PlantWatchPRO

supervisor for small-medium installations

CAREL

ENG **User manual**

LEGGI E CONSERVA QUESTE ISTRUZIONI

READ AND SAVE THESE INSTRUCTIONS

Technology & Evolution

Content

Before performing any operation, check that the PlantWatchPRO box contains:

1. the device itself;
2. the two plastic front panels (top and bottom);
3. a bag containing the screws for fastening the front to the rear;
4. a bag containing the required connectors;
5. the user manual.

1. PRESENTATION

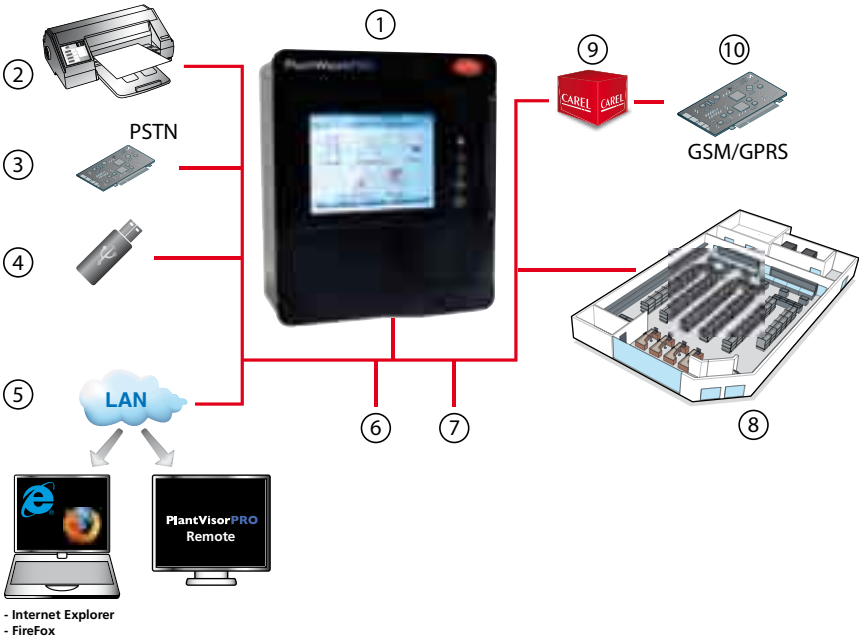
PlantWatchPRO is the new solution from CAREL for the supervision of small-medium installations.
Complete network and alarm configuration, simple navigation and an attractive design are some of the features that make PlantWatchPRO the cutting edge product in its category.
A colour LCD touchscreen, and the use of practical menus, guide the user simply and intuitively, without the use of a PC (however a PC can be connected if necessary), thus providing a practical solution for all those environments that do not have room for a computer.
Other innovative features of PlantWatchPRO include:

- possibility to connect and control up to 100 devices;
- use of the CAREL or Modbus® protocols;
- recording of around 100 variables, sampled every 15 minutes, for more than one year;
- IP65 index of protection;
- ready for connection to the PlantVisorPRO Remote supervisor system;
- a Guardian program that boosts and improves system reliability;
- 3 output relays, for alarm signals or activating lights and defrosts;
- possibility to export data (alarms, events, system and model configurations and variable reports) using a USB memory key (the data are downloaded in a format that is compatible with Microsoft® Excel and Microsoft® Word);
- import new standard or custom devices;
- display graphs;
- proximity sensor that activates the display without the user needing to open the cover;
- external buzzer management;
- complete alarm configuration;
- phone book for SMS contacts, fax numbers, e-mail addresses;
- active defrost management;
- possibility for multiple users to access the system, with different privileges (administrator, normal user, user with privileges);
- instrument suitable for technical environments, no moving parts.

Key:

1	touch screen
2	proximity sensor
3	alarm light
4	device on light
5	USB port
6	transparent cover

General PlantWatchPRO connection diagram



Key and product codes:

1	PlantWatchPRO (code PWPRO00000)
2	printer (not in the first version)
3	PSTN analogue modem (version code PWPROM0000 only)
4	USB memory key
5	PC (via LAN)
6	3 relay outputs (low, medium, high alarm) 2 digital inputs (can be configured, not in the first version)
7	Modbus® RTU
8	CAREL plant
9	GSM/GPRS modem connection kit (code PWOPMD0000)
10	optional GSM/GPRS modem (code PLWOPGSM00) *required to be able to use all the SMS functions.*

2. KEY

	note	highlights an important point; in particular as regards the practical use of the various product functions
	warning	warns the user of critical areas for the use and safety of PlantWatchPRO
	USB key	indicates that the function can only be accessed directly from PlantWatchPRO (not via web) and using a USB memory key
	tutorial	offers the user some simple configuration examples of the most common settings for the supervision of an installation

3. INSTALLATION REQUIREMENTS

The following are required to install PlantWatchPRO:
- ☐ two screwdrivers, one Phillips-head and the other flat-head;
- ☐ a drill to make the holes required on the chassis of PlantWatchPRO;
- ☐ screws for mounting the unit on the wall;
- ☐ step bit max. dia. 32 mm.

In addition

Before performing any operation, check that the PlantWatchPRO box contains:
- ☐ the device itself;
- ☐ the two plastic front panels (top and bottom);
- ☐ a bag containing the screws for fastening the front to the rear;
- ☐ a bag containing the required connectors;
- ☐ the user manual.

4. ASSEMBLY PROCEDURE

Montaggio

Warning:

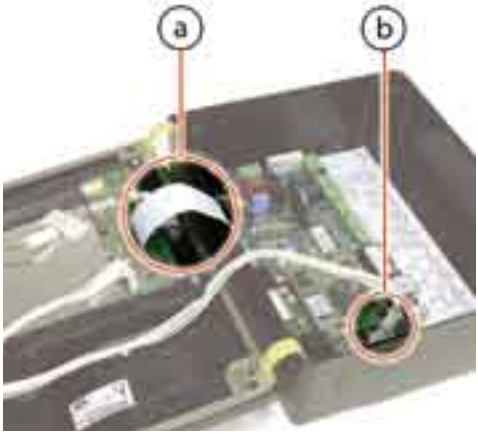
- *the electrical connections must only be performed by a qualified electrician;*
- *all the connections must be made with PlantWatchPRO disconnected from the power supply;*
- *power supply not to specifications may seriously damage the system;*
- *avoid direct contact with internal electronic components;*
- *connection errors (and connections other than those specified in this manual) may endanger the safety of the users and cause faults to the instruments and the components connected;*
- *install all electromechanical safety devices required to guarantee correct operation and the complete safety of the user.*

❶

Remove PlantWatchPRO from the plastic bag it is wrapped in and place it on the bench.

❷

Open PlantWatchPRO from right to left (side hinged by the yellow clamps), making sure not to disconnect the ribbon cable from the display and the other cable that connects to the board from the front panel.



a. display ribbon cable
b. board-front panel connection cable

❸

Remove the board using a flat-head screwdriver, levering the two tabs (3a e 3b) on the grill that secures it in place; then fully place the board on the front part of PlantWatchPRO (3c).

3a

3b

3c

❹

Now drill the plastic chassis of PlantWatchPRO to make the opening for the connection cables, holding it firmly by hand, as shown in the figure; the holes can be made either on the right-hand side or the top, according to needs and the layout of the site where it is installed.

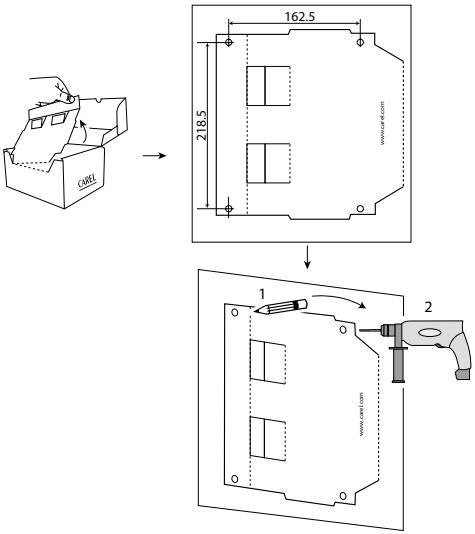
⚠ ***Warning:*** *to avoid the risk of damaging the board, drill PlantWatchPRO only on the right-hand side of the chassis, as shown on the inside label, and with a step bit max diameter 32 mm.*

5

Then place the board in its housing, aligning the hole on the board ( ) the corresponding protrusion on the grill; then press terminals JP6 and JP22 at the same time until the locking tabs on the grill click into place.

6

Using the drilling template (provided on the box), drill the wall where PlantWatchPRO is to be mounted, and then fasten it to the wall using four screws.



Warning: *to ensure IP65 index of protection, the screws used to fasten PlantWatchPRO to the wall must only pass through the four existing holes in the four corners of the chassis.*

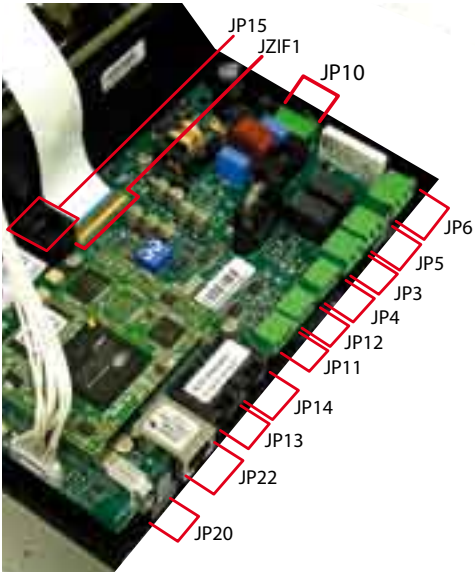
❼

Once PlantWatchPRO has been fastened to the wall, and the cables have been run through the holes in the chassis, the wiring can be completed, as follows:

- plug the telephone line into connector JP15;
- connect the lines for the devices in the installation to terminals JP11 and JP12 (line 1 to JP11 and line 2 to JP12) (RS485serial interface);
- connect the 3 relays to terminals JP3, JP5 & JP6;
- any digital inputs should be connected to terminal JP4;

function not available in the first version.

- JP13 is the terminal for the RS232 serial interface, used for service connections;
- JP14 is the terminal for the RS232 serial interface, used to connect a GSM/GPRS modem (optional);
- plug the network cable (for LAN connection) into the Ethernet connector JP22.
- finally connect the power cable to terminal JP10.



❽

Once wiring has been completed, close PlantWatchPRO again, making sure the two yellow tabs click into the corresponding slots.

❾

Then fasten the front to the rear using the four screws supplied.

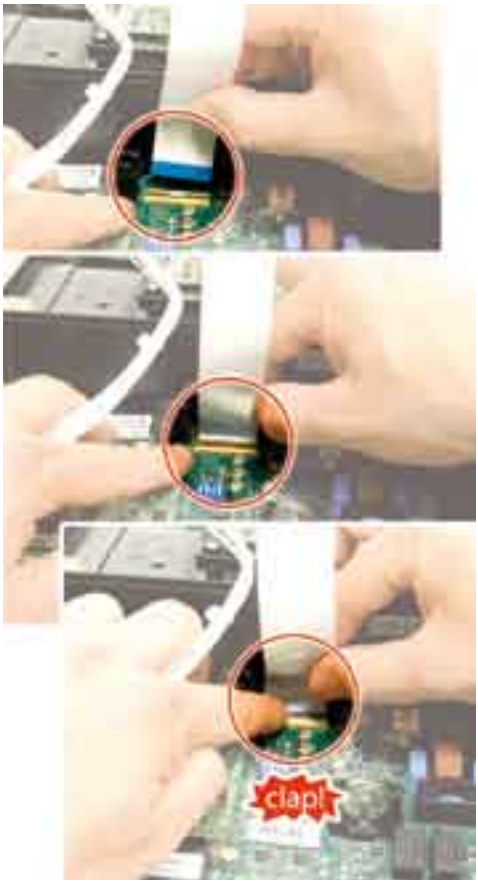
Warning: *to ensure the IP65 index of protection, the rubber gasket must be correctly positioned between the two parts of the PlantWatchPRO chassis.*

⑩

Finally, fit the top and bottom plastic front panels, by lightly pressing them into place.

Warning: *if during the assembly operations the display cable is detached from terminal JZIF1, proceed as follows to connect it again:*

- *lift the "clip-clap" tab on the terminal;*
- *connect the display cable, holding it in place with two fingers;*
- *finally lower the tab on the terminal until it clicks into place, thus securing the cable.*

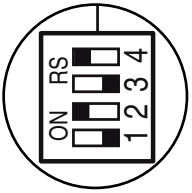


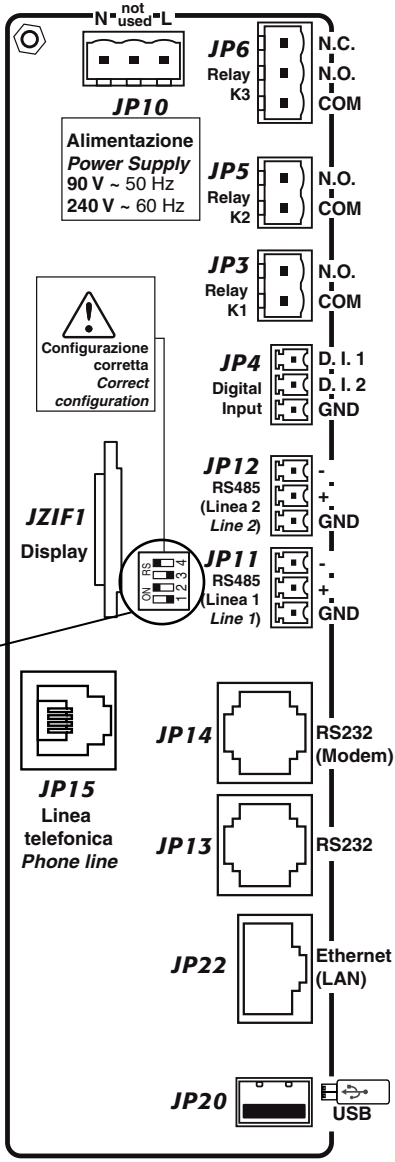
5. BOARD AND CONNECTIONS

Terminali e collegamenti:

JP15	telephone line for PSTN modem
JZIF1	display
JP10	power supply
JP6	relay K3
JP5	relay K2
JP3	relay K1
JP4	1 Digital input 1
	2 Digital input 2
	3 GND terminal (negative power supply terminal)
JP12	RS485 (field - line 2)
JP11	RS485 (field - line 1)
JP14	RS232 (optional modem)
JP13	RS232
JP22	Ethernet (LAN)
JP20	USB

Warning: *never change the dipswitches from the configuration shown in the figure*





6. GRAPHIC INTERFACE

Display

One of the main features of PlantWatchPRO is the user interface. Web navigation also uses the same graphic interface, identical to the touchscreen except for some functions that can only be accessed directly from PlantWatchPRO using a USB memory key (these are highlighted in the text by).

Touchscreen keypad

The foll owing keypad will be made available on the touchscreen display whenever data needs to be entered (letters, numbers or symbols):

To switch from the main keypad (upper case) to the other keypads, use the following buttons:

- to shift to lower case
- 123 for the numeric keypad
- spc for symbols and punctuation

Navigation buttons

	BACK button: used to return to the previous screen. If pressed on the home page, automatically returns to the login screen
	HOME button: returns to the home page
	SILENCE button: used to mute the alarm generated by the buzzer (or the additional siren, if installed)
	HELP button: pressing the Help button displays a brief explanation of the functions available in the current screen *To exit the Help screen, press* 
	displays the list of the devices in the installation and the corresponding alarms. When a device generates an alarm, this button turns red () until the alarm is acknowledged -PV-, cancelled -Canc.- or removed -Rem.- by the user (see chapter dedicated).
	restarts the system software, loading the changes made to the configuration; if the changes require the new configuration to be loaded, the button is red () until it is pressed to make the changes active. The reload operation may take a few seconds. *To make the changes to the system configuration effective, the software needs to be reloaded (using*  *), after having confirmed the changes*
	opens the window for setting the "Guardian" program; the notification channels specified will be used by the "Guardian" to send any PlantWatchPRO malfunction warnings to the specific technical personnel. This button, like the previous two, turns red () when the program is activated
	CONFIRM button: confirms the changes made to the screen
	scrolls the list upwards
	scrolls the list downwards
	scrolls the list to the previous device
	scrolls the list to the next device
	used to access the key to the graph of the variables on the corresponding screen
	add
	remove *To remove an object (device, time band, action, …), first press*  *and then select the object to remove*

Main menu

The PlantWatchPRO main menu features the clock, the navigation buttons, the information on the name of the site, and five icons: Installation, Configuration, Reports, Alarms/events and Scheduler; pressing each of these accesses other secondary menus with the lists of corresponding functions.

7. START UP

Configuration wizard

❶ When PlantWatchPRO is first started, the following presentation screen will be displayed

Pressing  accesses the page for selecting the LANGUAGE and the TIMEZONE.

❷ Press the corresponding fields to select the desired items from the lists. The selection is confirmed by moving to the following screen ( button)

❸ Now enter the date and time by selecting the corresponding fields.

The date format is "yyyy/mm/dd" and the time format is "hh/mm".

❹ As the final phase in the program initialisation process, the previous selections need to be confirmed by pressing the  button or going back (with the  button) and changing the settings.

Warning: *check the settings carefully before pressing*  *as once confirmed, the other languages and time zones can no longer be recovered.*

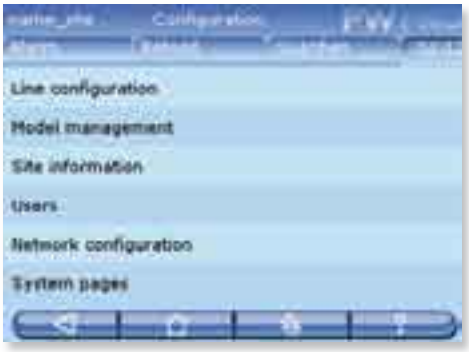
A confirmation message then notifies the user that the settings have been saved and, once the system has been rebooted, the PlantWatchPRO main menu will be accessed.

8. CONFIGURATION

Line configuration

Line 1 and Line 2

(these are the two lines that can be configured for the installation: choose "line 1" and then proceed in the same way for the second line, if used).



Devices

To add (or where necessary remove) devices to/from the installation, choose the type (from those available in the PlantWatchPRO archive), then assign a short custom description and assign the address (this must be different for each device on the same line, otherwise the program will display an error message); a group can also be assigned (up to 5 groups are available), used to apply specific rules and enable or disable the device according to special needs.

Disabling a device means that any alarms it generates will not be managed.

Device customization

List of devices configured on the line; this is used to display the variables and if necessary change the description.

Connection

To set the connection type (CAREL-RS485 or Modbus®-RS485) and the speed (baud rate).

Model management

Model configuration

Function used to configure the models corresponding to the instruments, that is: Alarms (priority and enable/disable), the variables to be sampled (and corresponding sample time), displayed on the graph and logged (Log/graph/report menu), above all the variables required for the HACCP system; in addition, a custom description and a different unit of measure from the original can be entered (Description/unit of measure menu).

Import standard models

To import other models of devices from the standard libraries.

Import from device creator

For custom models created using the special device creator program.

Copy models

Used to create new models based on an existing model, then making the desired changes.

Updating the model used as the basis for others also changes all the models derived using the copy function.

Remove model

To remove a model that is not used by the installation and thus free up part of the PlantWatchPRO memory.

Site information

This is used to enter the information relating to the site where PlantWatchPRO is installed, plus some information on technical service for support in the event of problems.

The PASSWORD and CONFIRM (password) fields must be completed if a password needs to be set for the remote connection to PlantWatchPRO.

The text entered in the MAINTENANCE and TELEPHONE fields will be displayed when pressing the button from the login screen, so as to indicate who to contact in the event of need.

Users

Administrator

Used to modify the settings of the administrator user.

Remote user

Used a configure the remote user.

Normal user

Used to create new users and assign them different privileges (site configuration/change parameters/ alarm management).

Network configuration

Configure the settings for the connection to a local network.

System pages

Reload configuration

This is the function that makes the changes made to the previous configuration effective.

No changes to the system will be active unless the Reload button is pressed, which remains red (Reload) as a reminder, while the system is still in the previous configuration. Only after having confirmed the changes on the reload page will the system be updated..

Backup/Restore

Export site configuration

Once an installation has been configured, the configuration can be saved and exported and then used to configure another PlantWatchPRO.

Operation also available via web

Restore site configuration

Import the system configuration from a USB key

.

Export logs

Export the system data log files (variables).

Operation also available via web.

Update software

To download new versions of the PlantWatchPRO software .

Display/Clock

Control panel for the date/time and display settings.

Tree of the "Configuration" menu functions

- **Line config.**
  - Line 1/2
    - List of devices
      - Device details
    - Custom devices
      - List of variables
        - Variabile details
    - Connection
- **Model manag.**
  - Configure models
    - Alarms
      - List of device models
        - List of alarms
    - Log/graph/ report
      - List of device models
        - List of variables
    - Description/ unit of measure
      - List of device models
        - List of variables
  - Import standard models
- **Site info**
  - Import from device creator
  - Copy model
  - Remove model
- **Users**
  - Admin
- **Network config.**
  - Remote user
  - Normal user
    - List of normal users
      - Normal user details
- **System pages**
  - Reload config.
  - Backup/restore
    - Export site config.
    - Restore site config.
  - Update software
    - Export logs
    - Restore logs
  - Display/ clock

How to configure a simple line

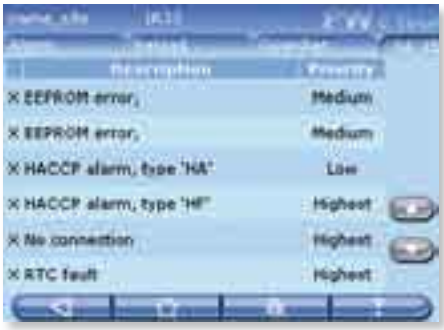
First of all, the user needs to configure PlantWatchPRO in relation to the devices in the specific installation.

1. From the home page access CONFIGURATION → LINE CONFIGURATION → LINE 1 → DEVICES. Progressively add all the devices featured in the installation and connected to line 1, assigning a specific description, an address and if necessary add the device to a group (up to five groups are available) for applying one or more rules (see the part of the manual corresponding to the SCHEDULER menu).

   Each device on the same line must have a different address from the others, otherwise, if the same address is assigned twice, an error message will be displayed.

2. After having entered the devices, go back and press the LINE 1 → DEVICE CUSTOMIZATION item. Here the name of each individual device and each related variable can be customized.
3. Go back and choose the type of CONNECTION, from the standard protocols proposed.
4. Repeat 1, 2 & 3 for LINE 2 (if featured).

❺ Entering MODEL MANAGEMENT → MODEL CONFIGURATION → ALARMS and choosing the devices on the two lines from the list, one at a time, the alarms can be enabled or disabled and the priority set (the priority of an alarm will be indicated in the list with a different colour, depending on the level).



❻ Then return to the previous menu and enter LOG/GRAPH/REPORT → DEVICE DETAILS → VARIABLE DETAILS → a screen will be displayed for selecting: the frequency for recording the value of the variable, the colour used to draw the curve showing the trend of this variable on the graph, and if required include the variable in the report and/or in the graphic.

In the list of variables logged, the columns have the following meanings:
Freq: sampling frequency.
G: variable displayed on the graph.
P: variable included in the HACCP report.
M: variable included in the main list of devices in the installation (INSTALLATION menu).

❼ DESCRIPTION/UNIT OF MEASURE is used to change the name and unit of measure of the variables.

❽ Access CONFIGURATION → SITE INFORMATION to enter the information on the site required for the synchronisation of PlantWatchPRO and the information on technical service.

❾ Enter the connection data in CONFIGURATION → NETWORK CONFIGURATION
The data for connecting PlantWatchPRO to the LAN is required.

❿ Reload the configuration, using the Reload button and the dedicated screen.

The line is thus configured, and from the INSTALLATION menu all the settings defined thus far can be displayed under CONFIGURATION.

How to differentiate a device (or a group of devices) from the standard

An example of how to create another model of device with other features starting from the IR33

1. From the home page, enter the CONFIGURATION → MODEL MANAGEMENT → COPY MODELS→ menu, from the ORIGINAL MODEL list choose the standard model to start from (in the example, "IR33") and in the field TARGET MODEL field enter the name to be given to the new model (in the example, the new model has been called "IR33modified")

   The model created is now identical to the one used as the starting point.

2. Return to the MODEL MANAGEMENT→ MODEL CONFIGURATION → menu to customize the new devices created, changing the settings relating to:
   - ALARMS;
   - LOG/GRAPH/REPORT;
   - DESCRIPTION/UNIT OF MEASURE.

   A model can thus be created that is different from the one used as the starting point, based on specific needs.

   After having created the new model with different features from the standard IR33, these types of devices can be installed, following the first steps in the sequence of operations presented in the TUTORIAL on the configuration of a simple line.

9. INSTALLATION

When entering this menu a list is displayed showing all the devices available in the installation and their status: the graphic LEDs next to the names of the devices have the following meanings:

- green - everything is working correctly.
- red - the device has an alarm.
- blue - device disabled.
- grey - device off-line.

In addition, the main variables previously selected to be displayed (from the CONFIGURATION → MODEL MANAGEMENT → MODEL CONFIGURATION → LOG/GRAPH/REPORT → DEVICE DETAILS menu) are shown, or alternatively the default variables and the corresponding values.
Accessing the detail of each device, the alarms can be acknowledged (both concluded and active) and the graph of the trend of the variables displayed.

Write parameters

This lists the parameters that can be modified; to change the value of a parameter, select it by pressing the corresponding row.

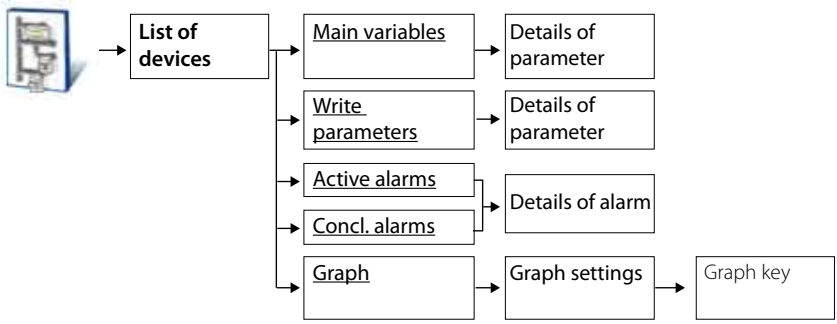
Graph

Graph of the variables. The horizontal axis shows the time scale, while the vertical axis shows the values of the variable. (The colours have been set previously by the user in the CONFIGURATION menu).

use the and buttons to scroll the time axis and the and buttons to move from one device to another.

PlantWatchPRO can plot up to five values at the same time.

Tree of the "Installation" menu functions



10. REPORTS

Display log

Displays the values of the logged variables.

Download log

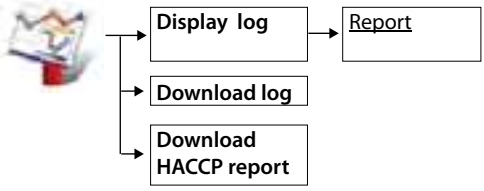
Saves the values of the logged variables.
After having entered in one of the first two menus (either DISPLAY LOG or DOWNLOAD LOG), select the date for the logged data to be downloaded and/or displayed.

Download HACCP report

Directly prints the report of HACCP variables.

Via web, PlantWatchPRO opens a dialogue box for entering the directory where the HACCP report (".rtf" format, compatible with Microsoft® Word) or the log will be saved (".csv" format, compatible with Microsoft® Excel).
From PlantWatchPRO, on the other hand the data, both the log and the HACCP report are saved to the USB memory key (in the directory G:\export\name_site\report.)

Tree of the "Report" menu functions



11. ALARMS/EVENTS

Active alarms

Displays the active alarms on the system;
key to alarm colours:

- red - highest priority;
- orange - high priority;
- yellow - medium priority;
- white - low priority.

Concluded alarms

Shows the list of concluded alarms.

Events

List of the events saved by the system. The icons have the following meanings:

information event

error event

warning event

If the message in the EVENT column is too long to be displayed in full, to read it select the corresponding row and open the details

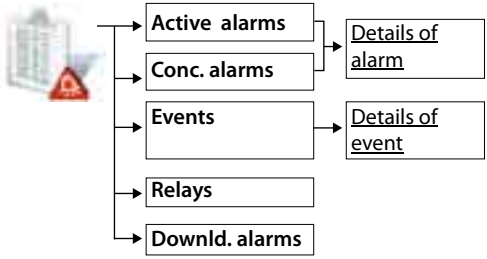
Relays

Used to disable the relays activated by PlantWatchPRO.
Pressing the corresponding fields and confirming ( ) disables the relay.

Download alarms

This saves the list of active alarms from a certain date onwards; the data is saved to a file in ".csv" format (compatible with Microsoft® Excel).

Tree of the "Alarms/Events" menu functions



How to respond to alarm signals from PlantWatchPRO

Below is a description of how alarms are shown on the PlantWatchPRO display and how to respond.

1. If the ALARM button turns red (Alarm) an alarm is active on one of the field devices.
   Enter ALARMS/EVENTS → ACTIVE ALARMS → to display the list of active alarms in the entire installation, highlighted in four different colours depending on the level of priority:
   - red - highest;
   - orange - high;
   - yellow - medium;
   - white - low.

   In the example, a low priority alarm called "Al. timeout defrost evap2" is activated on the device called "IR33 #1".

2. From the list of active alarms, pressing the row showing the alarm in question accesses the page with the details of the alarm. This highlights the date and the time when the alarm was activated, plus three fields (PV, CANC. and REM.) that are empty if the page is being accessed for the first time.

   Abbreviations:
   PV - PV - acknowledge alarm;
   Canc. - cancel alarm, that is, all the actions relating to the alarm are cancelled (e.g. send SMS, fax,…) before being undertaken by PlantWatchPRO;
   Rem. - remove alarm from the list of active alarms.

3. Pressing the button PlantWatchPRO records the user who performed the operation as the person acknowledging the alarm; in addition, the date and the time when the operation was performed are also recorded.

4. Pressing the button again records the time and date the alarm was cancelled and who performed the operation; this may be a different user from the one who previously acknowledged the alarm.

5. Pressing a third time records the identity of the user who removed the alarm on PlantWatchPRO.

6. Once the alarm has been removed, it no longer appears in the list of ACTIVE ALARMS, but rather can be seen in another screen with the list of CONCLUDED ALARMS.

   Once the alarm has been cancelled, the Alarm *button turns blue again.*

7. Pressing the row with the desired alarm again opens the detail screen, showing the date, time and name of the user who acknowledged, cancelled and removed the alarm.

12. SCHEDULER

I/O configuration

This menu is used to configure the number of attempts at an alarm signal (if the previous was not successful) and the interval between the one attempt and the next at the following signals:

- fax;
- SMS;
- e-mail;
- RAS (Remote Access Service).

As regards the e-mail addresses, the data relating to the server and the Dial-Up connection can be simply and intuitively configured on PlantWatchPRO.

In addition, the procedure and time for resetting the buzzer and the three relays can also be set.

Phone book

Up to five fax recipients, five SMS numbers, five e-mail addresses and one remote access connection can be configured.

Each recipient may have more than one number or address, separated by semi-colons (;),as in the most commonly used e-mail programs.

What is a rule? *For each alarm or group of alarms (including from different devices), a series of rules can be defined, which may be:*

- *a set of actions (fax, SMS, e-mail, print, activate relay, buzzer, remote access);*
- *a time band;*
- *a delay.*

If an alarm goes off, the actions are performed. If a delay is set, the actions are performed after having waited the time set for the delay. If the time band is set, the actions are only performed if the alarm is activated within the time band.

Rule configuration

Time bands

Used to enter time bands for implementing the rules; the DAILY/WEEKLY/SPECIAL EVENT submenu can be used to add or remove time bands of different durations that can be completely customized by the user.

Actions

Notifications

Configuration of the parameters for the notifications and the activation of the alarm channels.

Scheduled activities

List of the scheduled activities; the parameters controlling the various activities can be set, where necessary assigning them to a certain group of devices (set during the configuration procedure).

Rules

Display the list of rules for notifying the alarms; rules can be added/removed or edited, pressing the detail of the rule to open the special menu for setting the configuration parameters.

For correct data entry, first create the time bands and the actions.

Scheduled rules

Display the list of scheduled rules; scheduled rules can be added/removed or edited, pressing the detail of the rule to open the special menu for setting the configuration parameters.

I/O test

Test the correct operation of the Input/Output channels.

Guardian

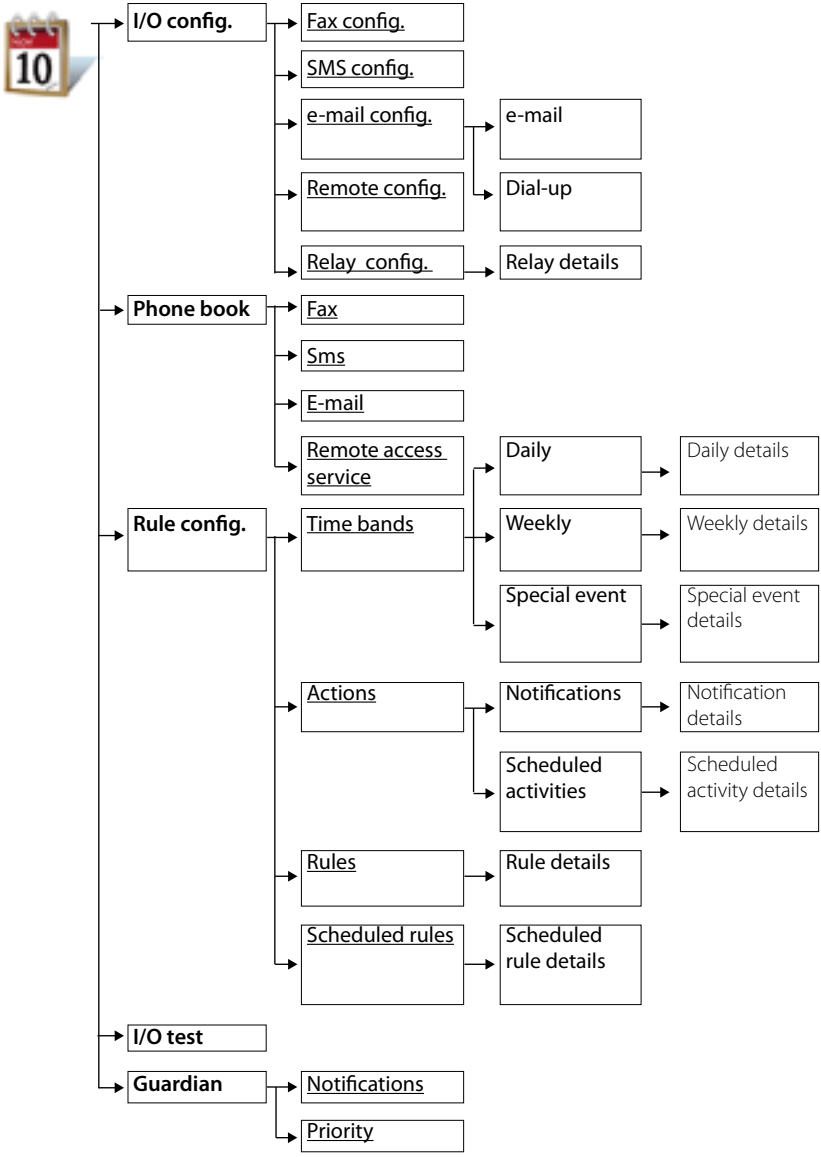
Notifications

Configuration of the notification parameters for the "Guardian" program; the channels set are used by the "Guardian" to send notifications of any malfunctions on PlantWatchPRO to the technical personnel indicated.

Alarm priority

Used to configure the priority of the alarms, entering the settings in the respective fields.
If the type of the alarm is selected, the "Guardian" program checks that the alarm is managed within the maximum time specified in the field. If this is not the case, notification is sent via the channels configured in the NOTIFICATIONS menu.

Tree of the "Scheduler" menu functions



How to set scheduled rules

Below is a step-by-step description of how to turn off the lights at 20:00 each working day and turn them on again in the morning at 9:00.

1. From the home page access SCHEDULER → RULE CONFIGURATION → TIME BANDS → DAILY → : enter the daily time bands for switching the light off or on; in the example two time bands have been created, called "working day" "(09:00-20:00)" and "working night""(20:01-08:59)".

   To set the night-time band "21:00-06:00", it must be divided into two bands: "21:00-23:59" and "00:00-06:00".

2. Go to TIME BANDS → WEEKLY → : now create the weekly light On/Off time bands; in the example two bands have been created relating to day and night (day= lights on, night= lights off), called "working week day" and "working week night", entering first the daily time bands created previously on the days from Monday to Friday (premises considered closed Saturday & Sunday).

❸ Return to RULE CONFIGURATION → ACTIONS → SCHEDULED ACTIVITIES → : enter the desired actions (on the entire installation or just on some devices, using the option for assigning the actions to the GROUPS). Two actions have been created, "lights ON" and "lights OFF", turning the lights on and off respectively.

❹ Then go to RULE CONFIGURATION → SCHEDULED RULES → : enter the new scheduled rules, that is, one that acts in the time band when the lights should be on, activating the action that switches the lights on (this rule will be called "lights on (day)") together with another rule that switches the lights off, thus activating the "lights OFF" action (this rule has been called "lights off (night)".

In four steps, a planned activity has been set that automatically switches the lights on and off; the same procedure can be used to create other rules acting on the installation (entire installation or just some devices).

How to set the rules

Below is a description of how to set PlantWatchPRO to notify a highest priority alarm activated in the night-time time band (21:00-08:00) via SMS).

1. From the home page access SCHEDULER → RULE CONFIGURATION → TIME BANDS → DAILY → : create a time band that goes from 21:00 to 08:00; in the example this has been called "night".

   Remember that to set the night-time band "21:00-08:00" it must be divided into "21:00-23:59" and "00:00-08:00".

2. Return to TIME BANDS→ WEEKLY → : create a weekly time band in which the "night" daily band is applied every day of the week; this weekly time band has been called "every night".

3. Return to RULE CONFIGURATION → ACTIONS → NOTIFICATIONS → : enter the notification action "send SMS", selecting from the SMS list the telephone number of "maintenance tech. X" to send the SMS to as the only notification channel.

❹ Return to RULE CONFIGURATION → RULES → : now create a rule (called "night SMS"), applying a DELAY of one minute (enter "1" in the corresponding field); from ALARM PRIORITY choose "Highest", from TIME BANDS, "every night" (band previously created in the corresponding menu) and finally, from ACTION "send SMS".

With these settings, as soon as a highest priority alarm is activated, on any night of the week, PlantWatchPRO waits one minute and, if within this time interval the alarm has not concluded, notification of a highest priority alarm will be sent via SMS to "maintenance tech. X".

How to configure the Guardian program

Below is a description of how to sent a fax to a certain number if a highest priority alarm is activated on a field device.

❶ From the home page access SCHEDULER → PHONE BOOK → FAX → and enter the fax number to send the notification to, with a short description.

❷ Return to the SCHEDULER menu and access GUARDIAN → NOTIFICATIONS → choose the fax number set previously in the PHONE BOOK from the list.

❸ Return to the GUARDIAN menu and access ALARM PRIORITY → select the type of alarm to be managed using the Guardian program; in this case select "Highest", to have the alarms with the highest priority signalled via fax if the system does not manages them within 30 minutes ("30 min" is the time set by the user).

13. USE OF THE USB MEMORY KEY

PlantWatchPRO can transfer data to/from a USB memory key; specifically, some functions are not accessible via web, but only using PlantWatchPRO.

In fact, the user can download the logged values of the selected variables, the HACCP report, the configuration of the complete site, the changes made to various models (to be then exported to others sites for reuse) and the list of alarms activated in the installation.

The USB memory key can also be used to load new data to the PlantWatchPRO memory; this is useful, for example, for importing the configuration of a previously configured site, models created based on the default models or those available in the standard libraries, or those created using the special Device Creator (IDE package).

A USB memory key can also be used to install new updated versions of the PlantWatchPRO software.

The following functions are only accessible directly on PlantWatchPRO and only using the USB memory key (highlighted in the manual by):

- IMPORT STANDARD MODELS;
- IMPORT FROM DEVICE CREATOR;
- RESTORE SITE CONFIGURATION;
- UPDATE SOFTWARE.

Other functions that require the USB memory key, if using PlantWatchPRO, yet are also accessible via web, are:

- EXPORT LOG;
- DOWNLOAD HACCP REPORT;
- EXPORT CONFIGURATION SITE;
- DOWNLOAD LOG;
- DOWNLOAD ALARMS.

Warning: *do not confuse the EXPORT LOG and DOWNLOAD LOG functions: the former saves a database (.db3 file format) of the variable log, while the DOWNLOAD LOG function is used to download a file of the logged values as a Microsoft® Excel table.*

The table below shows a list of the functions that use the USB memory key to save data; the names of the directories (created automatically by the software) where the data are saved are listed (with the corresponding addresses), as well as the format the file is downloaded in.

Function	Address where files are saved	File format
EXPORT LOGS	G:\export\site_name\ histor	.db3
DOWNLOAD HACCP REPORT	G:\export\site_name\ report	.rtf
EXPORT SITE CONFIGURATION	G:\export\site_name\ config	.db3
DOWNLOAD LOGS	G:\export\site_name\ report	.csv
DOWNLOAD ALARMS	G:\export\site_name\ alarms	.csv

"G:\" is the name that usually denotes the removable memory drive on the PC, in this case, the USB memory key;
"site_name" is the name that assigned to the directory where the files will be saved and is the name that the user has assigned to the site under CONFIGURATION → SITE INFORMATION.

How to download a HACCP report from PlantWatchPRO

Below is a description of the operations to be performed by the user to download a HACCP report from PlantWatchPRO using the USB memory key, and then transfer the data to a PC. For example, download the daily report, with the data shown every 30 minutes, relating to 19 July 2007.

1. From the home page access REPORT → DOWNLOAD HACCP REPORT.
2. As the DATE enter the day the report should start, therefore "2007/07/19".
3. Select "Daily" as the TYPE (the other type of report that can be downloaded is "Weekly").
4. Choose "30 minutes" as the INTERVAL (the other option for displaying the values of the HACCP variables is "12 hours").
5. Insert the USB pendrive in the port.
6. Finally press the button and the OK button on the Warning message that appears to start the data transfer from PlantWatchPRO to the memory key.

After a short while a message box is shown confirming the operation, or alternatively an error message if the memory key does not have enough space or has not been inserted correctly.

How to update the PlantWatchPRO software using a USB memory key

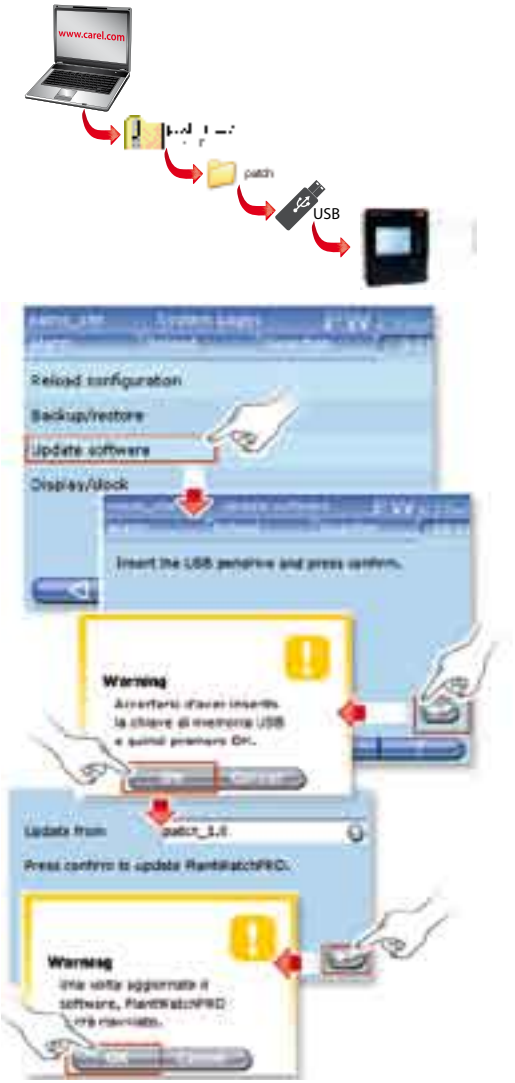
How to update the PlantWatchPRO software with new versions released by CAREL.

1. Download the new software version from www.carel.com to a PC.
2. The file downloaded will be a compressed file such as "patch_1.0.zip".
3. Unzip the file, creating a directory called "patch".
4. Copy the "patch" directory (with all the contents) to the USB memory key.
5. From the PlantWatchPRO home page access CONFIGURATION → SYSTEM PAGES → UPDATE SOFTWARE.
6. Insert the memory key and press the button and the OK button on the Warning message that appears.
7. From the list that will be displayed on the new screen, select the "patch" directory as the source for updating the software version.
8. Press the button and the OK button on the Warning message that appears to start the software update operation.

After this operation, as highlighted by the Warning message, PlantWatchPRO will be rebooted to make the software update effective. This operation may take a few minutes.

Warning:

- *Never remove the USB memory key until the software update has been completed and the system has been rebooted, as both PlantWatchPRO and the key may be seriously damaged;*
- *Power must be available throughout the entire software update operation.*



14. NAVIGATION VIA WEB FROM A REMOTE PC

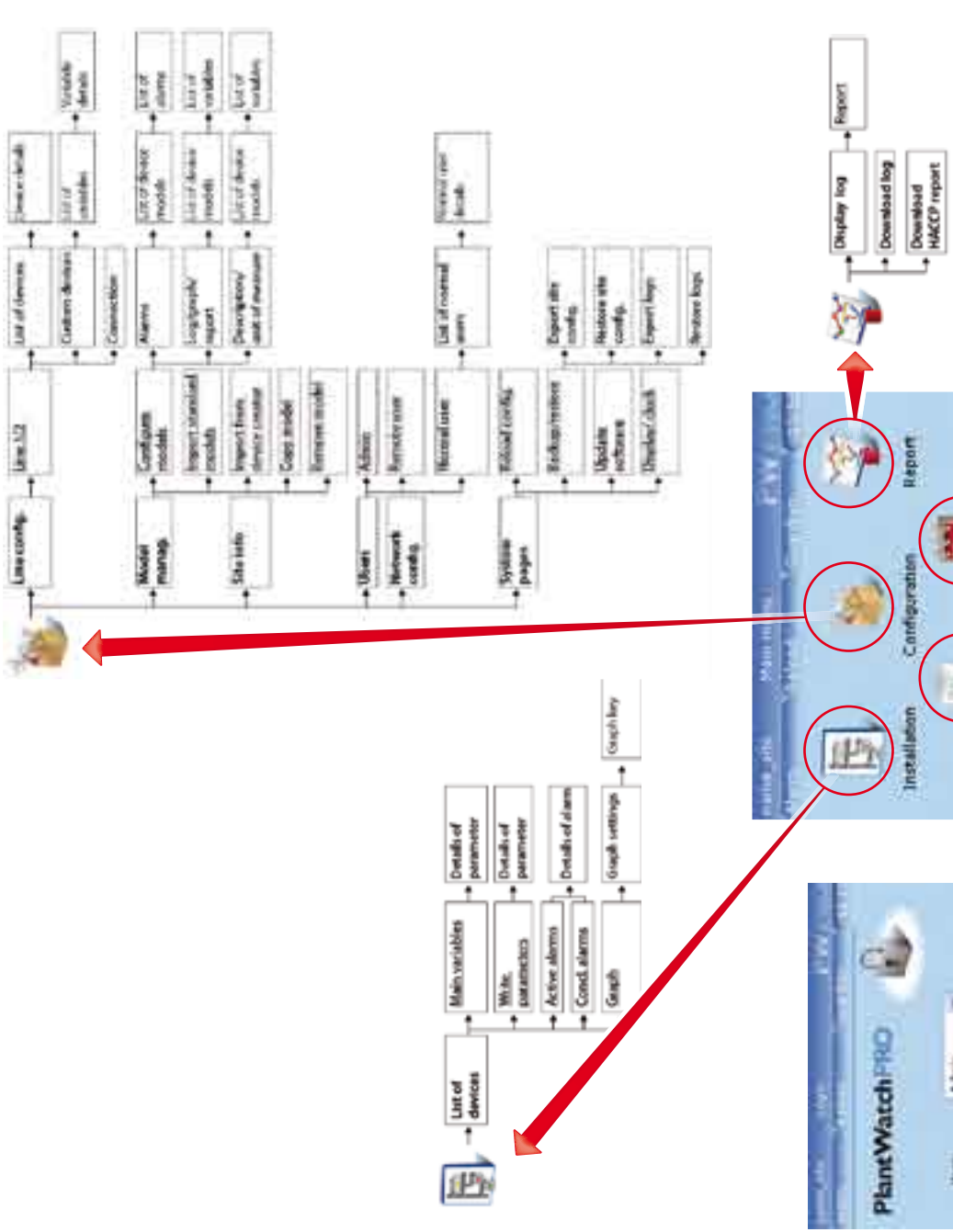
PlantWatchPRO installed in any location can be monitored via an internet connection, as long as it is connected to the telephone line and the PC being used is fitted with a modem.
This function can be used to display on the PC's screen the exact same data that appears on the PlantWatchPRO touchscreen display and access almost all the PlantWatchPRO functions.

How to connect to PlantWatchPRO from a remote PC via web

Once at the PC, in Microsoft Windows (any version), from the Control panel create a new Internet connection, as follows:

1. Access CONTROL PANEL → NETWORK AND INTERNET CONNECTIONS.
2. Then choose CREATE A NEW CONNECTION → CONNECT TO THE INTERNET → SET UP MY CONNECTION MANUALLY → CONNECT USING DIAL-UP MODEM.
3. Enter the name of the connection.
4. Enter the telephone number of the telephone line that PlantWatchPRO which is connected to.
5. Choose from the options that allow the connection to be available to all users or only this specific user.
6. Enter "PVRemote" as the USER NAME and "PD35010" as the PASSWORD.
7. The connection has been created; now open a web browser (for example Windows Internet Explorer® or Mozilla Firefox™) and enter the following IP address: 192.1.1.2.
8. The window of the browser will automatically show the PlantWatchPRO screen, allowing access in the same way as for the touchscreen version.

15. FUNCTION TREE



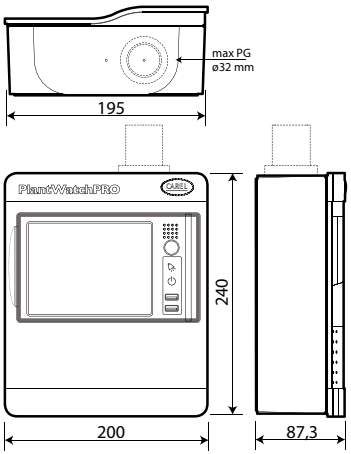
Scheduler
Alarms/events
10
10
Active alarms
Cons. alarms
Events
Relays
Downld. alarms
Details of alarm
Details of event
I/O config.
Fax config.
SMS config.
e-mail config.
Remote access
Relay config.
e-mail
Dial-up
Relay details
Phone book
Fax
Sms
E-mail
Remote users access
Rules config.
Time bands
Actions
Rules
Schedulers
Daily
Weekly
Special event
Notification
Scheduled activities
Rule details
Scheduled rule details
Daily details
Weekly details
Special event details
Notification details
Scheduled activity details
I/O test
Guardian
Notifications
Priority

16. TECHNICAL SPECIFICATIONS

Power supply	90-240 V, 50-60 Hz
Power input	6.7 W (typ), 9 W (max)
Operating conditions	5T50 °C, 20 to 80 % rH
Storage conditions	-20T60 °C, 20 to 80 % rH
Index of protection	IP65 (with cover closed)
Risoluzione display	240 x 320 pixels
Type of LCD	5.7" TFT, (12 o'clock), 262144 colori
Other functions of the board	RTC, Watchdog (1000 ms), JTAG
Digital outputs	2 N.O. relays, 5 A 30 Vdc / 250 Vac,
	1 N.O. relay, 6 A 250 Vac,
Serial ports	2 RS232 serial ports on RJ45 connector
	1 RS485 serial port, master, hd, opto-isolated, 19200 bps
	1 RS485 serial port, master, hd, opto-isolated, 19200 bps, Modbus® RTU
Digital inputs	2 opto-isolated inputs at max. 300 baud
Backlighting	White LEDs
Buzzer	Max 80 dB at 10 cm
USB ports	2 standard HOST ports, type A connector, on front
	1 standard HOST port, type A connector, internal
Internal modem	Socket Modem, PSTN V.34/33.6K data rate
Electromagnetic compatibility	IEC EN 55022 (1999)
	IEC EN 55022/A1 (2001)
	IEC EN 55022/A2 (2003)
	IEC EN 55024 (1999)
	IEC EN 55024/A1 (2002)
	IEC EN 55024/A2 (2003)
Environmental pollution	Conforms to RoHS directive
Cover material	Transparent polycarbonate
Chassis material	Plastic

Dimensions (mm)

wall mounting



17. ANALYTICAL INDEX

Note:

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