alarm of max. temp. on the instrument (red)
	Shows presence of an alarm of min. temp. on the instrument (blu)

5.4 USERS CONFIGURATION

Users configuration is allowed only to users with ADMINISTRATOR authorization associated. The users with this level of authorization can display the users tree:

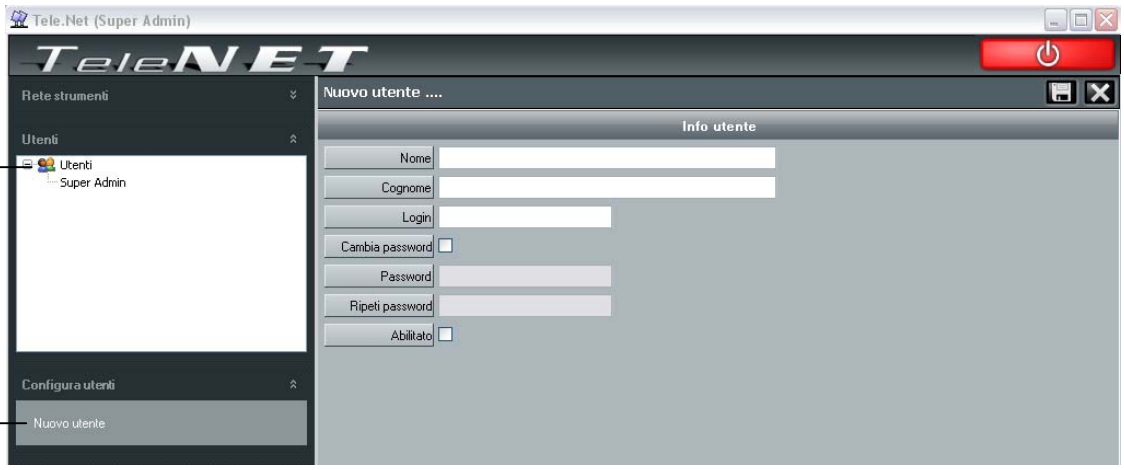
Users



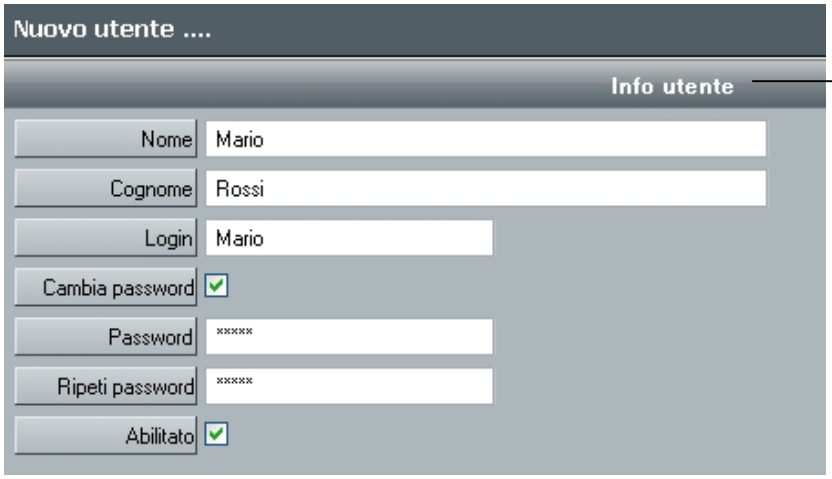
To add a new user select Users and then New user

Users

New user



The user folder is made by two areas: User info and user authorizations



User info

User authorization

Depending on the assigned authorization level the following operations are allowed to the specified user:

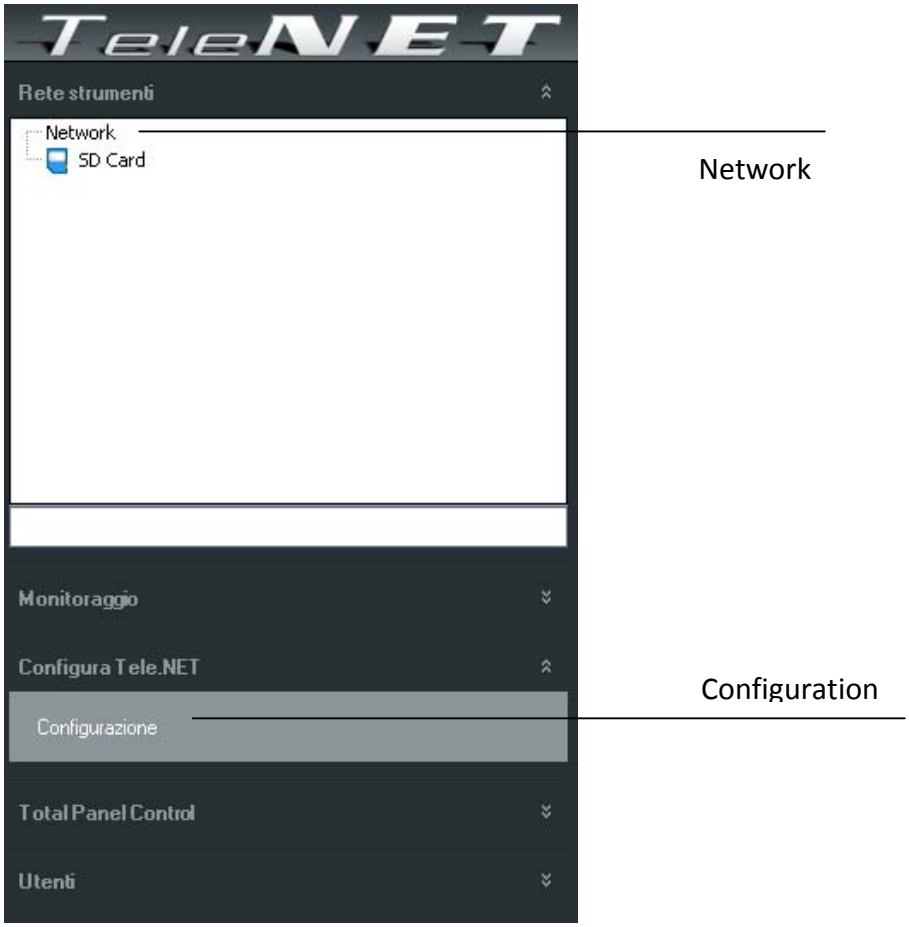
Administrator	Allows users administration
Command	Monitoring and control of the instruments
Nodes configurator	Allows to configure the node and the instruments
Monitoring	Only instruments monitoring

Once the informations are in please click on the icon to save data.

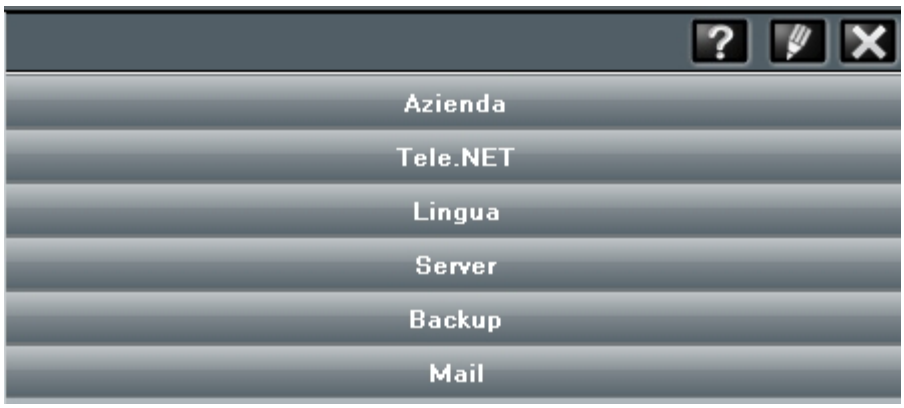
(save or cancel the modifications)

6.1 GENERAL PARAMETERS

Select Network and then Configuration on the Configure TeleNET menu to access the general configuration parameters



It's possible to configure the following parameters:

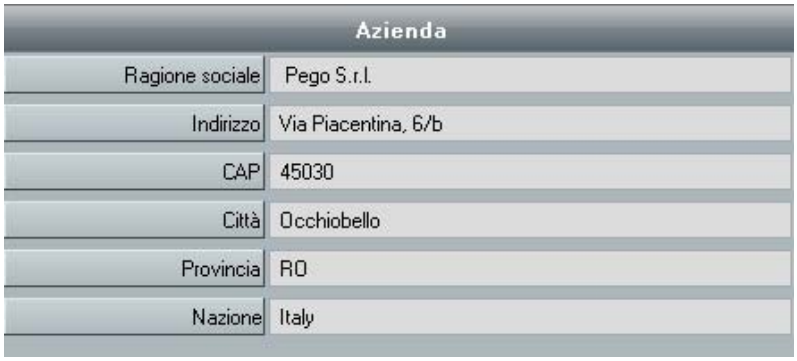


- Company
- Tele.NET
- Language
- Server
- Backup
- Mail

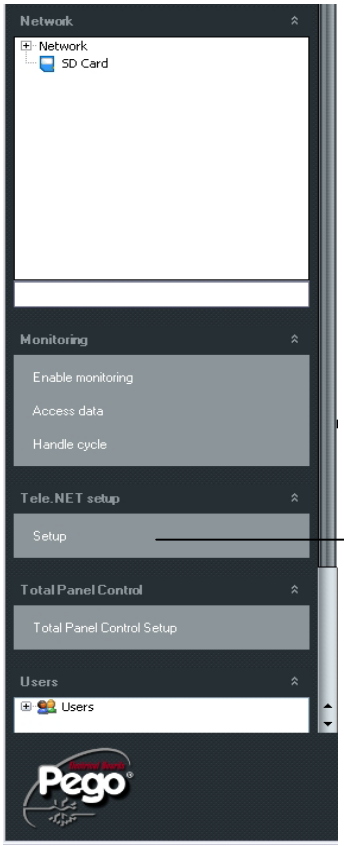
6 TELENET CONFIGURATION

Selecting “?” it's possible to read TeleNET software and database release (to use during assistance call).

Insert the **company details**



Language selection



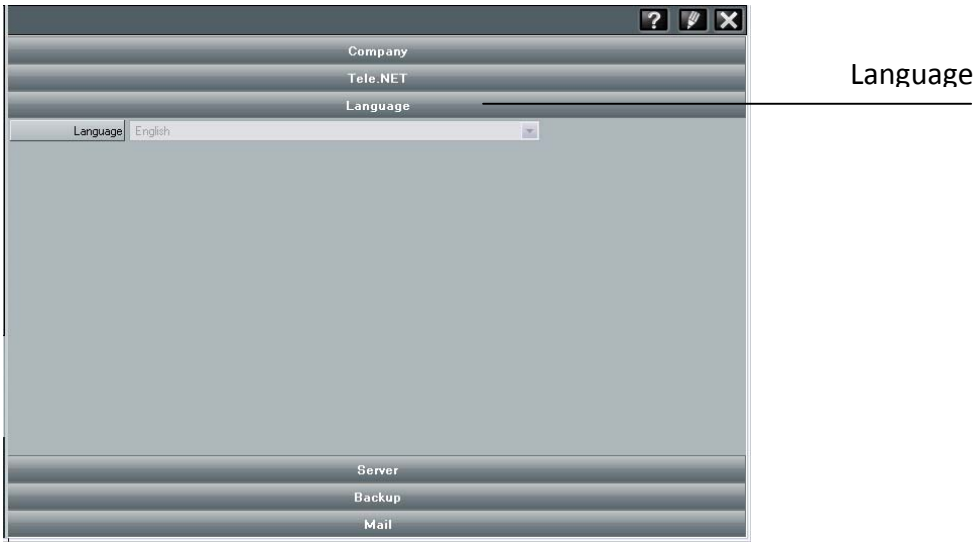
Default language on TeleNET software is english; to change this setting please follow the next steps:

- press key "Setup" on the folder menu "TeleNET setup" on the left side of the program window.

Setup

- Press the icon on the left side of menus, in case the relative sub-menus displaying is hided.

- Select the "Language" menu bar and press the key "edit " .

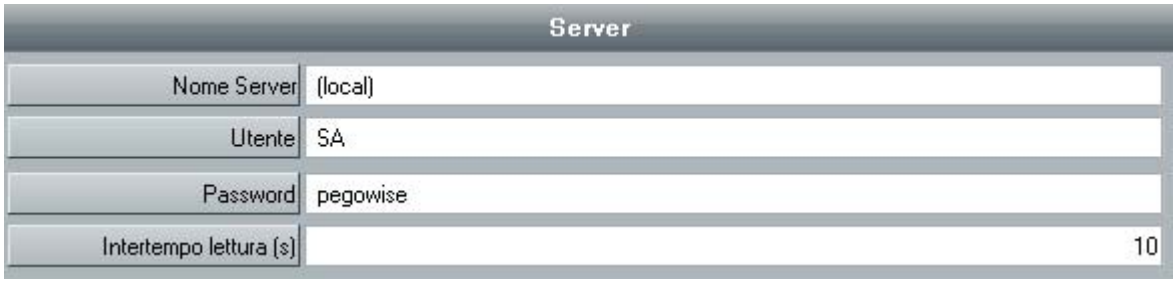


- Select desired language from the menu folder and save new selection by pressing the key "save " .

Exit the TeleNET program and restart it for the modifications to take effect.

Database SQL Server parameters (usually not to be modified)

Note: it could be necessary to modify the password in case SQL server was previously installed with a different password for SA administrator (please contact the system administrator to use the correct password)

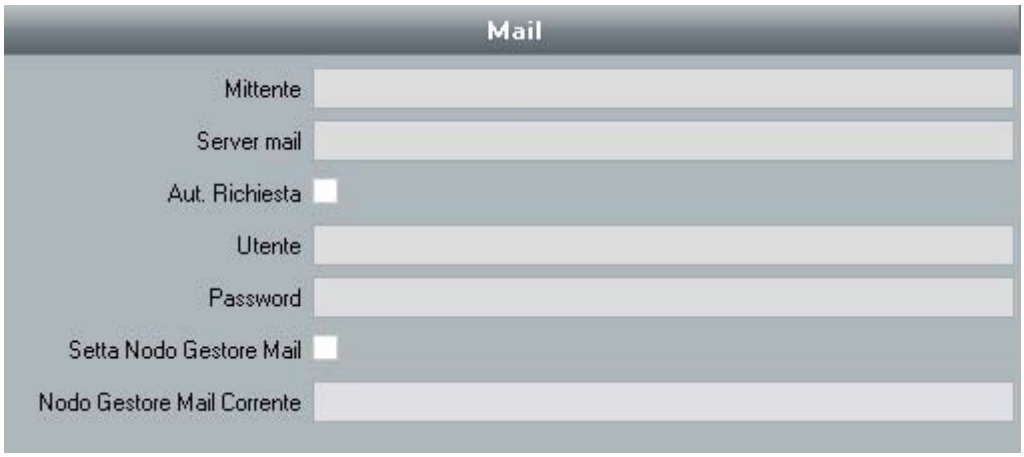


Daily programming of **backup**

Note: don't use spaces into the pathfile

Alarm sending by e-mail service configuration.

Using a mobile phone with e-mail reception enabled is possible to receive alarm notification directly on the phone
Before filling the fields create an e-mail account or use an existing one asking for the configuration informations to the service provider

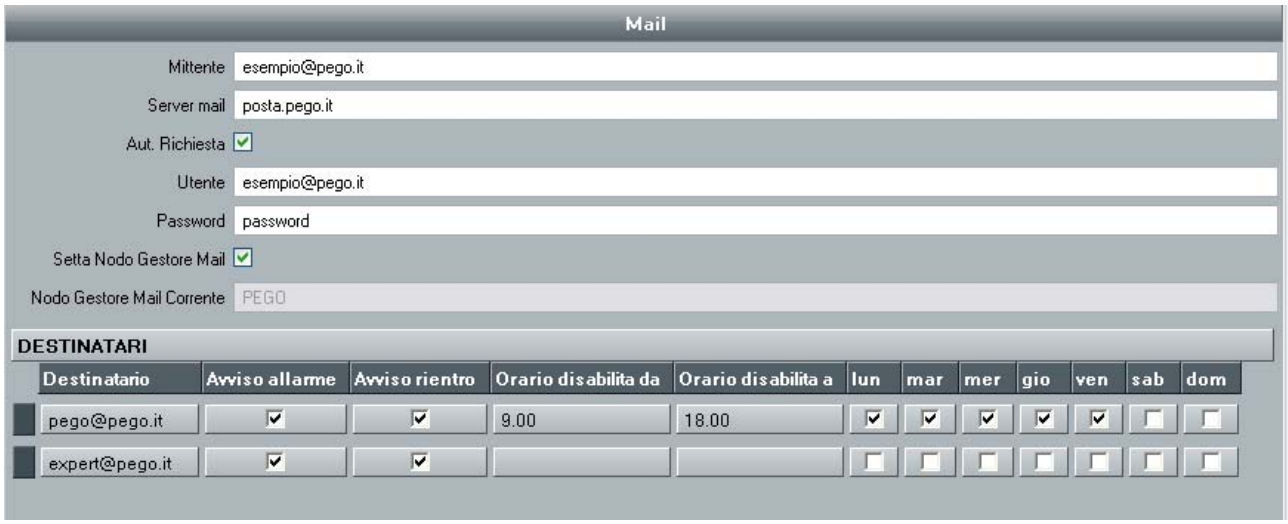


Fields description :

From: fill in with mail account (i.e. example@pego.it) of the sender
Server mail: write server name for outgoing email (SMTP)
Request aut.: specify if it's necessary or not to make the service provider access procedure to SMTP server
User: fill with user mail account example@pego.it (the same used in the "From" field)
Password: password assigned by service provider
Set Mail Handler Node: allows to select the node which will manage the email. In case of more than one node only one will manage the e-mails.
The computer associated to the manager node must have a permanent Internet connection.
It's necessary to create first the node (par. 8.1) before proceeding with the configuration (in case there is chance to save the settings made and modify them later).
Mail Handler Node: shows the chosen node to manage the e-mail service

Once completely filled in the fields save the informations and restart TeleNET for the modifications to take effect.

At next step will be possible to insert the receivers



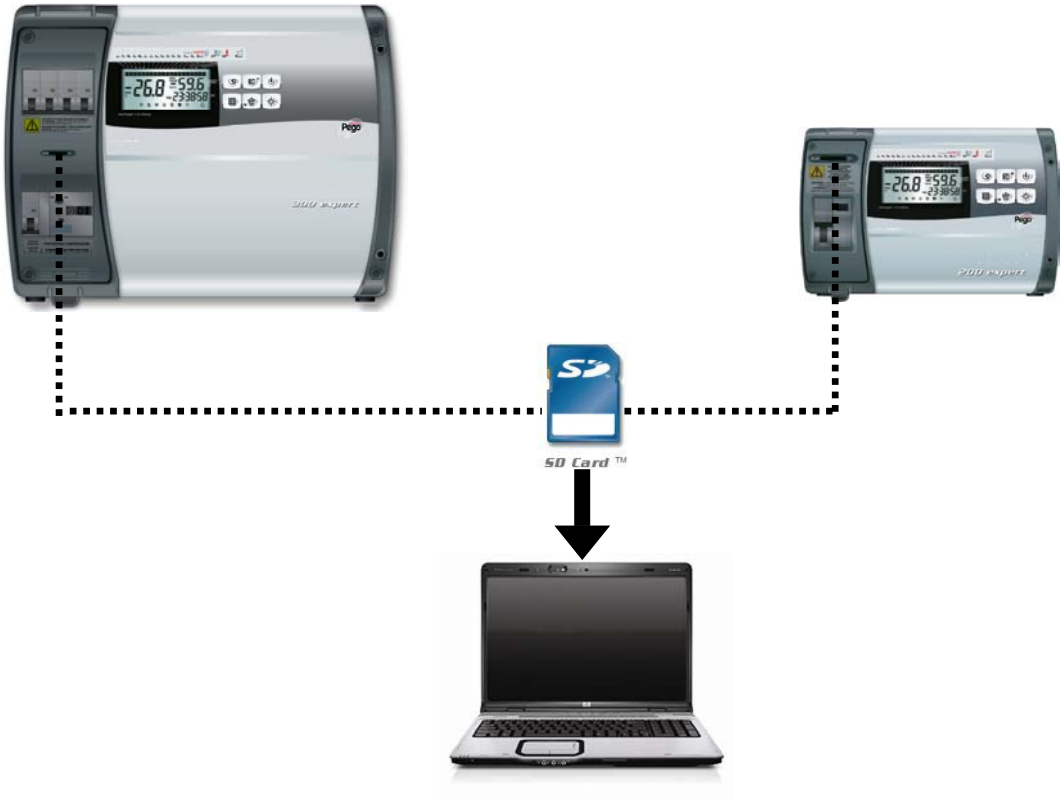
E-mail destination: insert e-mail address of the receiver of alarm warnings (several receivers can be added)
Alarm start alert: flag the square to send the alarm warning
Alarm stop alert: flag the square to send the alarm stop warning
Exclusion hour start: start of timeframe where no alarms are sent
Exclusion hour stop: start of timeframe where no alarms are sent
mon...sun: shows the days when the exclusion alarm sending range is enabled

We suggest, once configured the service, to make some test of mail sending simulating some alarms.

7 SECURE DIGITAL CONTROL

7.1 INTRODUCTION

TeleNET also allows saving and consultation of stored data on PEGO panel PLUS EXPERT series. This functionality is available even when hardware protection key is not present or connected. Data transfer from panels to the software is possible by using of a Secure digital memory card.



CHARACTERISTICS:

- TeleNET SD software program present, on CD-ROM, inside each panel package of PLUS EXPERT series.
- Use of Secure Digital memory cards for data transfer.
- Unique instrument id by serial number.
- Easy and intuitive data download.
- Customized graphs with comparision of different parameters.
- Registration and alarms consultation.

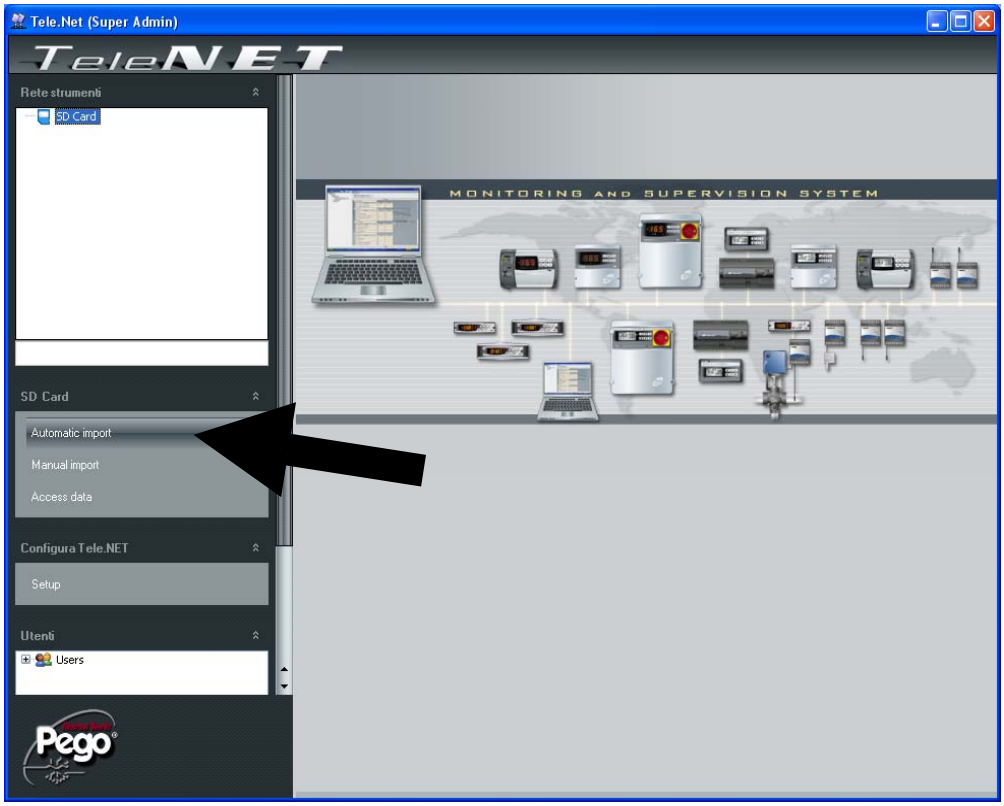
7.2 DATA IMPORT

Below are indicated steps to import data download on SD memory card from PLUS EXPERT series panel.

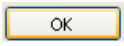
The way below indicated is not the only one, but it's the more simple and complete one.

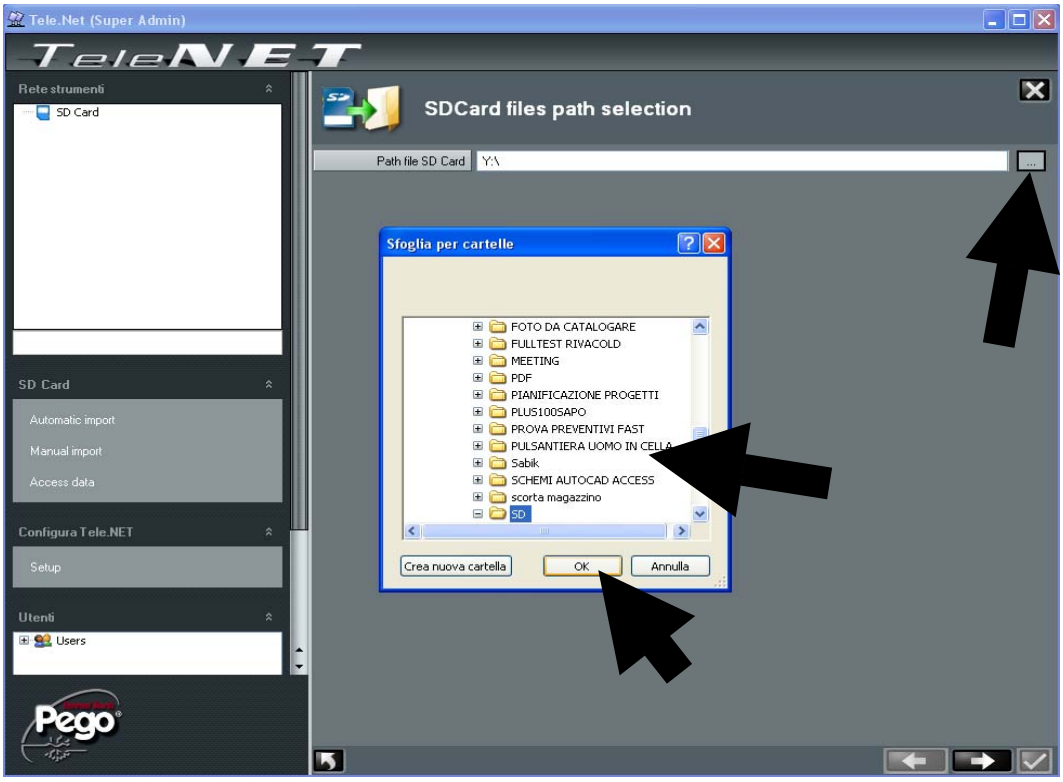
Press key "Automatic Import" on the folder menu "SD Card" available on the left side of the window.

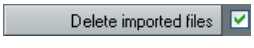
Press symbol on the right of folder menu in case displaying of the items is hided.



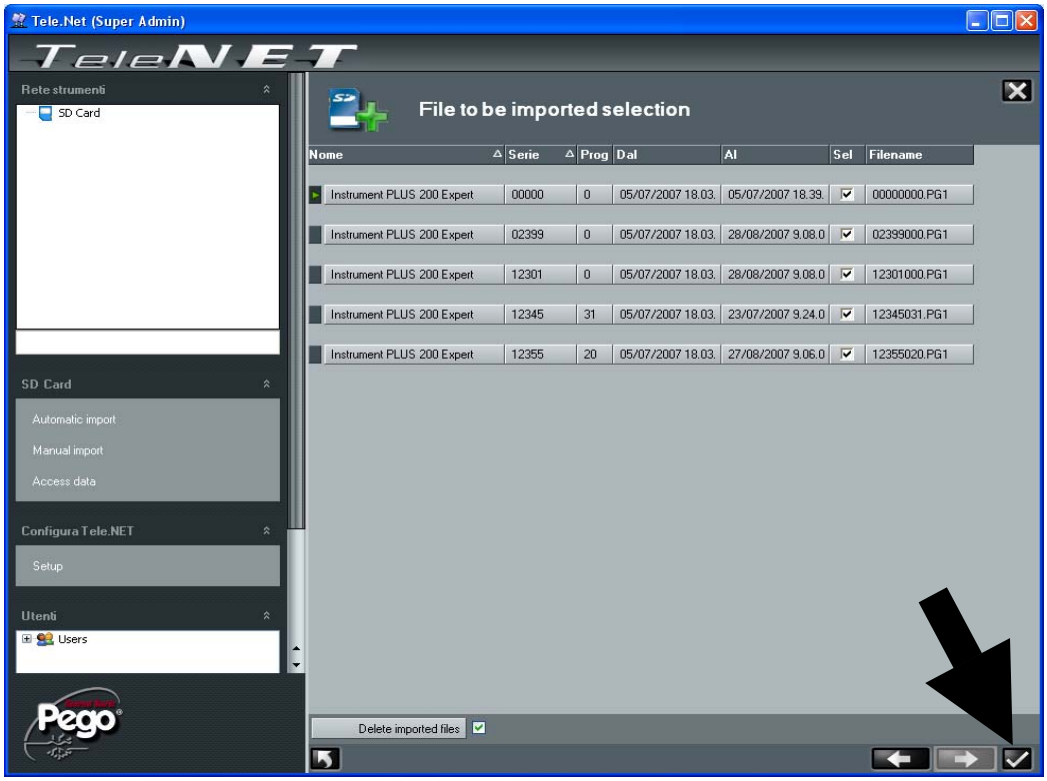
7 SECURE DIGITAL CONTROL

- Insert path of SD card pressing the key .
- Once selected the path confirm with the key  .
- Press the key to proceed on the reading of data contained on SD.



- Now it's showed list of last saved data related to each panel (identified by serial number) present on SD.
- The selection flag allows to not import data related to that specified instrument if not selected.
- By default files, once imported, are automatically deleted from SD to avoid its overflow during the time. Deselect the flag 

in case it's needed to exclude this option.
- The key allows to cancel the import operation while key go back to previous page.
- Press the key to confirm and start data import process.

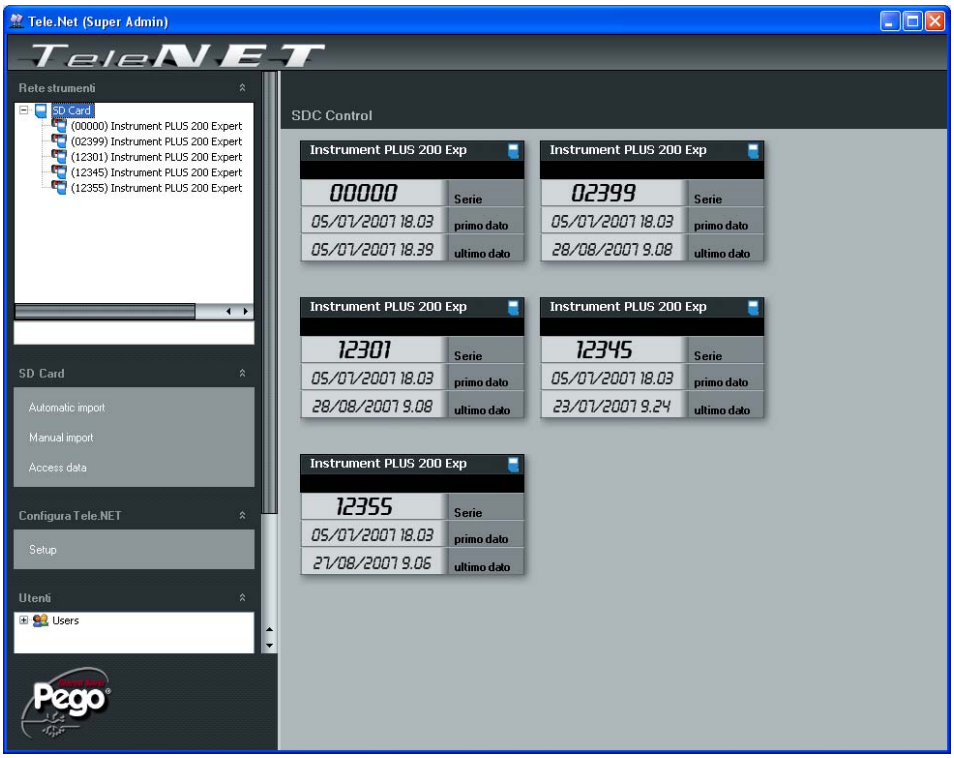


- During the import the status is displayed by a progressive bar.
- At the end of import a window shows that operation is finished.
- Confirm with the key OK.

7.3 SDC CONTROL

In SDC Control the Plus EXPERT panel series are shown each one identified by their UNIVOCAL serial number.

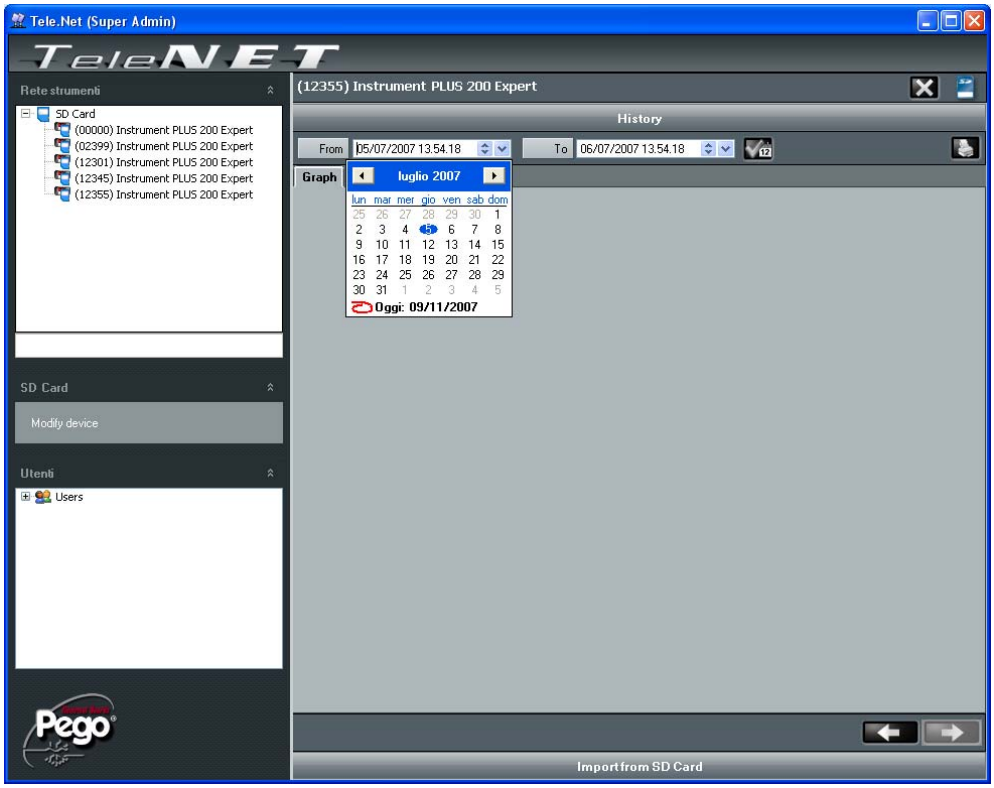
Moreover are indicated the first and last temperature data existing on the database related to the instrument to verify the updating status.



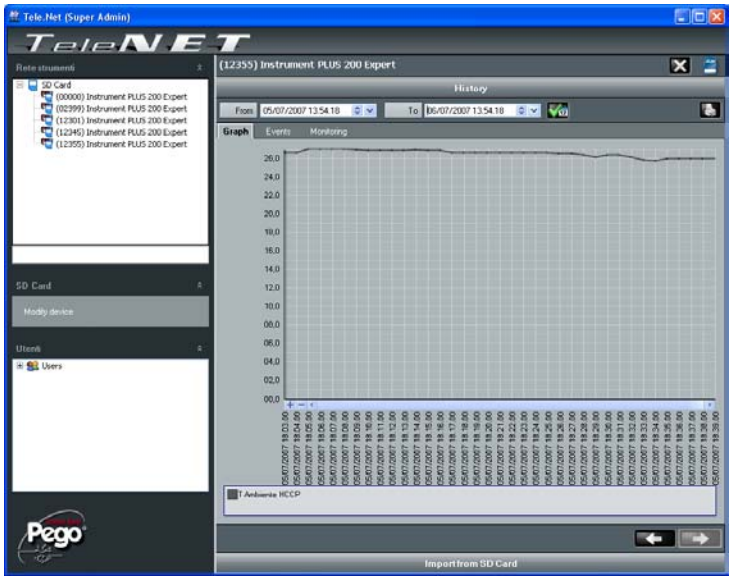
> Double-clicking on the instrument from SDC Control window allows it to enters on the history of instrument.

Select the period whereof it's needed to look at the history and confirm with the key .

7.4 MANAGEMENT AND GRAPHS



- Selecting the item "Graph" it's possible to see the graph of the selected period; on "Events" there are shown registered alarms and on "Monitoring" the registered temperature in a table.
- The key allows printing of selected data.



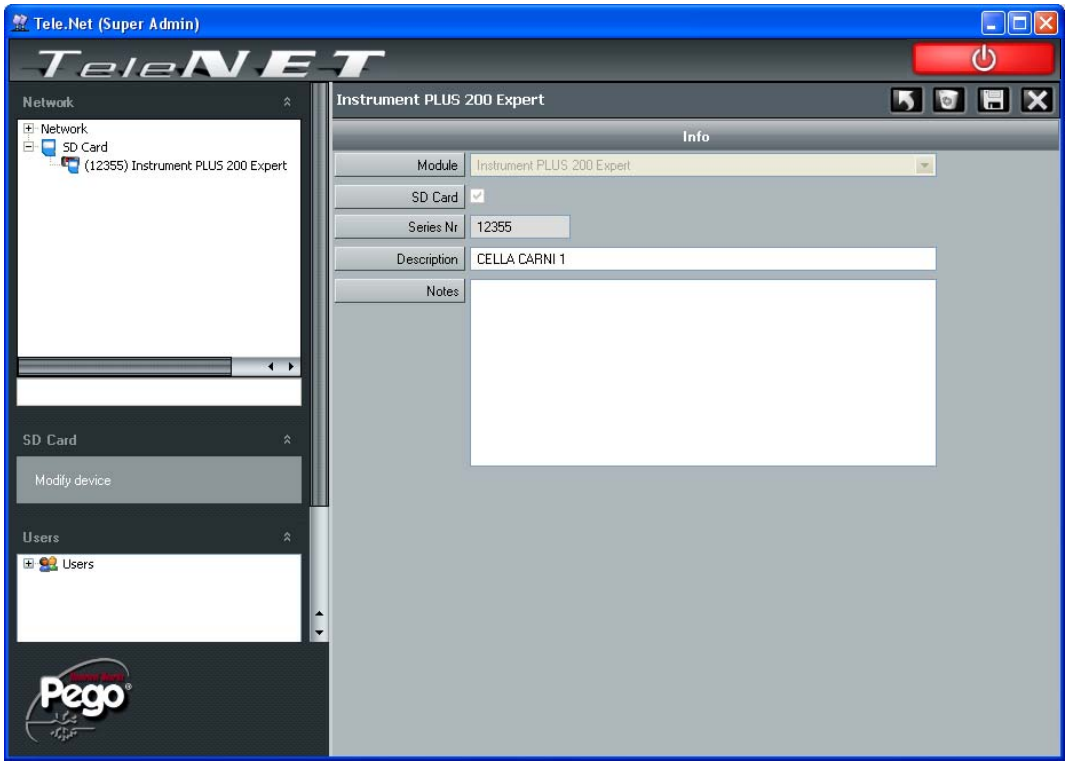
For each instrument is possible to personalize the name in order to simplify its identification.

- Once selected the desired instruments from "Instruments net" tree ("Network"), press the key "Modify Device" o nthe folder menu "SD Card" available on the left side.

  Press the symbol on the right of folder menu in case displaying of the items is hided.

- Press the key "Edit" . and modify instrument name.

Save the modifications pressing the key "Save" .

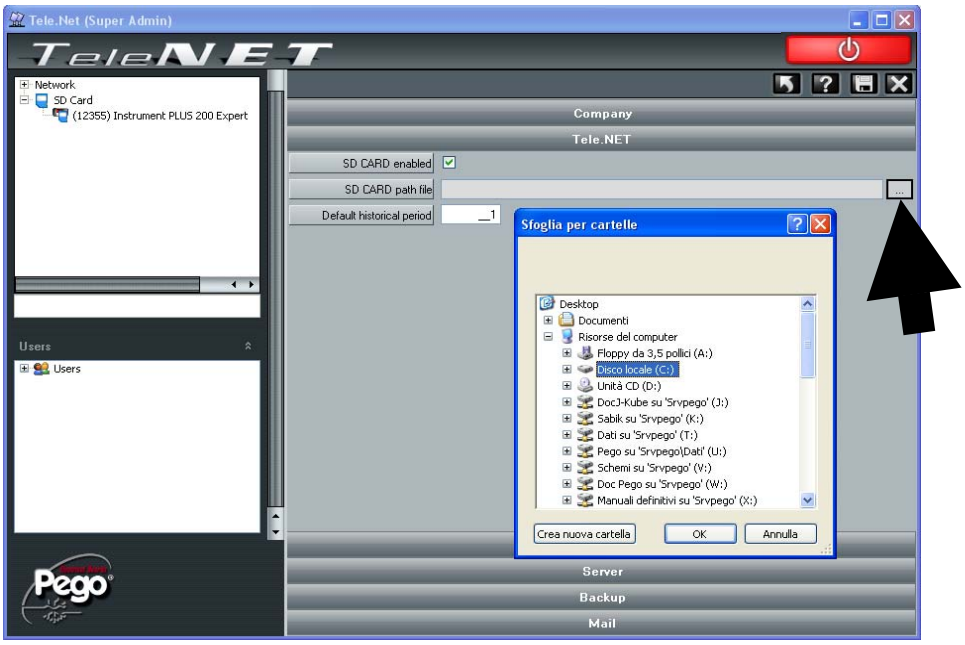


To avoid insertion of SD path on every import operation it's possible to set a default path in the following way.

- press key "Setup" on the folder menu "Tele.NET setup" available on the left side of the window.

  Press the symbol on the right of folder menu in case displaying of the items is hided.
- Select menu bar "Tele.NET" and press the key "Edit" .
- Insert SD card path pressing the key .
- Once selected the path confirm with the key OK.
- Select the desired language from folder menu and save the new setting pressing key "Save" .

Exit from TeleNET program and then restart it for the modifications to take effect

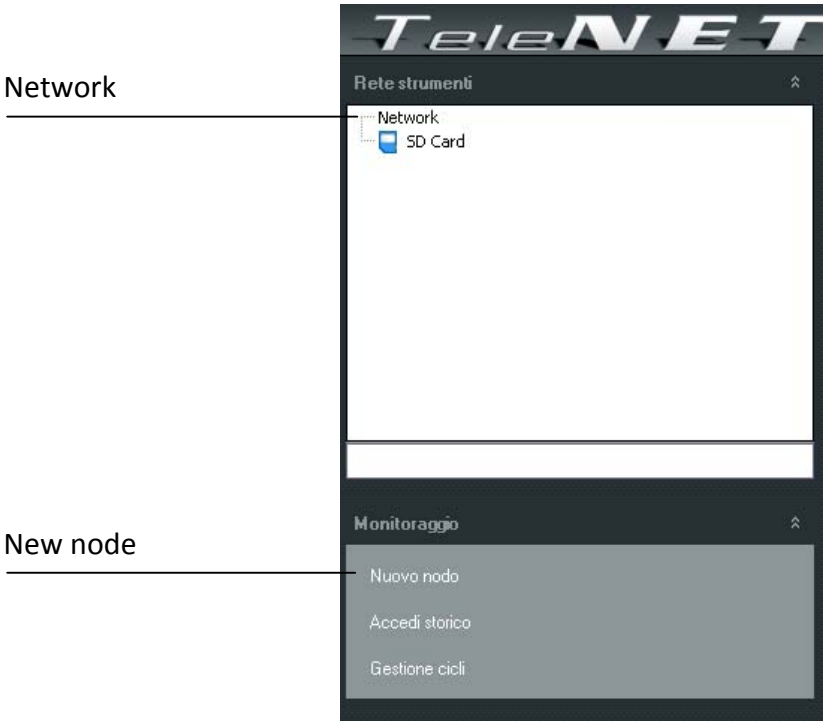


8.1 NODE CONFIGURATION

8 NET CONFIGURATION

First step is the instrument network and node creation.
The node identifies computer where one or more TWRS485 interfaces will be connected.

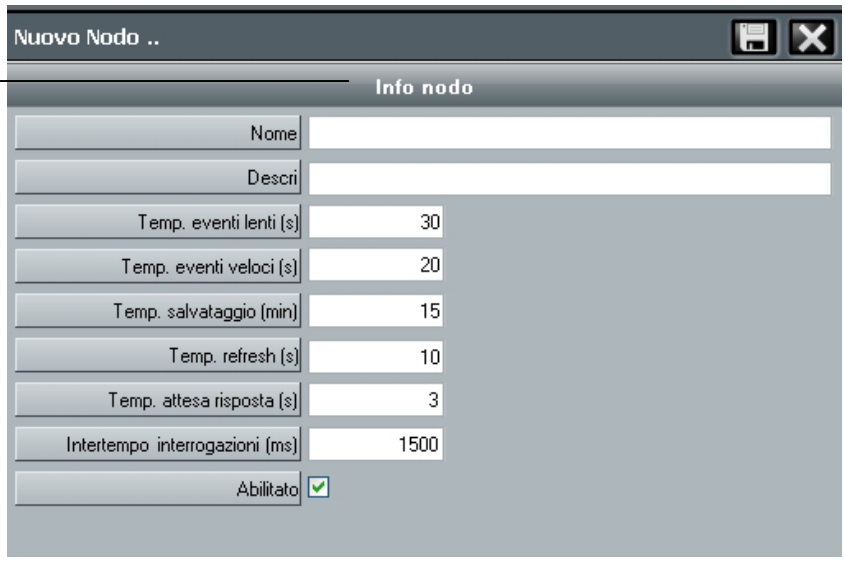
Select *Network* and then *New node*



Node configuration indicates the timing whereby node is polling the instruments, saving data on database, managing alarms.

Node configuration is divided in two sections: Node info and Alarms

Node info

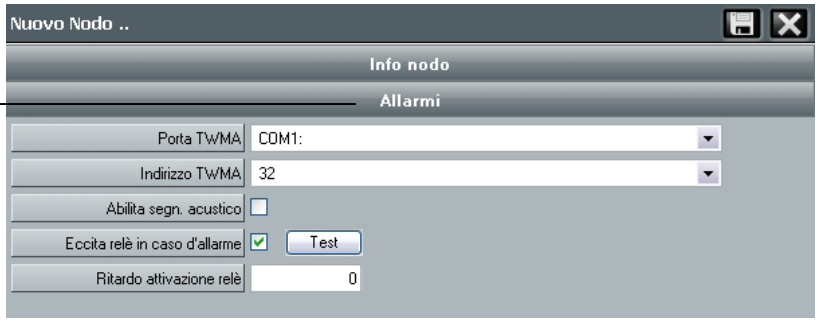


Field description:

- **Name**: node name (it will be shown on the network tree)
- **Description**: node internal description
- **Slow events time**: refresh range of processes not directly linked to the monitoring
- **Fast events time**: interval in seconds between a monitoring cycle and the next one.
- **Saving time**: minutes passed between two monitoring saving of the instruments physically connected to the node;
- **Refresh time**: seconds passed between two monitoring data refresh of the instruments physically connected to the node, included into database;
- **Reply wait time**: seconds waited for the answer to a request sent to an instruments physically connected to the node;
- **Polling lapse (ms)**: interval between two consecutive instruments polling
- **Enabled**: flag it to enable node

8 NET CONFIGURATION

Alarms



In this section TWMA module (if present) is being configurated for the alarm relay activation

Field description:

- **TWMA Port**: serial port where is connected the TWRS485 interface (which TWMA is linked)
- **TWMA address**: TWMA address is generated by dip switches on the module (add 32 to the dip switch selected address);
- **Buzzer enable**: enable PC internal beep in case of alarm activation
- **Excites relay in event of alarm**: flag here to enable TWMA relay activation. With the TEST key is possible to simulate an alarm intervention and verify correct relay functioning.
- **Relay activation delay**: delay in minutes between an alarm signalling on TeleNET and the relay activation on TWMA.

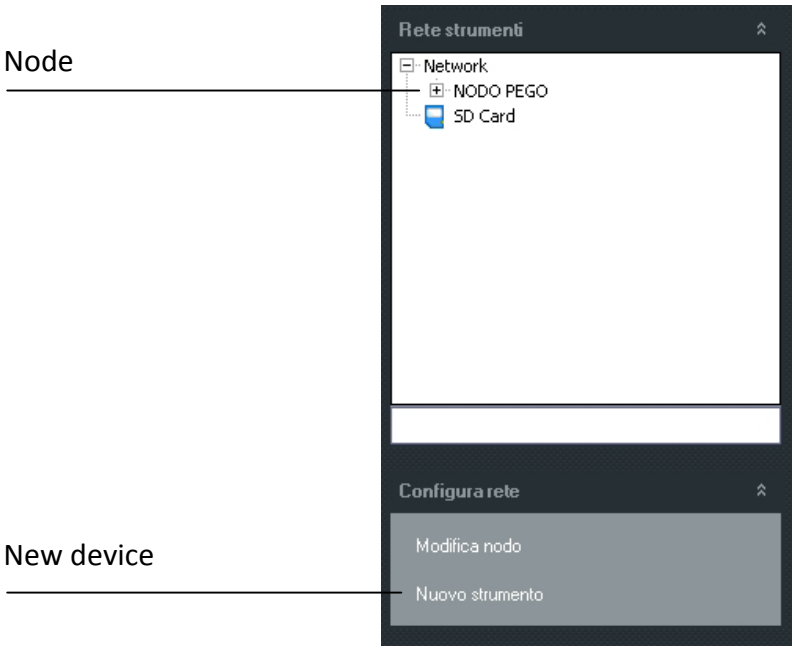
At the end of settings please save the informations.
It will be request to restart the program

Afterwards it will be possible to modify node informations selecting it and clicking on "Modify node"

9 DEVICE CONFIGURATION

9.1 NEW DEVICE

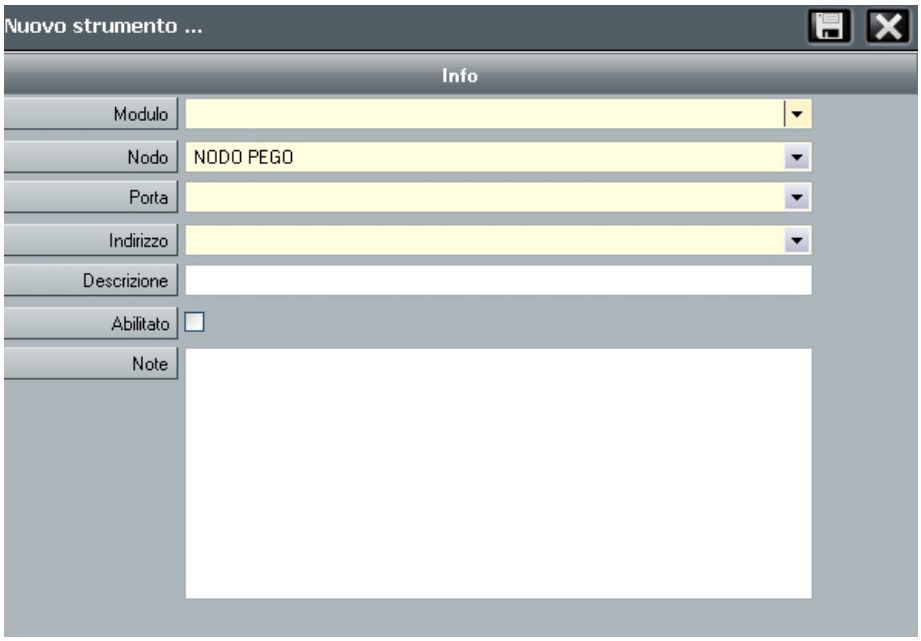
To insert a new device on monitoring system, select the node (on the example NODO PEGO) and afterwards select *New device*



9 DEVICE CONFIGURATION

On working area of main interface will be displayed the folder containing informations related to the new device. This folder menu is divided in two areas:

1. Info area allows to configure the connected device.



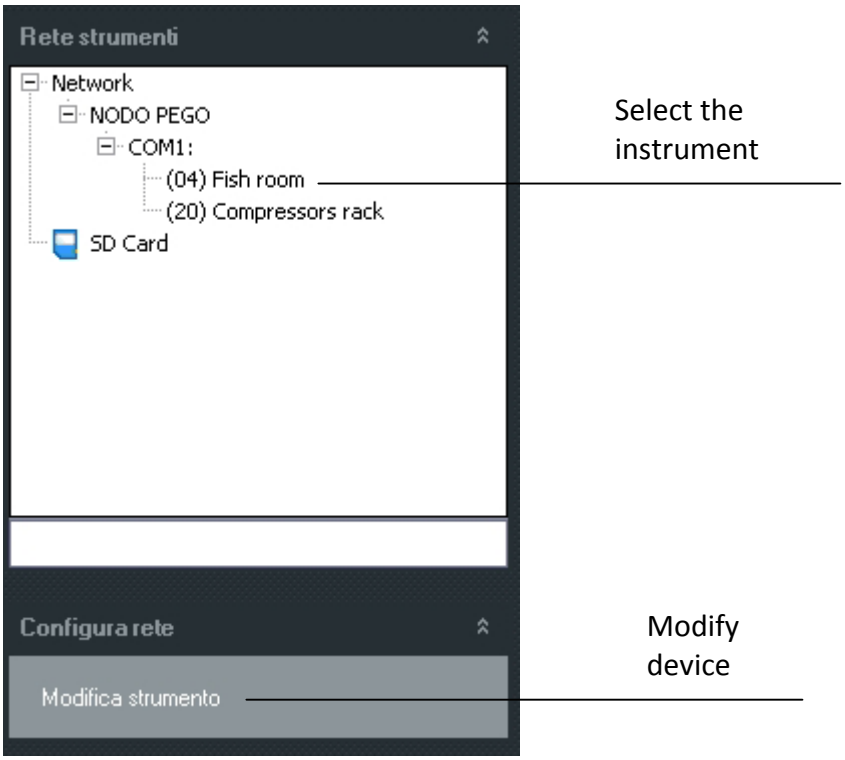
Field meaning:

a. **Module**: select device type;
b. **Node:** indication of node where device is physically connected (by default it's the selected node on instruments tree and it cannot be modified);
c. **Port:** serial port where TWRS485 interface is physically connected;
d. **Address:** device address that can be a value between 0 and 31. In case the instrument is a TWMIO, the address can be a value between 32 and 40;
e. **Description:** description of device shown on the instruments tree;
f. **Enabled:** flag here to enable the device to monitoring. If it's chosen to not use the instrument it could be disabled. Disabling the device it's possible to exclude it from the monitoring and keep the configurations ready for a future re-enabling.

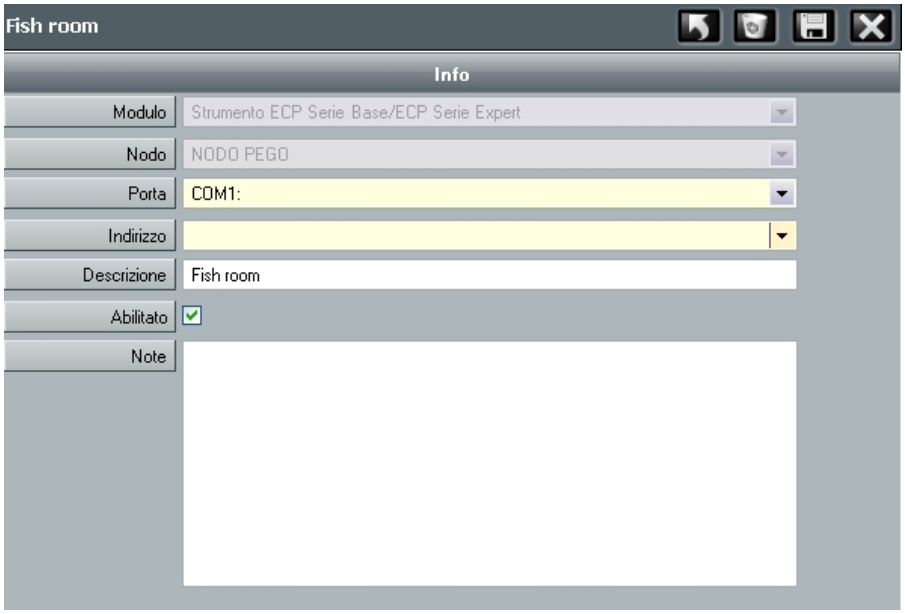
2. Alarm – no link area, containing informations related to alarm relay excites time following a no-link situation regarding the instrument

9.2 MODIFY DEVICE

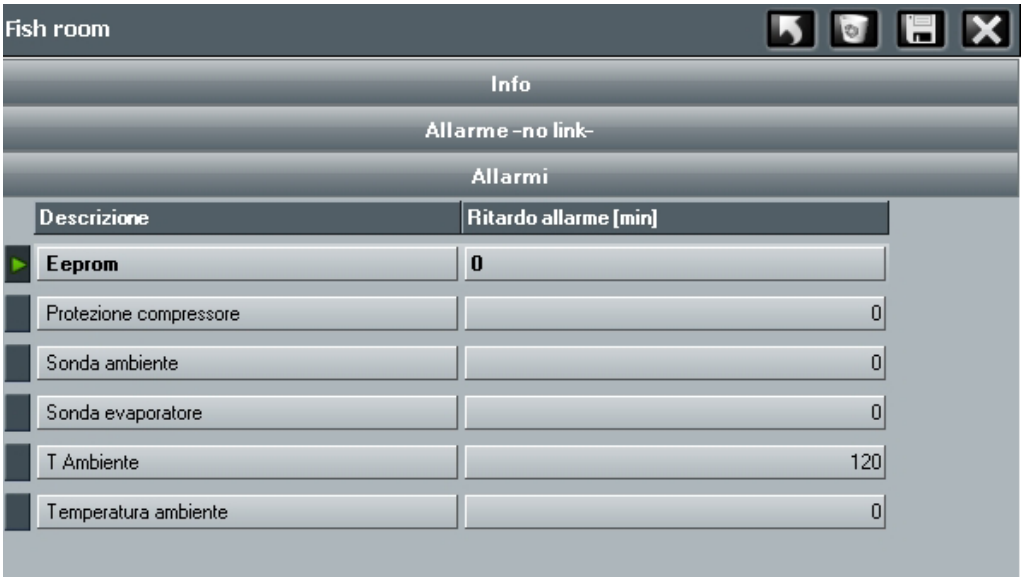
To modify a device, please select it from the instruments tree:



In the working area of main interface it will be shown the folder with informations related to the device (fields Module and Node are disabled).



On Alarms area are indicated timing related to software alarms activation following the persistence of a defined alarm situation.
Alarms area changes depending on instrument type and contains specific alarms for a particular device:



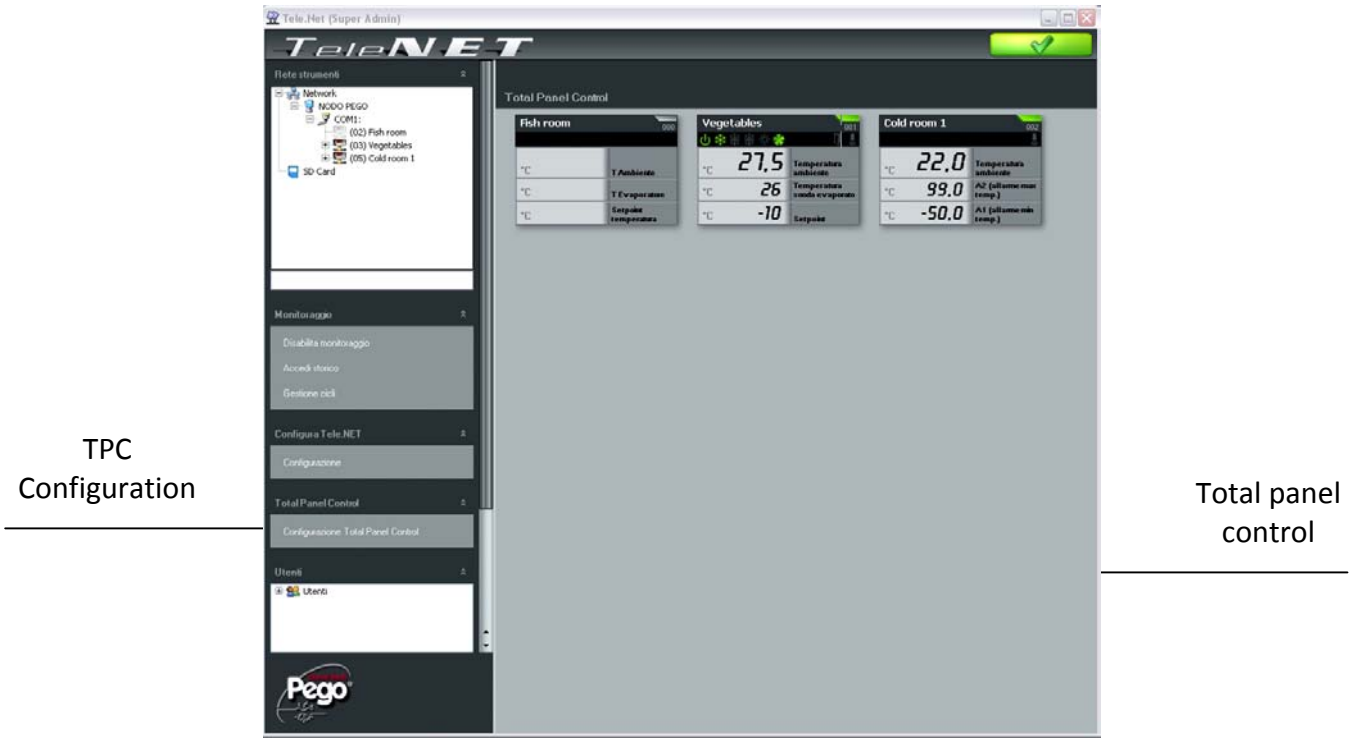
Device deletion:
To delete a device it's necessary to disable the instrument (remove flag from "Enabled" field and save the information).

After that the device can be deleted clicking on the waste icon

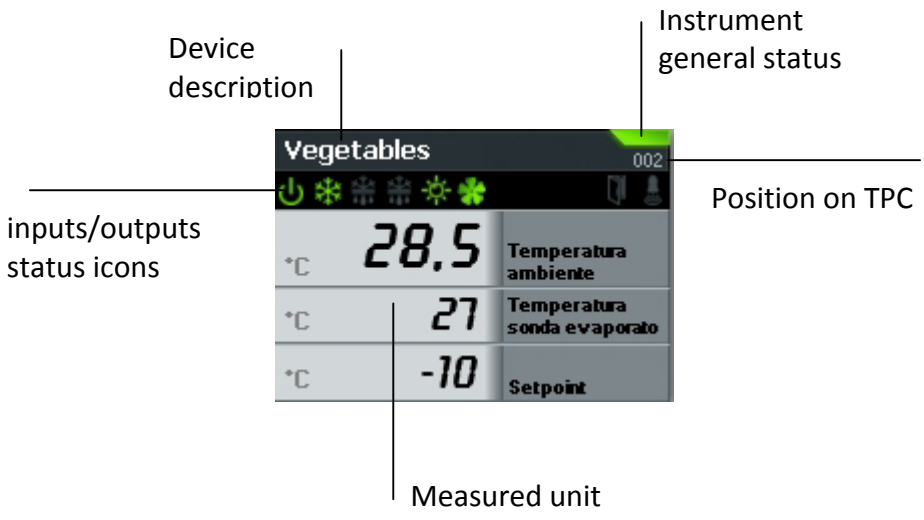
Warning: deletion of a device entails database elimination of all its registrations. A second safety message will ask confirmation of device deletion.

10.1 TPC (TOTAL PANEL CONTROL) CONFIGURATION

Total Panel Control is the working area where the instruments are shown with main informations related to the available measure units, status of main inputs and outputs, and to disabled, normal, cycling or alarm status



Instrument representation on Total Panel Control



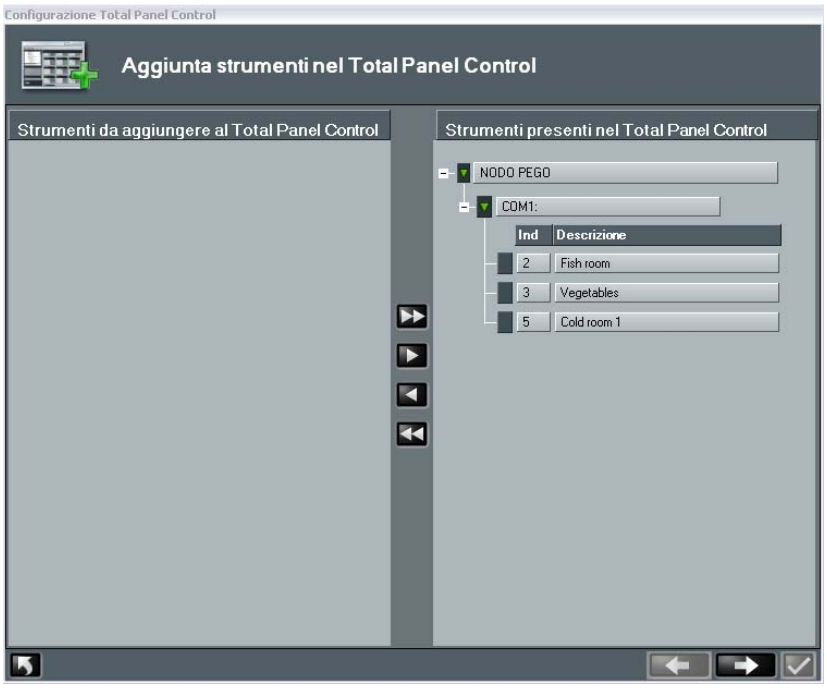
Device general status icons

no icona	monitoring disabled
grey	instruments disabled
green	monitoring enabled and device active
yellow	pre-alarm
red	alarm
blue	automatic cycle in progress

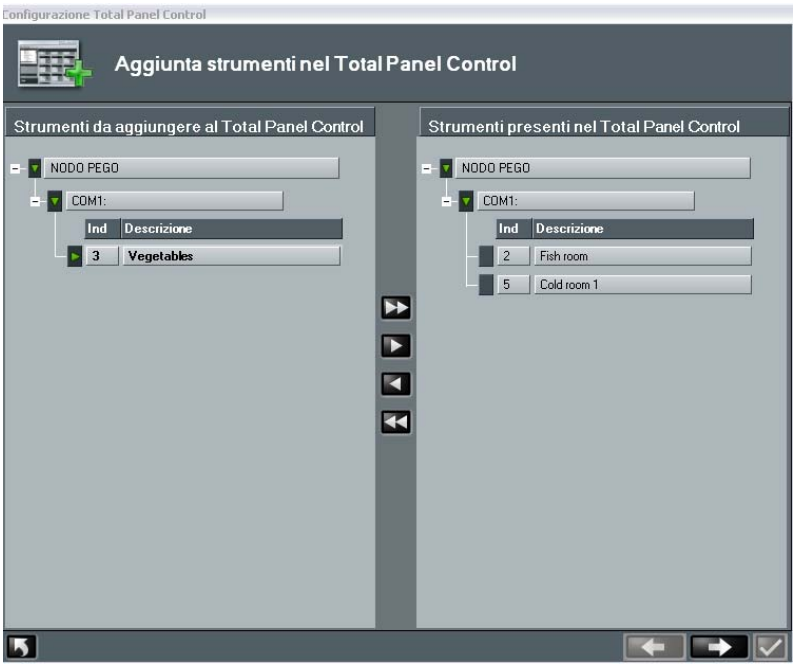
10 TPC CONFIGURATION

From main menu Total Panel Control can be configured. TPC configuration allows to organize the instruments choosing the order of appearance, if they can be displayed and which physical units to show.

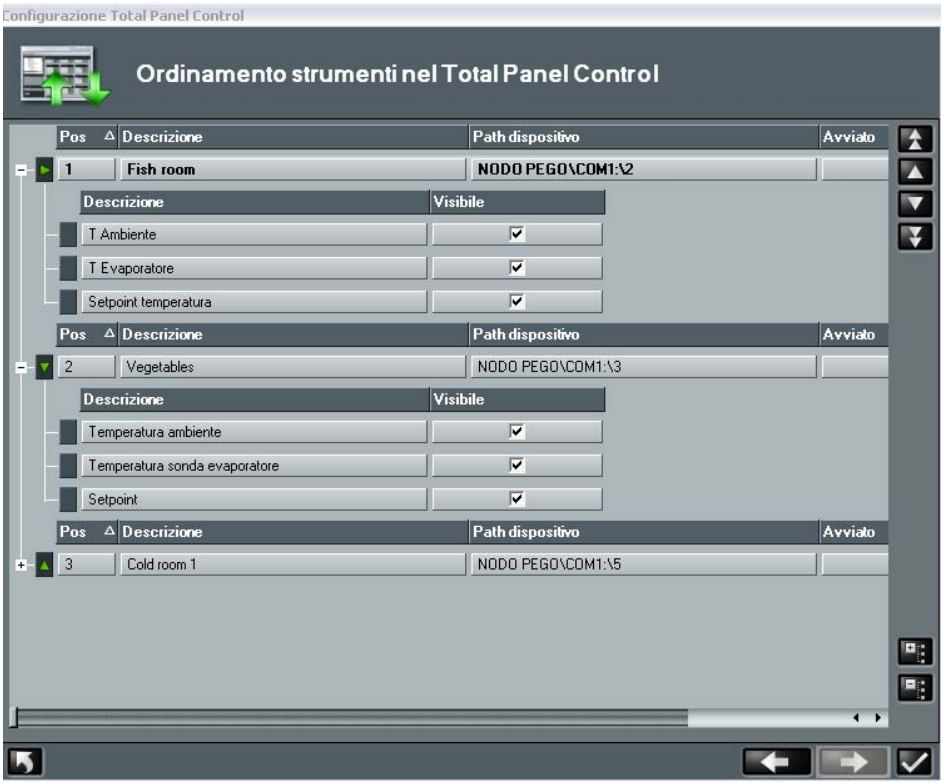
First step is to add and delete instruments on TPC.
select the desired instrument and use the scrolling keys in the middle of the two sections



In this example one instrument was deleted from TPC



On the next section can be chosen the measure unit to be shown for each device and move the order of appearance selecting the instrument and using the scrolling arrows on the upper left side



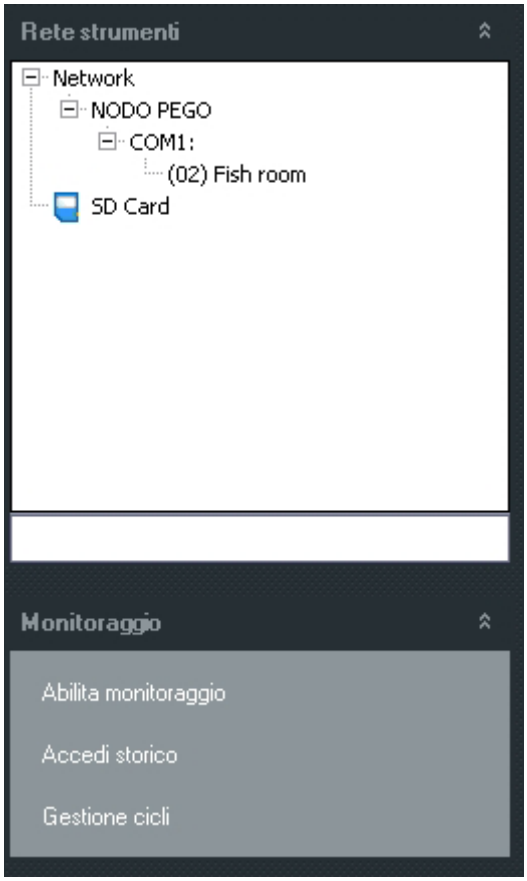
At the end of configuration confirm with the key

11 MONITORING

11.1 MONITORING ENABLE

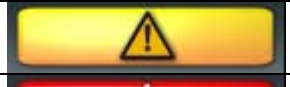
Selecting Network the menu below is activated:

1. Enable monitoring;
2. Access history
3. Cycles management.



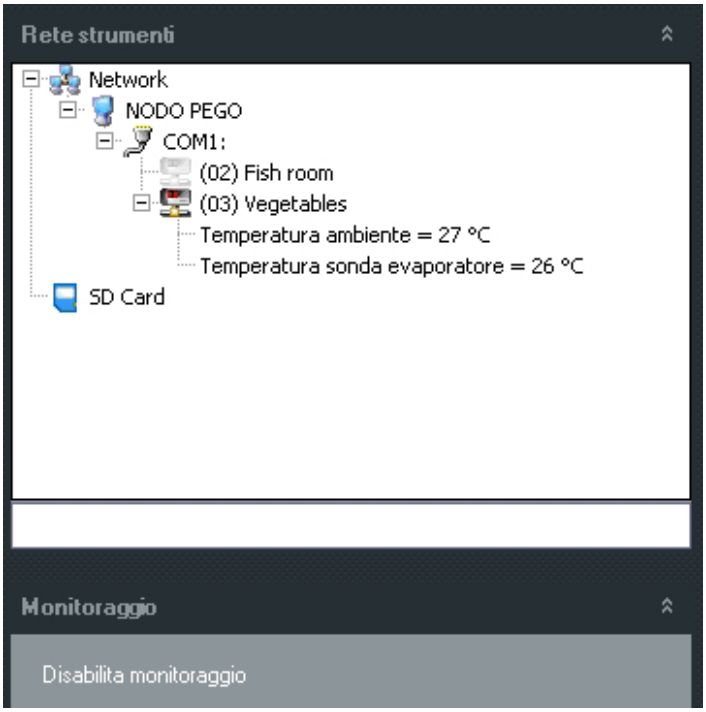
"Enable monitoring" command on the menu above shown, enable TeleNET to monitor the instruments physically connected to the node by serial interface.
After monitoring activation, on the menu above shown "Enable monitoring" command become "Disable monitoring".

TeleNET monitoring activity stops selecting the command Disable monitoring
On the upper right side there are icons of general status

	Monitoring enabled and no alarms
	Monitoring enabled and alarm present
	Monitoring disabled

11.2 MONITORING READING

During monitoring it's possible to visualize on network tree all connected devices and a summary of instrument status and values of the measured units.



Summary of network tree icons

	Device monitoring and correctly functioning
	Device not correctly connected
	Device disabled
	Network of instruments
	Node
	Serial port (COM)
	Shows presence of alarm on one or more instruments
	Shows presence of an alarm of max. temp. on the instrument (red)
	Shows presence of an alarm of min. temp. on the instrument (blu)

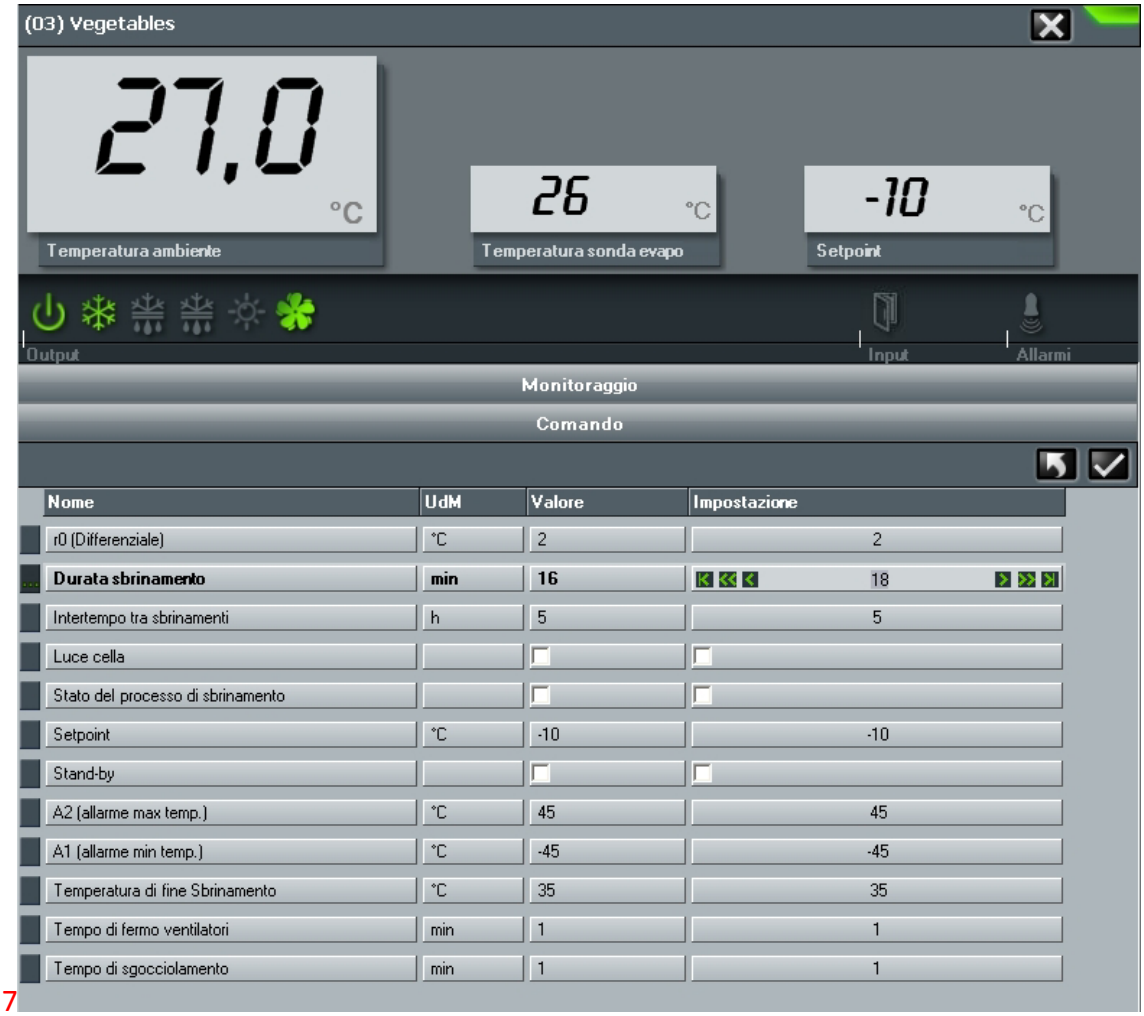
11.3 DEVICE PROPERTIES

If the user needs to have the detail of all the informations from the instrument, selecting the device on the tree, the device properties folder is shown.

Device properties folder allows user to arrange informations for every column on the folder; this can be done by clicking on the column title where it's needed to make the sorting.

11.4 DEVICE PROGRAMMING

TeleNET allows user to send a command to the device modifying the configuration (i.e. min. and/or max. temperature limit, stand-by, defrost activation, ...).
To send a command to instruments, access Command area on the device properties folder, where are shown the configuration informations that can be modified.
In particular the second-last column contains current value and last one contains the desired value to set for the device. At the end of this desired values setting, sending to the instruments can be done clicking key "Confirm". The key "Cancel" reset the settings to current values of the instrument.

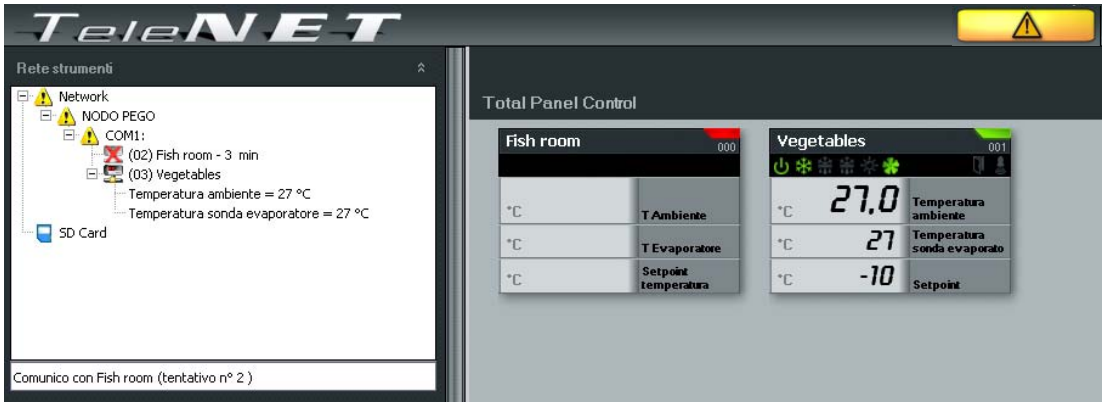


11.5 ALARMS

TeleNET gives various ways to signal the alarms coming from the devices during monitoring.

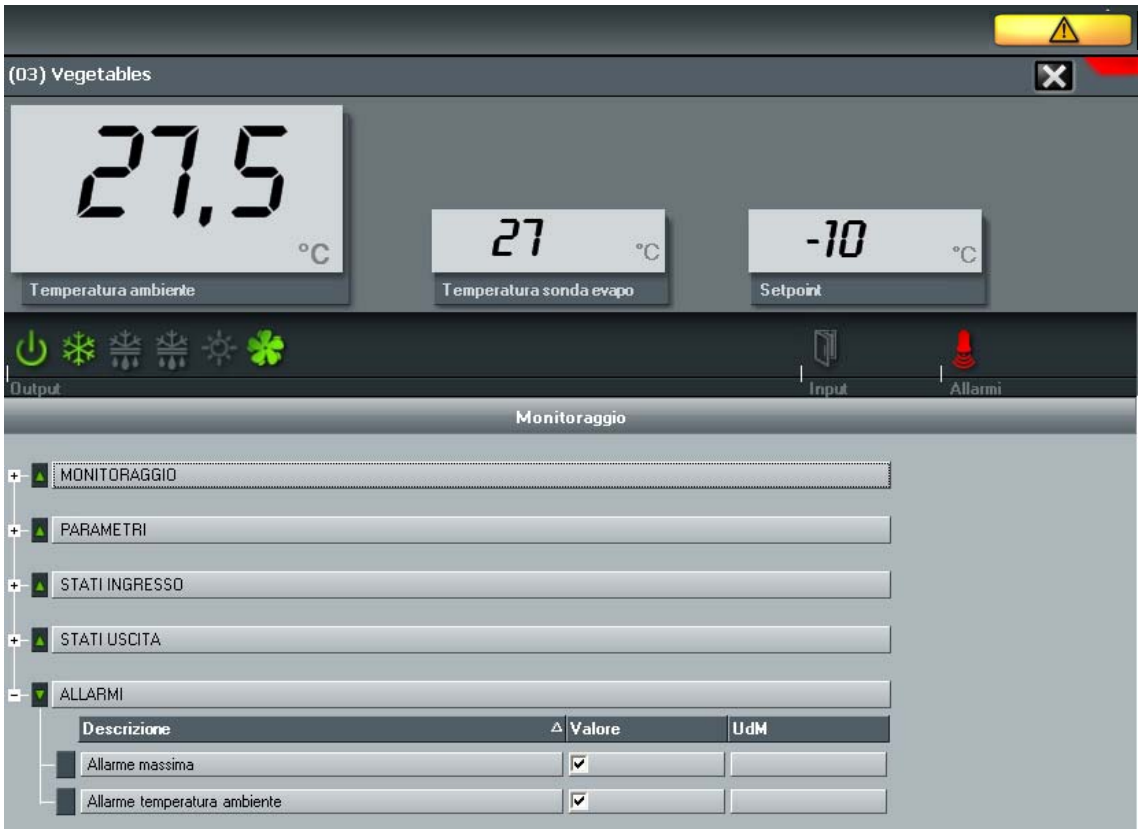
On the upper right side there is the general system status icon that in case of any alarm shows a yellow warning triangle

On the instruments tree, alarm icons shows the presence af an instruments in alarm status. Warning yellow icon is present on the Network and shows the alarm even if network tree is closed.
Opening the tree it's possible to see in detail which device is in alarm:



On Total Panel COntrol the instrument in alarm status has a red indication. In some cases it's shown a pre-alarm with yellow icon

The alarms of a single instrument can be displayed accessing the specific alarms area on the device properties folder.

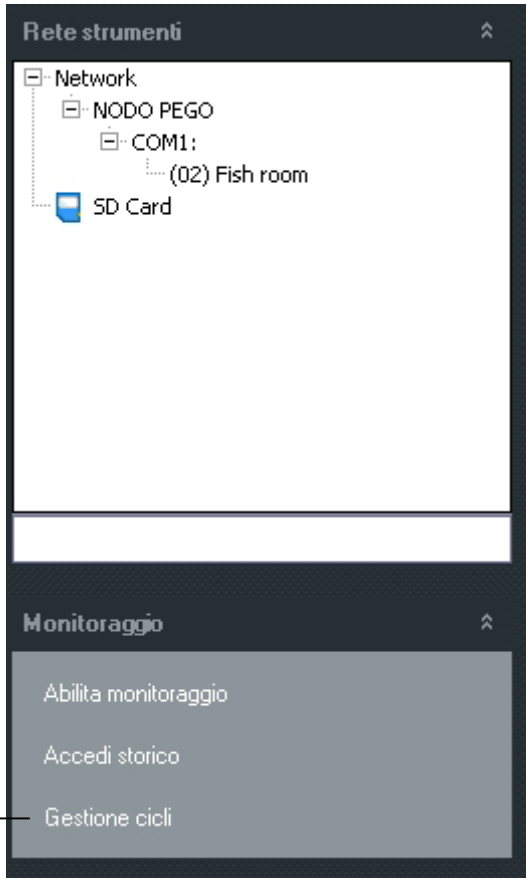


12 *AUTOMATIC CYCLES*

12.1 CYCLES MANAGEMENT

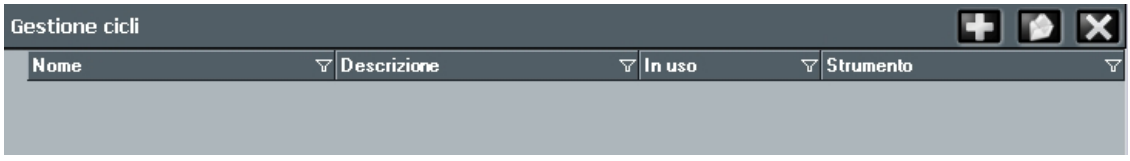
A cycle allows definition of a configuration series that a device will follow in a sequence, each one wil be kept for a specified period.
TeleNET allows for each instrument definition of a cycle library. Each cycle is made of a sequence of phases with defined duration, and every phase is characterized by settings sequence that the instrument will follow.

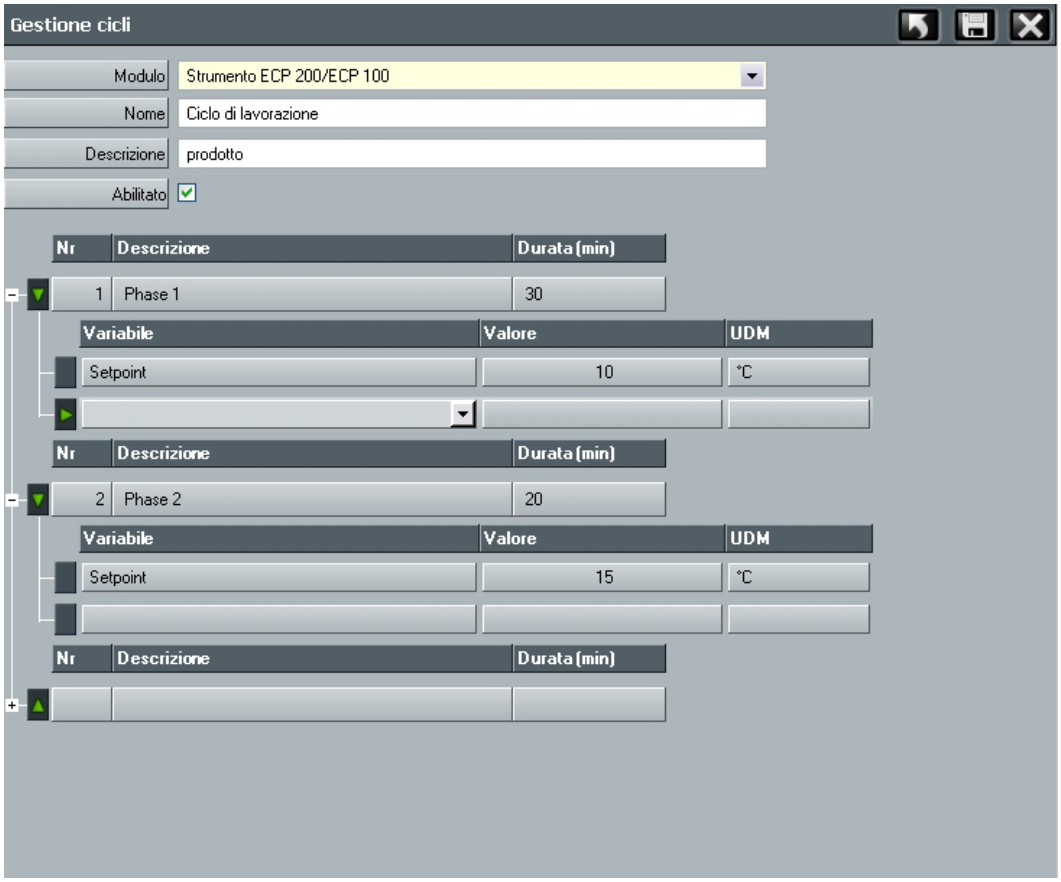
To access cycle management from main menu:



Cycles management

select command “Handle cycles”.





This folder is made of two defined areas:

1. Heading of cycle containing Name and Description of the cycle. The field Module is significant, and has the function to indicate device which will follow the cycle (can be modified only for a new cycle).
2. Cycle detail, divided into two levels:
    a. Phase: heading with the indication of phase duration
    b. Phase detail: definition of single settings that characterized the phase.

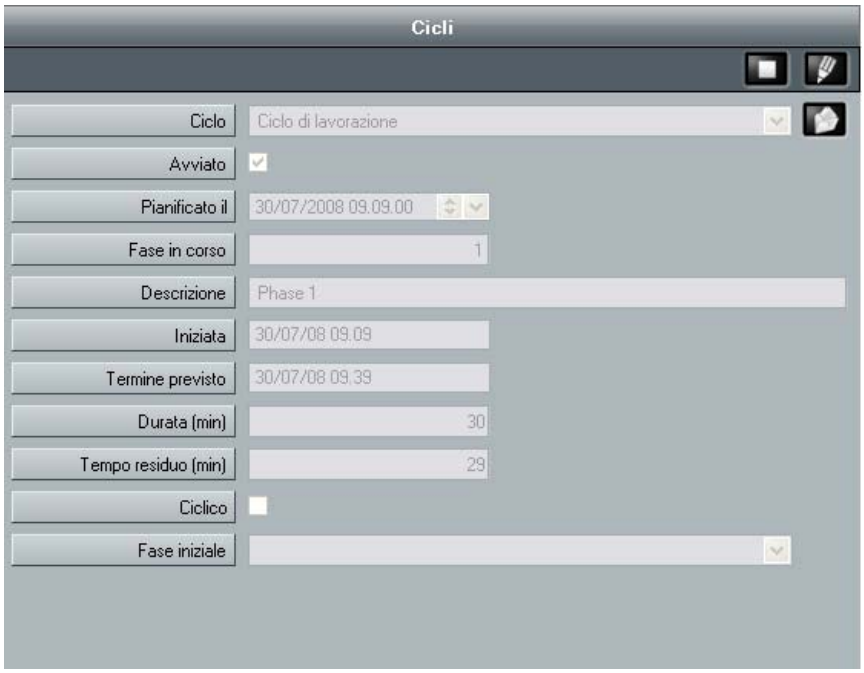
12.2 CYCLE PLANNING

TeleNET allows to plan a cycle execution for a device, and display his course.

To plan, displaying cycle status, access Cycles area on device properties folder.

12 *AUTOMATIC CYCLES*

Cycles

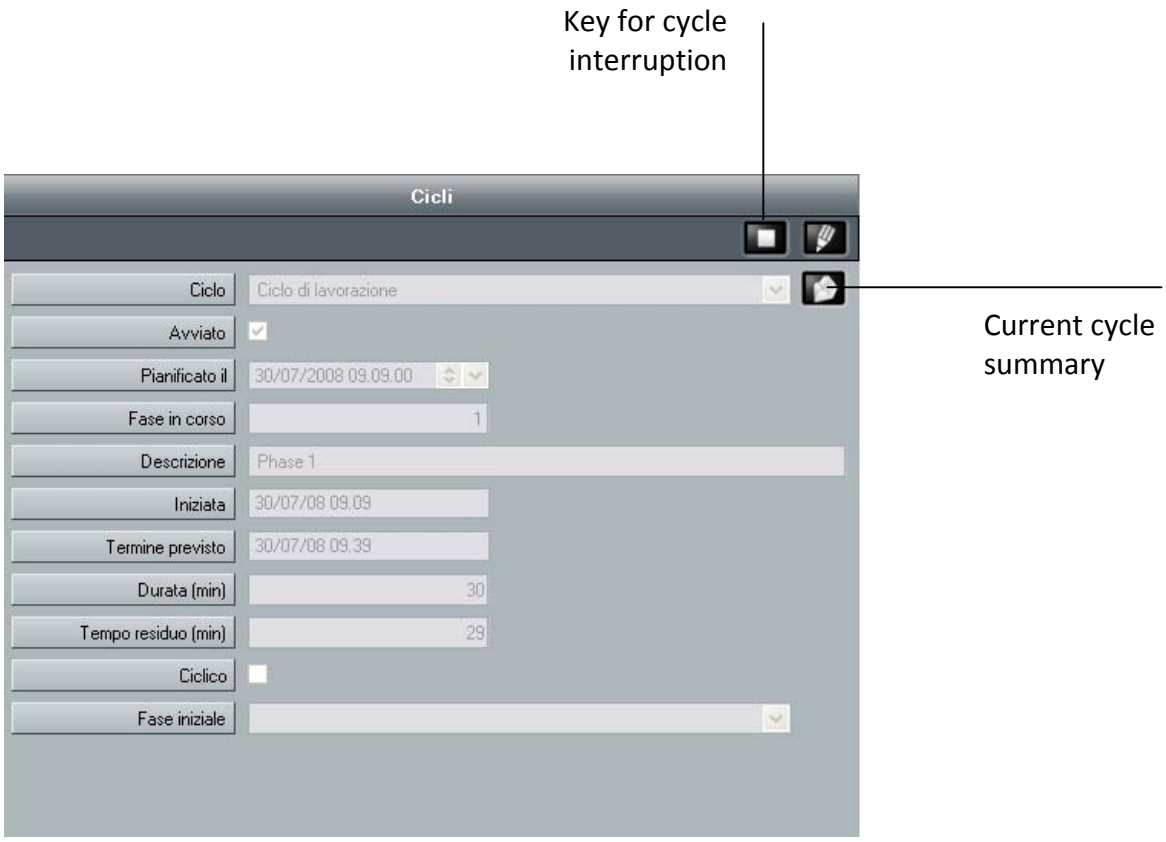


Field meaning:

1. **Cycle:** contains cycle to be planned (that is started) chosen from cycles available for the selected device;
2. **Started:** shows cycle start status (flag automatically appears when cycle is started). Cycle start is keynoted by the "blue" color of device status icon

3. **Planed on:** date and hour for cycle start;
4. **Current phase:** cycle phase actually running (only reading);
5. **Description:** description of cycle phase actually running (only reading);
6. **Start:** date and hour for phase start (only reading);
7. **Expected end:** date and hour for phase end (only reading);
8. **Duration:** phase duration, in minutes (only reading);
9. **Residual time:** time remaining to phase end, in minutes (only reading);
10. **Cyclic:** shows if the sequence is cyclic that means after the last phase it starts automatically again from phase 1.
11. **Start phase:** allows to start a phase different than the first one

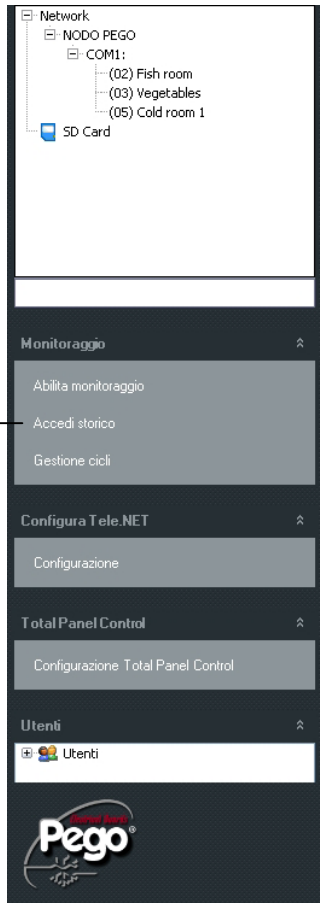
NB. for a new cycle planning the field "Started" must not be flagged to show cycle starting; it will be automatically flagged when it starts as requested by the planning.



13 HISTORY

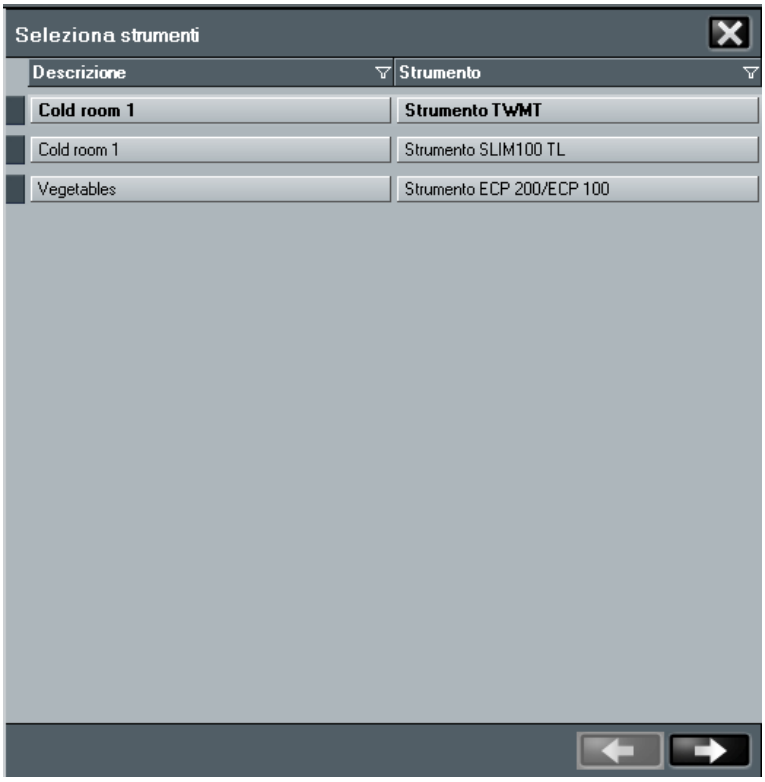
13.1 HISTORY DATA ANALYSIS

Access history



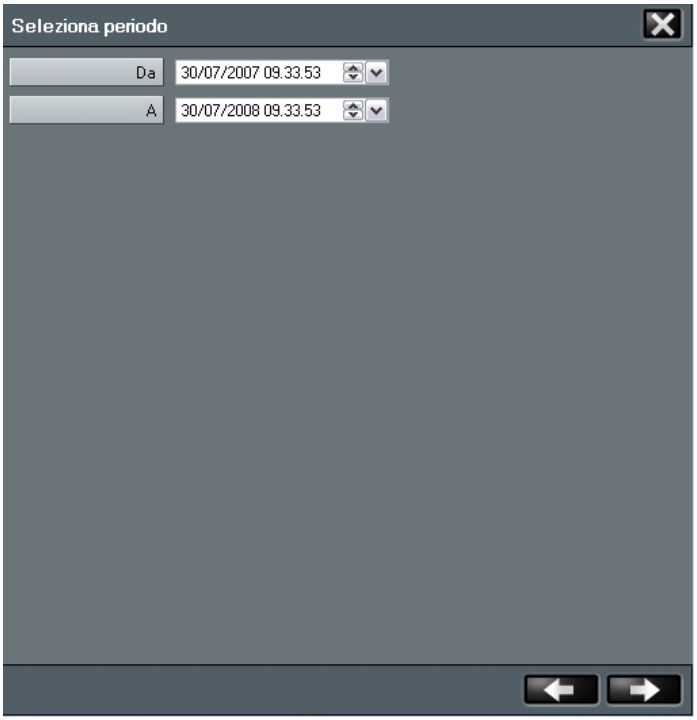
To display data monitored it's available a simple wizard for the user to guide on the searching of data to be displayed.

To display the history select *Access data* from main menu

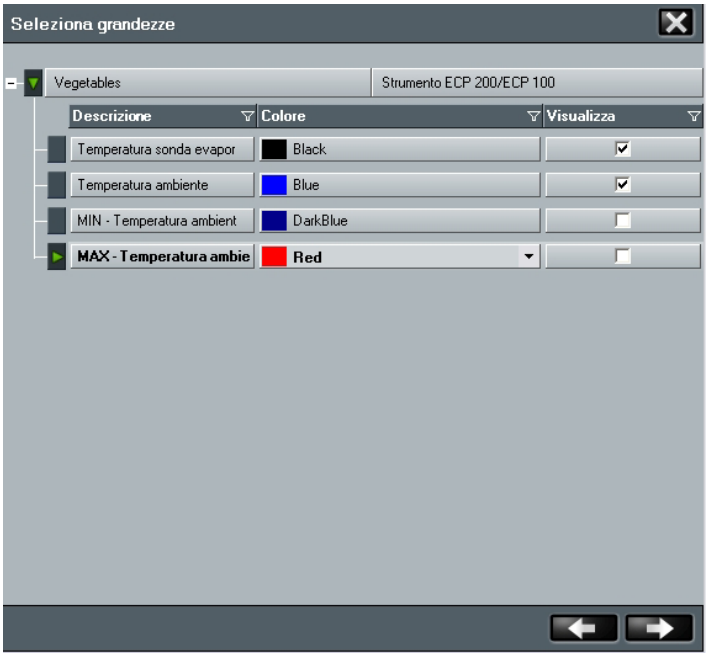


Select the device which history analysis is needed (it's possible to select up to 4 instruments at the same time, in case a comparision is requested).

Proceed with the right arrow



Select time period which history analysis is required.
In case no data registered is present for that period, the following screenshot will be void.

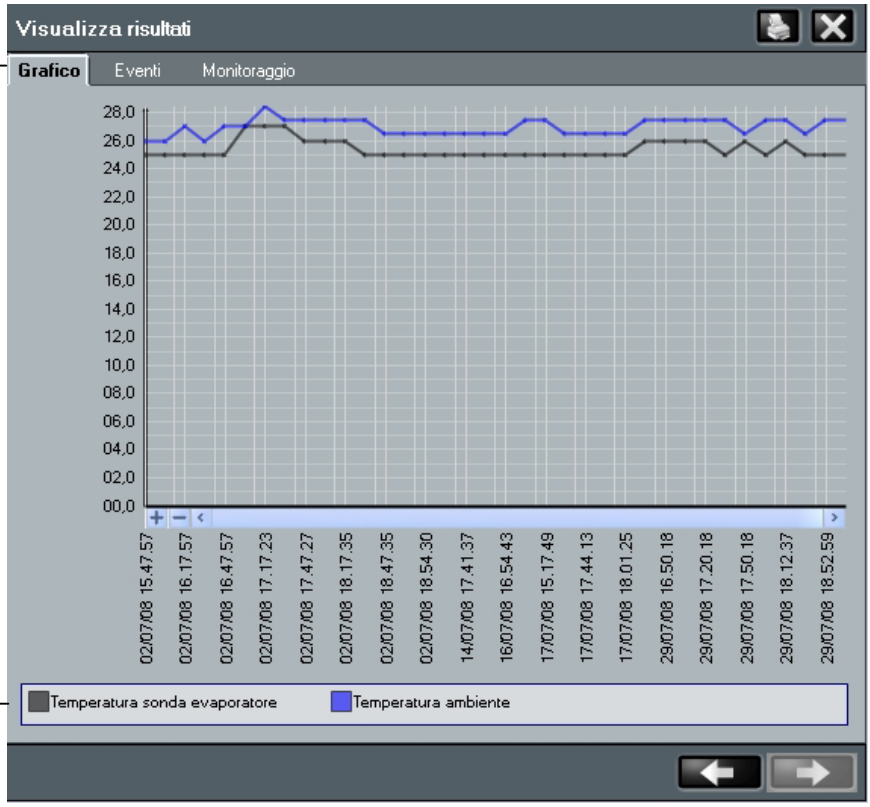


Select, choosing from the ones available, the desired measured units.
It's possible to associate a different color to each of these units.

13 HISTORY

Visualizations:

- Graph
- Events
- Monitoring

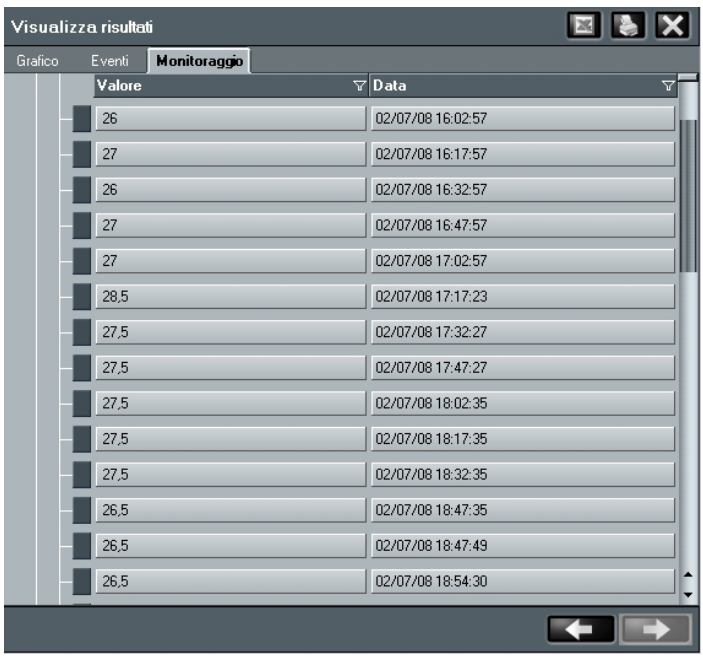


Legenda

13.2 DATA EXPORT

From menus "Events" and "Monitoring" it's possible to print the registered data or export them in Excel format.
Selecting Excel icon it will be directly asked the path where to save the file.

Data export and print



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Pego makes available the last manual release.
Please carefully read the license during
installation of TeleNET software.

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