PlantVisorPRO

Plant supervision

CAREL

ENG Quick guide

Integrated Control Solutions & Energy Savings

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Contents

1. INTRODUCTION

Purpose of this guide

This quick guide is designed for all those who want to quickly set up PlantVisorPRO, with the following objectives:

- display real-time device values, including alarms and events

- display values recorded on one or more devices on a time graph

- send notifications via SMS, fax, e-mail in response to alarms/events or periodically

- operate relays in the field or set variables in response to alarms/events or periodically

- print immediate reports or request periodical prints

- program parametric devices

- define system and PlantVisorPRO users

- start guardianPRO for increased supervisor security

- customise the PlantVisorPRO windows

Notes

For further details on these procedures, see the PlantVisorPRO online guide and use the search engine to bring up pages with additional information on the required subject.

2. KEY

	Note	**Notes** contain important information, highlighted after the text they refer to.
	Warning	**Warnings** indicate procedures that, if not fully observed, may damage associated devices or equipment.

3. COMPLETING INSTALLATION

Completing installation of PlantVisorPRO

Unit installation must be correctly completed before starting setup.

1. Follow the setup wizard and enter all the information required.
2. Carefully read the User License.

Warning: PlantVisorPRO is license-protected software. Once installed, the trial version can be used for a maximum of 30 days. The trial version will stop working at the end of the trial period unless activated. See the procedure for Activating PlantVisorPRO .
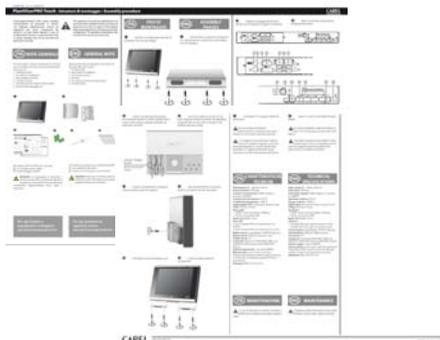
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3. Enter the password to access the system

4. The **PlantVisorPRO Shell** panel appears after installation and PlantVisorPRO starts automatically.

5. On the login page, set the administrator password.

6. By default the PlantVisorPRO Configuration wizard opening page is displayed.

Enabling PlantVisorPRO for web access

PlantVisorPRO pages can be viewed by remote user via a simple Internet connection with Internet Explorer and the static IP assigned by the machine where PlantVisorPRO is installed.

1. Go to **PlantVisorPRO Shell→** IP **configuration**.

2. Provide the information required.

➡ Open port 443 for HTTPS access in the network Firewall.

3. Go to **PlantVisorPRO Shell→** **Computer settings→** *<password>***→ Access→ Restart.**

4. Wait for PlantVisorPRO to restart.

5. Enter the machine's static IP followed by the PlantVisorPRO folder in the Internet browser address bar on any PC in the network.

Esplorazione a schede - Windows Internet Explorer

https://xxx.xxx.xxx.xxx/PlantVisorPRO/

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Protecting system functions and user administration

> **Note**: *System accounts are only required to access the functions indicated above. To set program accounts, i.e. to set user permissions for PlantVisorPRO users, see* **User configuration**.

1. Under **PlantVisorPRO Shell→** [icon] **User management**: passwords and privileges configured previously can be managed or modified.

⚠ *Warning: WRITE DOWN YOUR PASSWORD! If you no longer have a password, contact CAREL customer care.*

4. SETTING UP THE SYSTEM

Quick configuration wizard

A simple procedure is available under the 🔧 **Configuration → Quick configuration wizard** menu to set the basic settings of PlantVisorPRO, divided into six steps.

Benvenuto in PlantVisorPRO
Questo wizard ti aiuterà a configurare il PlantVisorPRO in pochi passi. Clicca il bottone **start** per iniziare la procedura di configurazione. Clicca **exit** per uscire dal wizard. Il wizard si compone di:

PASSO 1: Registrazione prodotto e informazioni sul sito.
PASSO 2: Configurazione linea.
PASSO 3: Settaggio parametri.
PASSO 4: Gestione allarmi e configurazione I/O.
PASSO 5: Configurazione report HACCP.
PASSO 6: Configurazione GuardianPRO.

Note: *To no longer display the Quick configuration wizard when starting, select the corresponding flag; to start the guided procedure click **Start**, while to exit the procedure, click **Exit**.*

The following steps comprise simple system setup:

- Product registration and site information

- Line configuration

- Parameter settings

- Alarm management and I/O configuration

- HACCP report configuration

- GuardianPRO configuration.

Product registration

PlantVisorPRO is a product protected from license. The trial version works for 30 days after installation. To enable the licensed version, enter the activation code; this can be requested using the special forms available on the CAREL website.

1. Enter the serial number indicated on the CAREL label on the bottom of PlantVisorPRO.

2. On the CAREL website PlantVisorPRO page (www.carel.com), click **Get PlantVisorPRO activation code.**

3. In the **Installer** and **User** section, enter the required data and carefully read the privacy information.

4. Under **Data required to issue the code** enter:

   a. Serial number.

   b. MAC address indicated under **System pages→ Information**.

5. Confirm acknowledgement of privacy information.

6. Under **Installation** enter the data needed for company statistics.

7. Click **Next**, check the data and click **Activation code**: if the data are correct, **activation code** will be displayed; note this down.

8. Under **Configuration→ System pages→ Information**, select the product to be registered, enter the serial number and the activation code.

9. Click **Activate**: the product is licensed and can be used.

Line configuration

This page is used to create, modify and remove serial lines. To configure a serial line, the connection features and connected devices need to be specified. For serial lines using the Carel protocol, connected devices can be detected automatically. For further details on configuration, see the paragraph "Putting devices on line".

Parameter setting

Quick configuration of connected devices based on specific settings for the type of application and then setting the main control parameters. All the parameters not configured in this procedure are set to the default value. To apply the chosen configuration for the device, click …
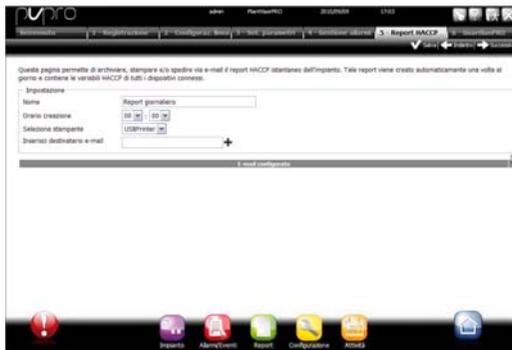

Alarm management and I/O configuration

This page is used to configure alarm notifications and the corresponding transmission channel. For further details see the chapter on configuring actions in response to alarms/events.

HACCP report configuration

To save, print and/or send HACCP reports by email.

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GuardianPRO configuration

This screen can be used to increase system security by configuring possible supervisor malfunction signals and the channels used to notify such events. For further details see the paragraph "Configuring GuardianPRO".

Putting the devices online

After having completed hardware installation, is devices must be put on line to let PlantVisorPRO recognise the devices connected to the serial ports. After the devices are on line, check each device status in the details page and continue with system configuration.

Note: *Default settings are already installed in PlantVisorPRO for standard CAREL devices. Once online, the main variables and log variable data can be viewed and alarms managed.*

1. For each serial line: under **Configuration→ Site configuration** click **Add** and set the features of the serial line. To select the COM port, if the USB-RS485 converter is used, follow the automatic recognition procedure. If there are CAREL devices on the line, these will be recognised automatically using the automatic function, otherwise proceed with points 2-3.

2. Choose the type of device.

3. Add physical devices to the line either individually or by address range

4. Customise the description of each individual device.
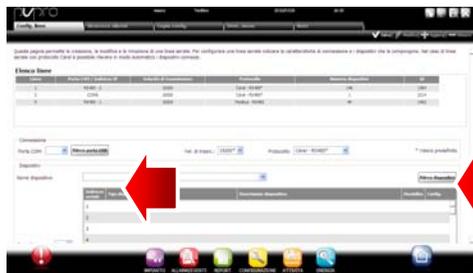
Note: *Under **Configuration→ Site configuration→ Site→ Notes,** record the first line configuration.*

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5. ***Repeat the entire procedure for other lines.***

6. **Installation → Global** displays the list of all field devices.

7. Check device status in the **Status** column:

    a. 🟢 (green). Device connected and operating.

    b. ⚪ (black). Device not connected.

    c. 🔵 (blue). Device connected but disabled.

    d. 🔴 (red). Device alarm.

➤ ***To stop receiving alarms from a device***: under 🔧 ***Configuration→ Site configuration→ Site***, *double click the line and check the device to be disabled and then click Save.*

➤ ***To print the list of devices***: *under* 🔧 ***Installation→Global ,*** *click* [🗂 Dispositivi] .

➤ ***To delete alarms and events generated when putting the devices on line***: *under* 🔧 ***Configuration→ System pages→ System*** *click* ***Clear list of alarms and events***.

Customising device configuration

Standard online CAREL devices are preset. Default settings include **alarm** management, **logs**, **and variables to be monitored** on the homepage and **HACCP and log graphs**. A non-standard device is set during model creation using **Device Creator**.

This procedure shows how to customise device settings. Custom settings can be propagated to other devices of the same type or exported for future use.

1. Under ![icon] **Configuration→ Site configuration** select the row in the table and click edit (pencil).

2. The line details are displayed, with the list of devices connected. Click ![icon] corresponding to a device in the table.

3. The **Main** device configuration page is shown.
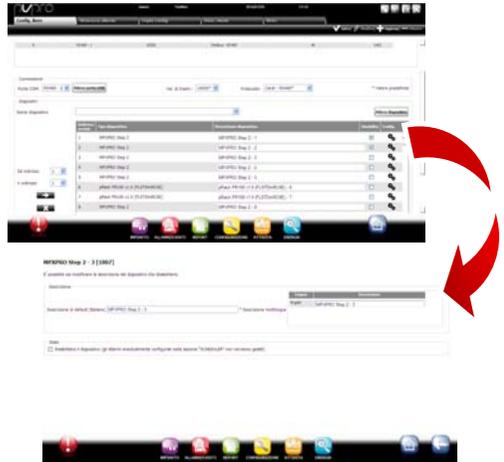
4. Open the **Alarm safety** page: set how often PlantVisorPRO Locale checks for device alarms.

5. Set the required settings for alarm monitoring frequencies and other related features.

   Note: to disable all the alarms for a device (except the offline alarm) disable the device under ![icon] **Configuration→ Site configuration→Site** and click ![icon] .

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6. Open the page then the **Log configuration** page.

7. Double click the variables to be recorded and define the log recording procedures.

8. Click **Save**: the configuration will be saved but is not yet active.

9. Open the **Main variables** page.

10. In the **Probes, status, inputs/outputs** table choose whether to make the variable visible and if so where on the page (probe status section, general section). Click ⬆ to compress the table.

11. The **Parameters and commands** table is shown: repeat the same operation for the variables listed.

12. Click **Save**: the configuration will be saved but is not yet active.

➤ **Note:** *to define the order in which the selected variables are displayed, click* **Go to sort page**.

13. Open the **Description list** page.

14. Double click the variables to customise the code, description and unit of measure.

15. Click **Save**: the configuration will be saved but is not yet active.

Propagating the configuration to identical devices

The settings on the device chosen as the "sample" can be propagated to similar devices. This saves time when setting up complex sites.

1. Under ⚙ **Configuration→ Site configuration→ Copy configuration** select the customised device, choose which parts of the configuration to propagate and choose the devices where the settings will be copied.

➡ **Note:** a complete configuration can be exported and used on another site using the **export** function

➡ **Note:** previously saved configurations can be loaded using the **import** function.

2. Click **Save**: the recipient devices will be customised with the specific configuration.

3. Restart the engine.

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Displaying device details

Custom settings can be checked after restarting the PlantVisorPRO engine. Wait the required amount of time (based on the parameter recording frequency) to display log data (e.g.: graphs).

1. Under **Installation → Devices**, click the configured device.

2. The **Main** device detail page is shown.

3. Click **Read-only variables** to display the probe table.

4. Open the **Parameters** page to display all parameters for the device, divided into groups.

5. Open the **Alarms** page to display all the active or closed alarms relating to the device.

6. The **HACCP graph** and **Log graph** pages behave in the same way.

7. The **Log graph** page, for standard devices, displays the graph area with traces in progress. Under the graph is the list of logged variables. The checked variables are included in the graph.

> **Note**: to add a variable from the log to the list, open the **Log configuration** page under **Device configuration** using the Quick Link.

8. To modify the graph scale, select a different range of display in the table below (**Lower limit** and **Upper limit**)

9. To add or remove variables from the graph, select/unselect these in the table.

10. Click **Plot**: the graph will be updated.

> **Note**: to edit the interval displayed, click **Search** and select the desired duration.

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Programming parametric devices

Parametric device parameters can be edited on just one device and then propagated to devices of the same model.

1. Under **Installation** → **Global** double click the device.

2. The device detail page is shown. Click the **Parameters** page.

3. A page is shown for selecting all the categories of parameters available for the device. Click **Refresh** to update the values read by the device.

4. To propagate *only* the modified parameters to devices of the same model, first enter the values in the fields.

5. Click **Propagate**: a window is displayed for choosing the devices to propagate the values to.

6. Choose the devices and click **Set**: the new values are propagated.

Note: "***" indicates that the value cannot be read.

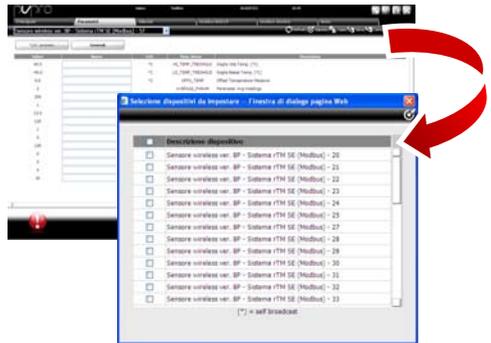**Note**: if the text box is empty, the value on the device remains unvaried.

Note: To propagate all parameters *to devices of the same model*, first click **Copy** and then **Propagate**.

To **print the configuration parameters**: under **Report**→ **Commissioning report,** add the variables to be printed for each model. Click **Print**.

Defining access profiles and users

Each user accessing PlantVisorPRO requires a user account.

Users belonging to a certain profile will have access to specific functions (read-only or read/write) and a specific group of devices.

It's recommended to use the default User, Service and Installer profiles provided.

To configure a new account, proceed as follows:

1. Open the **Users** page.
2. Enter the user name.
3. Assign one of the existing profiles.
4. Enter the password.
5. Click **Add**: the user is added to the list.

Note: If necessary, to customise the profiles enter **Configuration** → **User configuration** → **Profiles** and define a new profile.

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Creating report templates

For a snapshot of site conditions or operations, log or HACCP variables can be printed and/or exported. Reports can be printed on demand or automatically at regular intervals. A report template must first be set in both cases. The template indicates the time period in question (real time or at a set interval), data acquisition frequency (only for period reports) and the variables to be printed/exported.

Note: *before defining a report, set the variables to be recorded in logs and recording procedures. See procedure Customising device configuration.*

Note: *after having defined the report template, it can be printed immediately (under* **Report→**

Report archive → Print*) or at regular intervals based on the scheduler (under* **Activities→Activity scheduler***).*

1. Under **Report→ Report management→ Configuration** enter the name of the report template (e.g.: power consumption), the interval, layout, sample frequency, output format and whether it's an HACCP report.
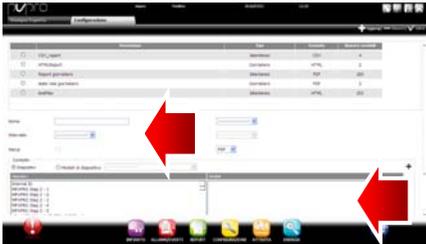
Note: *if set as an HACCP report, only the variables defined as HACCP in the log configuration are included.*

2. Click **Devices** or **Device models** and select a model: the list of devices of that type appears in the left column and its log or HACCP variables appear in the one on the right.

3. Select all the variables to add to the report and click ✚: the selected variables appear in the **Current configuration** table. Select another device model and add other variables.

4. Click **Add**: the report template is added to the report list.

5. To call up a report manually, open the **Report** page and select the template.

6. If this report is not real-time, the frequency and period can be set.

7. Click **Print**.

5. CONFIGURING ACTIONS BASED ON ALARMS/EVENTS OR SCHEDULING

Configuring notification channels via fax, SMS, email and relay

PlantVisorPRO can notify maintenance technicians and site managers of any alarms/events or scheduled activities. To do this, set addressees and set and test fax, SMS and email delivery channels. Field relays can also be energised or de-energised in response to an alarm.

1. Under ⚙ **Configuration** → **Peripheral I/O configuration**→ **Fax** define:

   a. dialup modes

   b. one or more fax recipients

2. Click **Save**.

   Note: if an external modem has been set and the PC has not been rebooted, refresh the peripherals. See *Configuring installed peripherals* .

3. Under ⚙ **Configuration** → **Peripheral I/O configuration**→ **SMS** define:

   c. dialup modes

   d. one or more SMS recipients

4. Click **Save**.

5. Under ⚙ **Configuration** → **Peripheral I/O configuration**→ **email** define:

   e. delivery modes

   f. one or more email recipients

6. Click **Save**.

7. Under 🔧 **Configuration → Peripheral I/O configuration→ Relay** for each relay define:

      g.   energising signal value

      h.   type of reset and duration for timed reset.

8. Click **Save**.

➡ For internal relays, active status is set in safe-mode (automatic activation in the event of power failures)

9. Under 🔧 **Configuration → Peripheral I/O test**:

      i.   Choose the type of peripheral to test.

      j.   Choose a recipient.

      k.   Click **Test**: the fax, SMS or email is sent to the recipient.

10. Under 📋 **Alarms/events→ Events list** check the tests results.

Defining system actions in response to alarms/events

In PlantVisorPRO, the system's automatic response to certain site conditions can be set. To configure these procedures, **rules** need to be defined. A rule features the following elements:

1. **Action** that represents the system's response (send an SMS, fax, email, energise a relay, set a variable, open a window, print a report or alarm row, call remote supervisor).

2. **A calendar of time bands** indicating the times when these functions should be active.

3. **Condition** (alarm or event) that represents the site status that triggers the response.

1. Under **Activities → Alarm and event management → Actions** enter the name of the action (e.g.: "email service").

2. Click **Add**: the new action is added with a red background, indicating that the action needs to be specified.

3. Double click the action: the page of possible actions is shown. Open the required option (e.g.: to send an email, open the **email** page).

4. Double click a recipient in the address book.

5. Click to add this to the email recipients.

6. Click **Save**.

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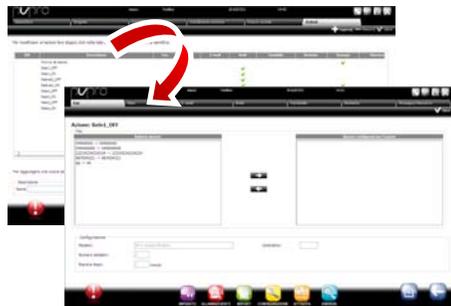
8. Under **Activities → Alarm and event management→ Time bands** enter the calendar name (e.g.: "Weekly Mon-Fri daytime"), choose the days of the week and a period (start time<end time) in which the time band is active.

9. Click to add the time band.

10. Repeat to add the number of time bands needed.

11. Click **Add**: the calendar is added to the list of calendars.

Note: *different notifications can be set according to the time band. For example, an SMS can be sent for an alarm or event during business hours and a FAX when closed.*

Note: *a calendar is made up of one or more time bands (i.e. weekly, from Monday to Friday, first time band: 8.30-12.30, second time band: 15.30-19.30).*

Note: *the calendar can be recurrent (i.e. set holidays) or occasional (i.e. holidays without set dates).*

12. Under **Activities ➔ Alarm and event management ➔ Alarm conditions** enter the name of the alarm condition (e.g.: "no showcase communication ").

13. Choose the device and the alarm variable to be checked.

14. Click to add the variable.

15. Repeat to add the number of variables that need to be checked.

16. Click **Add**: the new condition is added to the list of conditions.

⚠ *Warning: the message area shows a notification requiring the engine to be restarted and the direct command to do so. This means PlantVisorPRO needs to be restarted to make the changes effective.*

➡ *Note: to set a single rule for all site alarm conditions, select **All alarms**.*

➡ *Note: set a rule for all alarm conditions based on priority, select the priority to be managed under **Priority**.*

17. Under **Activities ➔ Alarm and event management➔ Rules** enter the name of the rule (e.g.: "email no showcase communication").

18. Choose the alarm condition or event (e.g.: "No showcase communication ").

19. Choose the time band in which the action is enabled (e.g.: "dayshift weekdays").

20. Choose the action (e.g.: "email to service")

21. Define the delay for the action

22. Enable the rule

23. Click **Add**: the new rule is added to the list.

24. Click **Save**.

25. Restart the engine.

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Defining scheduled actions

In PlantVisorPRO actions to be performed periodically can be configured. To configure these actions, **rules** need to be defined. A rule features the following elements:

1. **Action** that represents the system's response (send an SMS, fax, email, energise a relay, set a variable, open a window, print a report or alarm row, call remote supervisor).

2. **A calendar of time bands** indicating the times when these actions should be performed.

1. Under **Activities → Activity scheduler → Actions** enter the name of the action (e.g.: "Power consumption report").

2. Click **Add**: the new action is added with a red background, indicating that the action needs to be specified.

3. Double click the action: the page of possible actions is shown. Open the required option (e.g.: to periodically print a report, open the **Report** page, choose the report template and then save).
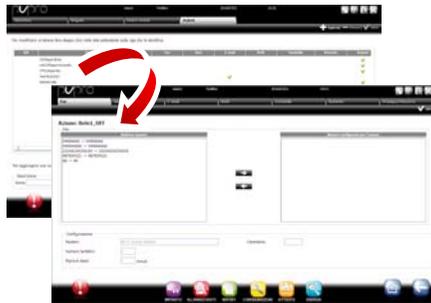
Note: to configure a sign-of-life, simply set a periodical action to a recipient in the address book.

4. Under ![icon] **Activities → Activity scheduler → Time bands** enter the name of the calendar (e.g.: "Every morning"), the time when action must be performed.

5. Click ![arrow] to add the time band.

6. Repeat to add the number of time bands needed. The action will be performed once in each time band.

7. Click **Add**: the calendar is added to the list.

![arrow icon] *Note*: *a calendar is made up of one or more time bands (i.e. weekly, from Monday to Friday, first time band: 8.30-12.30, second time band: 15.30-19.30).*

![arrow icon] *Note*: *the calendar can be recurrent (i.e. set holidays) or occasional (i.e. holidays without set dates).*

8. Under ![icon] **Activities → Activity scheduler → Rules** enter the name of the rule (e.g.: "Daily power consumption report").

9. Choose the time band in which the action will be performed (e.g.: "Every morning").

10. Choose the action (e.g.: "Power consumption report")

11. Enable the rule

12. Click **Add**: the new rule is added to the list.

13. Click **Save**.

14. Restart the engine.

Site calendar

By accessing **Activities** → **Site calendar** groups of instruments can be defined for control and setting scheduled activities together.

1. Under enter the name of the group, indicate the category of controller and select the devices making up the group.

2. click ✚ **Add** to create a new group

3. under **Activities** → **Activity scheduler** → **Scheduler** select the category being configured and Standard to set weekly scheduling.

4. click for the day and the group being configured.

5. in the window enter the activation time band and any value to be set for the entire group.

6. Repeat the operation for all the time bands in each group for each day of the week.

7. When configuration has been completed click ✔ Save.

Note ➡ set the same configuration for other days of the week, click on the "source" day and on the "target" days.

Note ➡ to configure a special schedule for an individual day, under Activities → Activity scheduler → Scheduler Exceptions indicate the special day and then complete the configuration.

6. IMPROVING SECURITY

Configuring guardianPRO

Site supervision security is guaranteed by guardianPRO, which works in tandem with PlantVisorPRO and ensures correct operation.

Specifically, it uses privileged notification channels to warn whether all set peripherals are on and if the PC is under conditions of stress by default. When appropriately set it can also warn whether certain alarms were recognised within a certain time period or if certain variables changed in a certain period of time.

⚠️ *Warning: the message area shows a notification requiring the engine to be restarted and the direct command to do so. This means PlantVisorPRO needs to be restarted to make the changes effective.*

1. Under ![wrench icon] **Configuration** → **System pages** → **guardianPRO** click **Enable notifications** and select the recipients for the notifications from the table

2. Click **Save**.

3. As an optional configuration, control of active alarms and **Verify probe verification** can also be enabled.

➡ **Note**: the guardianPRO signals should be enabled on all available notification channels.

➡ **Note**: to configure the active alarm control criteria, under 🔧 **Configuration → Site configuration → Alarm safety** choose, for each alarm priority, whether the alarms can be acknowledged by users with suitable authorisation, how long the alarms remain active (without being reset and acknowledged) before guardianPRO sends a signal.

➡ **Note**: if guardianPRO is not configured (see the previous steps in this procedure), it will be activated with the default configuration.

4. Restart the engine.

7. CUSTOMISING THE PLANTVISORPRO INTERFACE

The type of opening page, the logon page background and logo can be changed, and the maximum session duration can be set.

1. Under ![icon] **Configuration** ➔ **System pages**➔ **Custom settings** set the following options:

        a.   Change logon page image

        b.   Change page header logo

2. Click **Save** where necessary.

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