

remote supervision solutions





(TA) User manual



Integrated Control Solutions & Energy Savings

ENG

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<u>CAREL</u>

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1. INTRODUCTION

RemotePRO is a software for remote supervision of sites running Carel supervision systems (PlantVisorPRO, PlantWatchPRO, pCOWeb, boss). The software manages alarms, collects logged data and performs comparative analysis on site performance. By centralising all this information, a single interface can be used to troubleshoot any problems in site operation. Reports can be sent by email at set times, so as to transfer the information needed for a prompt response in the event of critical situations.

Other advantages include a complete overview of all the sites, improved maintenance, reduced operating costs and identification of actions to be taken as a priority to improve performance.

Personnel who can benefit from access to centralised data include:

- site maintenance managers, who receive notifications and can plan service and repairs;
- refrigeration specialists, who can monitor trend in cabinet temperature;
- energy managers, who can compare energy consumption between sites and identify where optimisation is needed.

1.1 Main features

Overview:

- user interface accessible via web
- security guaranteed by the HTTPS protocol; differentiated access based on the type of "user" (administrator, installer, maintenance, user);
- remote monitoring of the supervisors connected to the server, with life testing;
- alarm management, with the possibility to acknowledge and inhibit alarms;
- · scheduled alarm notifications using rule engine;
- alignment of data logged by local systems;
- · comparative analysis for evaluation of site performance;
- alarm dashboards: reports and statistical analysis to support evaluation of site quality;
- centralised document archive (for example, user manuals or maintenance diagrams).

1.2 Software modules

The system is based on scalable architecture, and the functions can be extended at any time. This allows the system to be updated while safeguarding the initial investment (by only adding the new modules that are needed).

Code	Description
RVSTDRM000	Remote maintainer
RVSTDDM000	Centralised data management
RVSTDRV000	Multi company management
RVSTDEN000	NRGDash

1.2.1 Remote maintainer

- Basic module, required as part of the system, featuring:
- user profiling and secure access to the system;
- management of local supervisors, configuration of the remote connection and enabled functions;
- list of connected sites, with the possibility to access the local supervisors;
- · life test to check supervisor operating status.
- remote management of local users for centralised password settings (available only with PlantVisorPRO 2 and boss);
- centralised alarm management, with the possibility to acknowledge alarms and check the status of individual systems;
- alarm notification by email with scheduled rule engine;
- alarm dashboards to identify the sites with most problems;
- centralised document archive.

1.2.2 Centralised data management (*)

The module is used to align a subset of logged data acquired from the supervisors and save it in a centralised database. This database can then be used to:

- access the data offline (without connecting to the local supervisor);
- create Excel reports of data to export or send by email;
- analyse temperature conformity;
- generate easy-to-read HACCP reports.

*Module RVSTDRM000 "Remote maintainer" is a pre-requisite

1.2.3 Multi company management (*)

The module is used to define different access levels to the system and increase data security by defining a network of sites and companies. This package also allows:

- detail monitoring of maintenance activities;
- display of geolocation maps;
- creation of custom site pages.

*Module RVSTDRM000 "Remote maintainer" is a pre-requisite

1.2.4 NRGdash – Energy Benchmark (*)

Energy analysis module. This offers the following functions:

- comparison of energy, water, gas usage;
- · detailed dashboard of system performance;
- parameter broadcasting (remote setting).

*Modules: RVSTDDM000 "Centralised data management" and RVSTDRV000 "Multi company management" are pre-requisites.

1.3 Main functions

1.3.1 Access to local supervisors via Internet

RemotePRO can acts as the connection between the outside world and a protected network supervisors, providing users with access while at the same time guaranteeing a high level of security.

Two examples of this architecture are:

- 1. external access (via Internet) to the local network: the local supervisors are protected inside the customer's private network. The only device exposed to the Internet is the RemotePRO server;
- access via VPN: the local supervisors are connected to (different) private networks. The RemotePRO server is the only device that can communicate with these networks, over secure "point-to-point" connections (VPN).

In both situations, the local supervisors that were otherwise not accessible except from a single point of access, are now available to authorised users.

In these situations RemotePRO guarantees a high level of security, as the local supervisors are not exposed and HTTP/HTTPS communication to the supervisors (the only type permitted) is filtered.

1.3.2 Synchronisation

The operation that allows RemotePRO to receive information regarding supervisor and alarm configuration is called synchronisation. There are three main stages to the process:

- 1. authentication: the local supervisor identifies itself to RemotePRO;
- 2. RemotePRO queries the supervisor for its configuration:
 - list of connected devices (compete with description, model and information on the line and address);
 - list of variables pertaining to which RemotePRO will receive alarms or data;
- 3. RemotePRO also queries the supervisor for the list of alarms that have been activated.

When synchronising the first time, RemotePRO requests the complete configuration of the local supervisor, which includes:

- all connected devices;
- all alarm variables relating to alarms that have been activated;
- all logged variables (these are configured on the local supervisor to be shared with RemotePRO);
- all alarms that have been activated in the past (maximum 5 days).

When synchronising the next time and subsequently, RemotePRO will only request new information or any changes to the previous data. If more than 5 days have elapsed since the previous synchronisation, the complete list of activated alarms will not be requested, but rather only a part of it.

Synchronisation can be started in different ways:

- via notification rules at the start/end of an alarm situation on the supervisor (recommended).
- manually from RemotePRO;
- manually from the local supervisor (with connection test to RemotePRO);
- scheduled at regular intervals on the local supervisor.

1.3.3 Life test

The life test is the procedure used by RemotePRO to check access to the local supervisors and network status. There are two types of test:

- Outgoing life test: RemotePRO periodically attempts to connect to the local supervisors and check that they can be accessed. After the user has set the number of daily tests, the system will distribute these uniformly throughout the day, starting from the first test at midnight. RemotePRO will sequentially poll all of the supervisors on which the outgoing life test is configured. For example, if 4 tests have been configured, these will be performed at: 00:00, 06:00, 12:00, 18:00, before starting over again at 00:00 the next day.
- 2. Incoming life test: the local supervisors, when suitably configured, will periodically contact RemotePRO, and the latter verifies that a connection has been established.

In this case, the aim is to configure the local supervisors to call RemotePRO in set time bands. The number of time bands can be set, and will be divided into intervals of equal duration throughout the day. At the end of each interval, RemotePRO will verify that all the supervisors on which the incoming life test has been configured have made at least one call. For example, if 4 tests have been configured, the system will verify that the supervisors connect at least once between 00:00 and 06:00, 06:00 and 12:00, 12:00 and 18:00 and finally 18:00 and 00:00 the next day, before then starting over again.

1.3.4 Data alignment

The data alignment function is used to download to RemotePRO the logged data relating to a subset of variables on the local supervisor. The list of these variables is configured individually on each supervisor (for details on the configuration procedure, see the manual for the specific supervisor). Data alignment is an automatic process that is performed, depending on the configuration, from one to three times a day (i.e. every 24, 12 or 8 hours) starting at a set time. Data alignment thus makes the variable logs directly available on RemotePRO, without needing to connect to the supervisor. The same data can be used for certain operations, such as export, display graphs, analysis and KPI calculation.

1.3.5 Guardian

The "Guardian" function enables a process that verifies the correct operation of RemotePRO. If problems occur, the Guardian signals the malfunction via email, and if the problem persists may attempt to solve it by rebooting the server (if configured accordingly).

1.4 Architecture

The supervisor network can be configured to manage different types of sites, with different needs. Examples include.

Situation 1: RemotePRO and local supervisors connected directly to the Internet with a public static IP address or the same DNS name. On each network (LAN: Local Area Network) there is a firewall to prevent intrusion. The user can check the entire site from just one point, avoiding the need for direct connections to each local system. The local supervisors can be accessed directly to acquire data for detailed analysis only when required.





Situation 2: the customer has a private network that the local supervisors are connected to. RemotePRO is installed on a different network, for example, the service network. The two networks are connected via a permanent VPN tunnel. Users who wish to manage alarms and process the data can access RemotePRO using a public static IP address.





Situation 3: both the local supervisors and RemotePRO server are installed on the customer's network. External users can access via the server's public IP or a VPN tunnel connection, for example to check alarm status or connect directly to each supervisor.



Fig. 1.c

Situation 4: same as situation 3, with the difference that users can access from the outside using the RemotePRO server's public address, meaning RemotePRO is the only exposed device outside of the LAN.





NAVIGATION 2.

A web browser is used to navigate the interface (see the technical specifications for compatible browser). The RemotePRO interface is available in different languages. The access language is the one the user has selected as the default. Nonetheless, the display language can be changed via the drop-down menu provided. Each user is assigned a profile (administrator, installer, maintenance, user) that determines what information is displayed and what operations are permitted.

Header 2.1

The top part of the graphic interface shows a series of sections that are common to each page and are used to quickly access the main information:



2.2 Page body

In general, the pages can be divided into two main categories:

- 1. List pages: the records are grouped in tables with filtering, sorting and page display options;
- Detail pages: double clicking a row in a table accesses complete information on that record, as well as allowing a number of basic functions (create, 2. display, edit, delete)

2.3 List page

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These pages show a list of uniform information (for example on supervisors, alarms or users). The data displayed can be filtered by applying the criteria available at the top of the page.



(*) When moving the cursor over certain areas, a tooltip is displayed with additional information.

Function buttons relating to the rows (after having selected with \square)

No. of rows displayed per page

2.4 Detail page

Double clicking a row on a list page accesses the corresponding detail page. This page displays more complete information on the record. The detail page can be used to edit the information or perform specific operations:



Note: If navigating on a mobile device, the double click is replaced by a *long press*.

2.5 Elements to support navigation

On the pages are a number of elements (*widgets*) that allow the interface to be used more quickly, simplifying the operations to display, enter or select the data.

2.5.1 Navigation path

On each list page, the details of a record can be accessed by double clicking the row (example: site details). Once having accessed the detail page, the tabs provide different levels of detail (for example, details of a supervisor at a specific site). To track these steps, the complete path is shown on the page header, with the various details

Supervisor	Controllers	Maintenances	Comments	Upload Documents	record retrieved
Configuration + Installa	ation > <u>Plants</u> [Carel HQ]	Supervisors			
_					

Fig. 2.d Each underlined item is a *link* that can be used to go back along the path.

2.5.2 Help list

To select an element from a long list of set values, click to open a new overlapping window. Subsequently, by double clicking the desired row, the related value is entered in the field.



2.5.3 Calendar

Dates can be entered manually (using the conventional format of the display language), or using a calendar (20 button).





2.5.4 Tags

Tags are labels that can be applied to an entity so as to identify data much more easily when searching. For example, a site can be tagged according to the type, size or any given characteristic.

The following entities support the use of tags: • plants (sites)

- devices
- model variables

The tags can be assigned both on the detail and the list page, typing a string directly (without spaces) or by pressing the 🔎 button and selecting a tag from those entered previously for the same type of entity:

supervisors



2.6 Procedure

The RemotePRO interface has been designed to make operations uniform and simple from the very first time it is used. Interaction with the pages is managed in a uniform and repeatable manner. The main operations are also available for most of the transactions.

2.6.1 Data filters

Each list page a number of fields in the header to filter the data displayed.

Active Alarms	Reset Alarms								record retrieved
Alarms 🕈 Alarms List				Ø 04:	32 🚯				Refresh Cancel
Description: Supervisor: Day / Night: → diurnal, no	pocturnal, unde	From Devic Reso	n: ce:	· 注:	To: Priority: +	4 [21] ⊁		Status: Duration: all	- 1
Area:		Plant	ti], []	Division:				7 0 b M [11 15/170]
Filters	THO BELIGHT			rows 3			NII	2 3 4 5 6	/ 6 / / [11-15/1/6]
RA = RS	🗧 Start Time 💠 End Tir	ne 🗧 Duration	Supervisor	C Device	Description	🗧 Plant	= Area	Division AK	👫 🛊 RE 🖌 Arrival Time
🔳 💟 🕕 2/21	I/17 8:40:13 AM.392 🔹	10h 08m 53s	Supermarket 05	Meat and chicken 412	OFFLINE	Supermarke	* South America	Customer 0	cancelled 1/17 8:34:18 AM
2/21	l/17 8:40:43 AM.394 🗰	10h 08m 24s	Supermarket 05	Fruit and vegs 432	OFFLINE	Supermarke	* South America	Customer 0	2/21/17 8:34:18 AM
2/21	l/17 8:40:13 AM.392 🗰	10h 08m 53s	Supermarket 05	Meat and chicken 410	OFFLINE	Supermarke,	* South America	Customer 0	2/21/17 8:34:18 AM
2/21	I/17 8:40:13 AM.392 📫	10h 08m 53s	Supermarket 05	Meat and chicken 411	OFFLINE	Supermarke	* South America	Customer 0	2/21/17 8:34:18 AM
2/21	I/17 7:37:45 AM.140	11h 11m 22s	Supermarket 02	LT 43M	Slave 3 with alarms	Supermarke	* Europe	Customer 0	2/21/17 7:35:58 AM

Fig. 2.h

Procedure: display a subset of data

1. Set the values in the entry fields

2. Click "Refresh"

Note: when the procedure has been completed successfully, the message "record retrieved" is shown in the system message area.

Procedure: to reset the filter fields

1. Click "Cancel"

🛇 Note: when the procedure has been completed successfully, the message "record retrieved" is shown in the system message area.

2.6.2 Create

To enter a new entity in the system (area, maintenance operators, ...) start on the corresponding list page and click the "new" button on the row to access the detail page with all the fields to be entered.

Supervisors Plants Areas	Area	staintenances	Plants	Comments	Upinad Documents	
Configuration + Installation	Configuration	on + Installation Areas				
	rannat lat	in the second				
lode:	Coder	•		Descrip	tion: +	1
v Delate						-
ters A	Audit Data					
	Creation Date Last Update:	ei		User: User:	2	
		Fig. 2.i				

Procedure: create a new entity

1. Click the "New" button

- 2. Enter the specific data for the new entity
- 3. Click the "New" button
- Note: when the procedure has been completed successfully, the message "record created" is shown in the system message area.
- 🔺 Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.

2.6.3 Delete

An entity can be deleted on its detail page:



Procedure: delete an entity from the detail page

1. Click the "Delete" button

2. Click "OK" in the confirmation popup

🛇 Note: when the procedure has been completed successfully, the message "RECORD DELETED" is shown in the system message area.

A Important: if the procedure is NOT successful, the problem found is displayed in the system message area.

A second option, especially useful for multiple deletions, is available directly on the list page:



Procedure: delete an entity from the list page

- 1. Select the rows to be deleted using the corresponding checkboxes 📃
- 2. Click the "Delete" button Delete
- 3. Click "OK" in the confirmation popup

🔿 Note: when the procedure has been completed successfully, the message "RECORD DELETED" is shown in the system message area.

A Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.

2.6.4 Edit

Entities can also be edited in two different ways. The first is from the detail page, accessed by double clicking the desired row. This option is available for all entities that can be configured:

Area	Montenunites	Tonta	Connients	Upload Documents			Area	Maintenances	PERITS	ton shits	Uplicati Liocoment	it s
Configuration	+ Installation + Accus				-Delete Vijslate		Configuration +	Installation debas				Delete Visodate
General Inform Code:	vetion Añac		Description: * [-Am	e Pacific and Japan			General Informat Code: AF	9901 PAC		Description: *	Asia Pacific and Japan	
PART PART						Fig. 2.1	HUGH DIRIS					

Procedure: edit an entity from the detail page

- 1. Edit the desired fields
- 2. Click the "Save" button V

Note: when the procedure has been completed successfully, the message "RECORD UPDATED" is shown in the system message area.
 Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.

For some attributes of certain entities, for example where an overview of the changes being made is useful to manage the configuration more clearly, the data can be edited directly on the list page:

Variable Model						record retrieved
Configuration + Installation >	Models					🚓 Refresh 🌱 Cancel
Model: IR 33 - C Code: Type: Parameter: Tags:		D	I Description: Address: Subdevice:	R 33 - C		
Update			row	s 100		【 ↓ 1 2 3 ▶ 】 [1-100/219]
Filters 🔺						
Code	🗄 Type 🗮 Address	Description	= Colour	🚽 Parameter	= Subdevice	Tags
S_SONDA_1	analog 4	Probe 1 value	yes 🔻	Temperature 🔻	01	(temp x) i
SET_POINT	analog 16	Set point	yes 🔻 🔳	Set Point 🔻	01 🔻	0
S_ALM_TIMEOUT_PORTA	alarm 25	Door open time-out alarm	no 🔻	Water 🔻	01 •	0

Fig. 2.m

Procedure: edit an entity from the list page

- 1. Edit the desired fields
- 2. Select the desired rows using the corresponding checkboxes
- 3. Click the "Update" button Update
- 4. Click "OK" if a confirmation popup is shown

Note: when the procedure has been completed successfully, the message "record updated" is shown in the system message area.

A Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.

Note: whenever editing a field corresponding to a row in a table, the row will automatically be highlighted in blue, the pencil will be displayed and the checkbox will be checked. This is to easily identify which rows have been edited and what changes have been made. If no changes are to be made to a specific row, simply deselect the corresponding checkbox and proceed with the others.

2.6.5 Comments

For the main system entities (areas, maintenance operators, customers, sites and supervisors) a specific page is available for sharing useful information, note or general comments. From the entity's detail page, click the comments tab and write a new message directly in the area provided:

Customer	Address Book	Plants	Maintenances	Comments	Upload Documents	record retrieved
Configuration + Compa	ny > <u>Customers</u>					🚓 Refresh 📥 New 🛛 🗸 Update
Notes: Type your me	sages here to share them wit	h other people				1
				Fig	j. 2.n	
Procedure: crea	ate a new comr	nent				
1. Enter the te	ext in the editab	le area				
2. Click the "N	ew" button					

O Note: when the procedure has been completed successfully, the message "record updated" is shown in the system message area.

A Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.

Each comment created is added to a list shown immediately below the editable area. Comments can be created by different users and edited by all users with write access to the page.

	Upload Documents	Comments	Maintenances	Plants	Address Book	Customer
🗫 Refresh 🛶 New 🗸 Upo				4	pany > <u>Customers</u>	Configuration + Com
	h			n other people	nessages here to share them wit	Notes: Type your m

Fig. 2.o

Procedure: edit a comment

- 1. Double click the row to be edited so as to display it in the editable area
- 2. Edit the text
- 3. Click the "Save" button 💟

Note: when the procedure has been completed successfully, the message "record updated" is shown in the system message area.

- A Important: if the procedure is NOT completed successfully, a description of the problem found is shown in the system message area.
- Note: comments are deleted in the same way as deleting any other entity from the list page.



2.6.6 Upload documents

RemotePRO stores a centralised archive of commonly-used documents on the sites and systems, such as manuals, diagrams and specifications. From the entity's detail page, access the documents tab and then load a new file:



Procedure: upload a new document

- 1. Click the "Upload" button E, a popup will be displayed
- 2. Enter the description of the file
- 3. Click Choose File
- 4. Select the file to upload
- 5. Click the "Upload" button

Note: when the procedure has been completed successfully, the message "record created" is shown in the system message area.

O Note: the button for selecting the files may change according to the browser used.

The uploaded documents will then be available at any time to all authorised users, and can be downloaded to the connected device:

	Upload Documents	Comments	Maintenances	Controllers	Supervisor
💏 Refresh 🄭 Cancel 🛃 Uplo				Ilation > <u>Supervisors</u>	Configuration + Insta
	Description:			4 21	Name:
Page 1 [2/2]	rows 100				Delete
= File Size = Upload Date Download	Description			12	Name *
42 KB 20/07/16 16:42:09 🐣				Logo	📃 logo.png 🛛 L
2858 KB 20/07/16 16:43:03 🐣				Jser Manual	User_Manual.pdf L
				xcel I 🗮 PDF	Export options:

Procedure: download di a new document

Fig. 2.q

Click the green arrow I on the desired row

Note: Documents are deleted in the same way as deleting any other entity from the list page.

2.7 Menu

The navigation menu to access all of the pages is always displayed at the bottom of the pages. The fully expanded menu (when all the modules are active) is described below

Alarms Supervisor status Alarms list Priority synoptic Maintenance rating System register	Usage Benchmarks Details Configuration	Performance Temperature compliance Configuration	Reports Export reports Reports archive Configuration	Configuration Plant Company Contacts Administration Access Channel	Activities Rules engine Variables Parameter broadcast
	<u>@</u>			2	



2.8 User profiles

System security is guaranteed by access via credentials and management of user profiles (roles) to define the level of authorisation. Each authenticated user is assigned one or more roles. The set of operations that each user can perform depends on which roles have been assigned. The general rule is: administrators have access to all of the functions; the other profiles have read/write access to the functions inherent to their specific tasks:

- 1. installers connect the devices and load their templates;
- 2. maintenance operators manage alarms, check graphs and schedule reports;
- 3. users do not modify the system, but can create reports, display and export data.

			User	Maintainer	Installer	Administrator	
Alarms							
	F Supervisor	rs Status					
		+ Supervisors Status	read + connect + export	read + connect + export	read + connect + export	read + connect + export	
		⊢ Supervisor Status Detail	read + view custom map	r/w + syncro + align + r/w vars	r/w + syncro + align + r/w vars	r/w + syncro + align + r/w vars	
		L Controllers	read + export	read + export	read + export	read + export	
	1	Log Data Graph	read + export	r + export + align + manage graph	r + export + align + manage graph	r + export + align + manage graph	
		⊢ Local Events	read + export	read + export	read + export	read + export	
		Local Notes	read + export	read + export	read + export	read + export	
		^L Geolocalization	read + view custom map	read + view custom map	read + view custom map	read + view custom map	
	⊢ Alarms Lis	t					
	1	+ Active Alarms	read + connect + export	r + connect + export + manage alarm	r + connect + export + manage alarm	r + connect + export + manage alarm	
	1	Alarm Detail	read + notes + connect	r + connect + manage alarm + r/w notes	r + connect + manage alarm + r/w notes	r + connect + manage alarm + r/w notes	
		L Reset Alarms	read + connect + export	r + connect + export + resolution	r + connect + export + resolution	r + connect + export + resolution	
	1	L Alarm Detail	read + notes + connect	r + connect + manage alarm + r/w notes	r + connect + manage alarm + r/w notes	r + connect + manage alarm + r/w notes	
+ Priority Synoptic		noptic					
	l .	⊢ Reset	read + export	read + export	read + export	read + export	
		^L Active	read + export	read + export	read + export	read + export	
	⊦ Maintenar	nce Rating					
		+ Reset/Resolution	read + export	read + export	read + export	read + export	
	1	F Active/Resolution	read + export	read + export	read + export	read + export	
		+ Service	read + export	read + export	read + export	read + export	
	1	L Plant	read + export	read + export	read + export	read + export	
L System Registry							
		+ Events	read + export	read + export	read + export	read + export	
		^L Configurations History	x	x	read	read	
		^L Configurations History Detail	x	x	read	read	
					· · · · · · · · · · · · · · · · · · ·		

2					
⊢ Benchmai	rk				
I.	F Benchmark	read + export + schedule			
1	F Analysis	read + export + schedule + add vars	read + export + schedule + add vars	read + export + schedule + add vars	read + export + schedule + add vars
1	L Report Templates	read + export + write			
1	L Report Detail	read + write	read + write	read + write	read + write
F Detail					
	F Plant	read + export	read + export	read + export	read + export
1	+ Supervisor	read + export	read + export	read + export	read + export
1	F Device	read + export	read + export	read + export	read + export
I	F Kpi Templates	read + export + write			
1	L Kpi Template Detail	read + write	read + write	read + write	read + write
	^L Kpi Configuration	x	x	x	read + write + restore default
⊦ Configura	tion				
	F Plant	х	x	read + write	read + write
	+ Supervisor	x	x	read + write	read + write
	F Energy	x	x	read + export + write + elab	read + export + write + elab
	F Water	х	x	read + export + write + elab	read + export + write + elab
	L Gas	х	x	read + export + write + elab	read + export + write + elab
		F	÷	•	•

Performance
i chionnance

1⊦	F Temperature Compliance				
	F Period				
	F Daily				
	L Period per Device				
	F Kpi Templates				
	L Kpi Templates Detail				
	^L Kpi Configuration				
^L Configuration					
	L Thresholds				

read + export	read + export	read + export	read + export		
read + export	read + export	read + export	read + export		
read + export	read + export	read + export	read + export		
read + write + export	read + write + export	read + write + export	read + write + export		
read + write	read + write	read + write	read + write		
x	x	x	read + write + restore default		
x	x	read + export + write + elab	read + export + write + elab		

Installer

Maintaine

Administrato

F Temperature Compliance

⊢ Period

- F Daily
- L L Period per Device
- . ⊢Kpi Templates
- L Kpi Templates Detail L
- ^L Kpi Configuration
- ^L Configuration
- ^L Thresholds

				User
R	eports			
	⊢ Export Rep	ort		submit export
	F Reports Archive			read + export + download
	^L Configurati	ion		
		F Schedulec	l Reports	read + export + write
		1	^L Scheduled Report Detail	read + write
		L Report Ter	nplates	read + export + write
			^L Report Template Detail	read + write

read + export	read + export	read + export	read + export
read + export	read + export	read + export	read + export
read + export	read + export	read + export	read + export
read + write + export	read + write + export	read + write + export	read + write + export
read + write	read + write	read + write	read + write
х	x	x	read + write + restore default
х	x	read + export + write + elab	read + export + write + elab
User	Maintainer	Installer	Administrator
submit export	submit export	submit export	submit export
read + export + download	read + export + download	x	read + write + export + download
read + export + write	read + export + write	read + export + write	read + export + write
read + write	read + write	read + write	read + write
read + export + write	read + export + write	read + export + write	read + export + write
read + write	read + write	read + write	read + write

Installer

Configur	Configuration					
⊢ Ir	istallation					
1	F Superviso	rs	x	x	read + export + write	read + export + write
1	I.	F Supervisor Detail	x	x	read + syncro + alignment + write	read + syncro + alignment + write
1	I.	F Controllers	x	x	read + export + change model	read + export + change model
1	I.	L Controller Detail	x	x	read + write	read + write
1	I.	F Comments	x	x	read + write + export	read + write + export
1	I.	^L Upload Documents	x	x	read + write + export + download	read + write + export + download
1	F Plants		x	x	read + write + export	read + write + export
1	I.	F Plant Detail	x	x	read + write	read + write
1	I.	F Comments	x	x	read + write + export	read + write + export
1	I	^L Upload Documents	x	x	read + write + export	read + write + export
1	F Areas		x	x	read + write + export	read + write + export
1	I	^L Area Detail	x	x	read + write	read + write
1	^L Models		x	x	read + export + upload + write	read + export + upload + write
1	I.	^L Variable Model	x	x	read + export + upload + write	read + export + upload + write
1	^L Maps Libra	ary	x	x	read + write + upload	read + write + upload
1		^L Map Library Detail	x	x	read + write + upload	read + write + upload
⊦ C	ompany					
1	F Customer	S	x	x	read + write + export	read + write + export
1	I.	F Customers Detail	x	x	read + write	read + write
1	I.	F Comments	x	x	read + write + export	read + write + export
1	I.	^L Upload Documents	x	x	read + write + export	read + write + export
1	^L Maintenar	ices	x	x	read + export	read + export
1		F Maintenance Detail	x	x	read	read
1		⊢ Comments	x	x	read + write + export	read + write + export
1		^L Upload Documents	x	x	read + write + export	read + write + export
ΗA	ddress Book		x	x	read + export + write	read + export + write
1	^L Contact		x	x	read + write	read + write
ΗA	dministration					
1	F Modules		x	x	x	read + write + export
1	F System		x	x	x	read + write + syncro + align
1	⊢Edit i18n		x	x	x	read + write
1	Log file exp	port	x	x	x	read + write + export
F Access						
1	⊢ Change U	ser Data	read + write	read + write	read + write	read + write
1	^L Local User	S	x	x	x	read + export + write
1		Local Users Detail	x	x	x	read + write
L C	hannel					
	F Email Cor	figuration	x	x	x	read + write + test
	LAN Confi	guration	x	x	x	read + write

Maintainer

Activi

ity						
⊢ Rules Engi	ne					
1	F Notificati	on Groups	x	read + export	x	read + export
1	1	F Notification Group Detail	x	read	x	read
1	1	^L Contacts	x	read + export	x	read + export
1	⊢ Rules		x	read + export	x	read + export
1	1	^L Rule Detail	x	read	x	read
1	^L Time Band	łs	x	read + export	x	read + export
1		F Time Band Detail	x	read	x	read
1		^L Notification Groups	x	read + export	x	read + export
1						
F Variables			x	x	x	read + write + export
L Parameter	s Broadcast					
	F Template	5	x	read + write + export	x	read + write + export
	1	^L Template Detail	x	read + write + export + send	x	read + write + export + send
	F Broadcast Schedulations		x	read + write + export	x	read + write + export
	1	^L Broadcast Schedulation Detail	x	read + write	x	read + write
	^L Broadcast Operations		x	read + export	x	read + export
		^L Broadcast Operations Detail	x	read	x	read

3. SUPERVISOR CONFIGURATION

This chapter first of all describes the organisation of the multi-company environment and the visibility rules for exchanging information between the different roles (customers, maintenance operators). This is followed by a description of the site as a group of supervisors assigned to a specific area, and the supervisor as the basic unit that receives data from the monitored controllers. The final part describes how alarm notifications are managed: defined groups of users receive alarm signals via email during specified time bands.

3.1 Multi-company environment

The multi-company environment is used to create a network of sites and companies (customers and maintenance operators) and define different access levels to safeguard data security. Access to the data saved in RemotePRO must be restricted so as to:

- simplify operations for the specific user: for example, maintenance operators only see the restricted set of data that involve their tasks, without needing to search through irrelevant information;
- guarantee the confidentiality of sensitive data: each company must only be able to see the data for the sites it manages or owns.

To achieve these objectives, the network of supervisors connected to the remote system is divided into different areas, and each site is assigned to its owner (customer).

Once the configuration procedure has been completed:

- maintenance operators can access all the sites situated in the area assigned to their company;
- different maintenance companies can manage the same group of sites (they can be assigned to the same area);
- the customer only sees the supervisors belonging to their company.

Example:



Plants and maintenance companies are linked together by the "pertinent area" attribute. Consequently, maintenance companies that operate in the orange/green/blue areas shown in the following example only see the sites (and the corresponding supervisors) located in the corresponding area, even if they belong to different customers.

As regards customers, see the following table:

Customer Visibility: site/area	Customer 1 - blue D / green E / green	Customer 2 - red A / orange B C / orange
	E / green G / blue	B, C / orange F,/ blue

In summary, once having created the customers, areas, maintenance operators and sites as shown in the previous diagram:

- 1. customer 1 (blue) will only see sites: D, E, G;
- 2. customer 2 (red) will only see sites: A, B, C, F;
- 3. the maintenance companies operating in the orange area will see sites: A, B, C;
- the maintenance companies operating in the orange drea will see sites; y, g, e
 the maintenance companies operating in the green area will see sites; D, E;
- the maintenance companies operating in the blue area will see sites: F, G.

3.2 How to configure the environments

The main entities that define a working environment are areas, customers, maintenance operators and sites (plants). It is important to define these appropriately from the start, in order to correctly and easily access all of the data and suitably manage authorisations.

3.2.1 Area

Areas are a simple way to group different sites together. The definition of areas is quite flexible: for example, labels can be used to identify geographical regions, or the area can be named after the company that operates there.

Menu path: Configuration \rightarrow Installation \rightarrow Areas

LIST PAGE

Supervisors Plants Areas Models	Maps Library	record retrieved
Configuration + Installation		🚓 Refresh 🖒 Cancel
Code:	Description:	
New Delete	rows 5	
Filters A		
🗐 🌣 Code	* Description	and the second
NCSA - The Americas, being North, Central and		
AM * America		
AS * Asia		
APAC * Asia Pacific and Japan		
EU * Europe		
Export options: Excel PDF		

DETAIL PAGE

record retrieved		Upload Documents	Comments	Plants	Maintenances	Area
🗖 Delete 🛛 🗸 Update		- 24 ²		25	✦ Installation → <u>Areas</u>	Configuration
					rmation	General Info
	tica	being North, Central and South Ame	ption: * - The Americas	Descr	NCSA	Code:
	ig. 3.b	F				
Description	Field			Description	1	eld
Description of the area	Description			Area code	1	ode

The procedures for creating and deleting areas are similar to those described under "Navigation".

▲ Important: if there are sites associated with an area, that area cannot be deleted. The following message will be shown in the system message area: "Check linked entities". To unlink a site from an area, go to: Configuration → Installation → Plants and assign the site (plant) to a new area.

3.2.2 Customers

Customers are the companies that own or operate one or more sites.

Menu path: Configuration \rightarrow Company \rightarrow Customers

LIST PAGE

Infiguration + Company				-			Refresh) Ca
ode:	City: Country:			Zip C	ode:		
Delete	rows 5					H 1 2 3	4 ▶ ▶ [6-10/1
ers 🔺							
		A AND			And the second s	the second se	21
= Code * Description	Address		= Country	Zip Code	Phone	Mobile F	ax Email
Code Pescription CR4 Customer 03	Address Main Street	City New York	Country USA	Zip Code 552841	Phone	Mobile F	Email custom@cc3.com
Code * Description CR4 Customer 03 CR4 Customer 04	Address Main Street Via dell'industria,11	÷ City New York Brugine	 Country USA ITALY 	Zip Code 552841 35020	Phone (+39) 049 97 16 611	Mobile F	ax Email custom@cc3.com info@carel.com
Code * Description CR4 Customer 03 CR4 Customer 04 CR5 Customer 05	Address Main Street Via dell'industria,11 Pl.za Trinidad	÷ City New York Brugine Madrid	Country USA ITALY Spain	Zip Code 552841 35020 12009	Phone (+39) 049 97 16 611 (+34) 334 009 456	Mobile F	ax Email custom@cc3.com info@carel.com
Code * Description CR4 Customer 03 CR4 Customer 04 CR5 Customer 05 CR6 Customer 06	Address Main Street Via dell'industria,11 Pl.za Trinidad 16 Precision Street	City New York Brugine Madrid Kya Sands, Randburg	Country USA ITALY Spain South Africa	Zip Code 552841 35020 12009	Phone (+39) 049 97 16 611 (+34) 334 009 456 +27 (0)12 123 2130	Mobile F	ax Email custom@cc3.com info@carel.com info@customer2.com

DETAIL PAGE

Customer	Address Book	Plants	Maintenances	Comments	Upload Documents	record retrieves	
Configuration	Company > <u>Customers</u>	101				- Delete V Updat	e
Data							1
Data							
Code:	CR4			Desc	ription: \star Customer 04		
Address:	Via dell'industria,11			City:	Brugine		
Zip Code:	35020			Coun	try: ITALY		
VAT Number				Tax	Tode:		
Phone:	(+39) 049 97 16 611			Fax:			
Email:	info@carel.com			Mobi	le:		
Notes:							

Fig. 3.c

_		
Eia	2 4	
FIU.	u	

Field	Description	Field	Description
Code	Customer code	Description	Description of the customer
Address	Telephone number, address, email	City	Telephone number, address, email
ZIP code		Country	
VAT number		Tax code	
Telephone		Fax	
Email		Mobile	
Notes			

The procedures for creating and deleting customers are similar to those described under "Navigation".

Important: in the event where there are sites (plants) associated with a customer, that site cannot be deleted. The following message will be shown in the system message area: "Check linked entities".

To unlink a site from a customer, go to:

Configuration \rightarrow Installation \rightarrow Plants

and assign the site to new customer. If the record is deleted successfully, the message "Record deleted" is shown.

3.2.3 Maintenances

Maintenance operators or engineers (maintenances) are the companies responsible for the maintenance of one or more sites.

Menu path: Configuration \rightarrow Company \rightarrow Maintenances



Customers	Maintenances								record retrieved
Configuration + Company						_			Cance
Code: Description:		City:	Zip C Area	ode:		1	P		
New Delete		rows 5						H 1 1 2	3 4) [1-5/17]
Filters 🔺									
Code	# Description	🗧 Area	= City	Country	Zip Code	Phone	Mobile	Fax	Email
APAC_SC Service Compa	any APAC	* Asia Pacific and Japan	London	England	321432	+27 (0)12 123 2130			service@apac.com
NS_SC North Service		- The Americas, being North, Central and South Ame	Boston	USA	23112	+11 (02) 8790 40 34			service@north.com
EMEA_SC Service Compa	any EMEA	* Europe, the Middle East and Africa	Rome	Italy	45698		+39 (02) 8790 40 34		info@emeaservice.com
EP_CMP Energy Part I.	N.C.	* Latin America and the Caribbean	Berlin	Germany	43212				cst@energyp.de
		Fig. 3.e							

DETAIL PAGE

Maintenan	ce Engineer	Address Book	Plants Comments	Upload Documents		- record retrieved
Configuration	Company > Maintena	nces				- Delete Vupdate
Data	APAC SC			Description	Service Company APAC	
Area: *	APAC AS	a Pacific and Japan		Description	The rest of the rest of the rest	
Address:	Main Avenue, 16			City:	London	
Zip Code:	321432			Country:	England	
VAT Number:	54543239320			Tax Code:		
Phone:	+27 (0)12 123 2130			Fax:		
Notes:	service@apac.com			Pioblie:		
				Fig. 3.f		
Field		Des	cription	Field		Description
Code		Cus	tomer code	Descr	iption	Description of the customer
Address		Tele	phone number, address, em	nail City	•	Telephone number, address, email
ZIP code				Coun	try	
VAT numbe	r			Tax co	ode	
Telephone				Fax		
Email				Mobi	e	
Notes						

The procedures for creating and deleting customers are similar to those described under "Navigation".

3.2.4 Impianti

L'impianto rappresenta un sito dove sono installati 1 o più supervisori.

Menu path: Configuration \rightarrow Installazion \rightarrow Plants

LIST PAGE

Supervisors	Plants	Areas	Models	Maps Library					record retrieved
Configuration + Installation									Refresh 🕤 Cancel
Code: Description: Tags:				City: Zip Code:		Area:	P		
New Update Delete					rows 5		H 4	1 2 3 4 5	▶ ▶ [11-15/22]
Filters 🔺									
Code		* Description		Division		= Area	City Zip Code	Tags	
CR4_AO Hyperstore 02				[CR4]Customer	03 [APAC]* Asia Pacific and Japan			(hypermarket ×)	1
CR4_GM Hyperstore 03				[CR4]Customer	03 [EMEA]* Europe, the Middle East	and Africa		(hypermarket #)	1
CR4_LO Hyperstore 04				[CR4]Customer	03 [NORAM]* North America, being	Canada, the United States of Ameri	ca and Mexico	(hypermarket ×)	1
CR4_SC Hyperstore 05				[CR4]Customer	03 [LATAM_B]* South America			(hypermarket x)	1
BD_001 Supermarket 01				[BDK]Customer	05 [EU]* Europe			(supermarket »)	1
					Fig. 3.g				

CARF

DETAIL PAGE

Plant Address Bo	ok Supervisors Maintenances	Comments Opload Documents Peco
Configuration + Installation > Plants	8	Delete
Data		
Code: CR4_LO		Description: * Hyperstore 04
Area: * NORAM	* North America, being Canada, the United S 🔎	Division: * CR4 Customer 03
Tags: hypermarke	et M)	
Plant Typology: Hyper	•	M2: 5500.0
Opening Date From:	4 21	Closure:
Geolocalization	Otta	Latitude 45.268121280142886
T	Montre	
- 1. M	JA JE	Longitude -75.50628662109375
Sec. Sec.	Leaflet © OpenStreetMap	
Address:		City:
Zip Code:		Country:
Phone:		Fax:
Email:		Mobile:
Notes:		
		A
		Fig. 5.0
ld	Description	Field Description
de	Site code	Description Description
et all a second a se	Area the site belongs to	Customer Site owner/operator

Field	Description	Field	Description
Code	Site code	Description	Description
Area	Area the site belongs to	Customer	Site owner/operator
Type of site	Hypermarket, Super, Convenience, Express, Discount, Cold store, Other	M2	Site normalisation factor (for e.g. m2)
Ópening date from	Date the site opened	Closing	If closed, date the site was closed
Latitude	Geolocation coordinate	Longitude	Geolocation coordinate
Address	Address, telephone, email	City	Address, telephone, email
ZIP code		Country	
Telephone		Fax	
Email		Mobile	
Notes			
Disect survey in a			

Plant opening

Start alarm Start time of the "day" a	alarm time band	End alarm	End time of the "day" alarm time band	b

SLA (Service Level Agreement) Maintenance (Hours) Very high _______Number of hours within which maintenance operators must manage alarms with the specified priority Very high

High		
Medium		
Low		

🛕 Important: if deleting a site, the data relating to all the supervisors on that site will be lost.

Note: the type of site, opening time and normalisation factor (B) are useful parameters for comparing different sites in terms of energy consumption (see the \mathbf{O} chapter on consumption KPIs). To change the normalisation factor, go to Usage -> Detail -> (tab) KPI configuration: "label of normalised value";

🜔 Note: the opening time is used to classify alarms as day (sun icon in: Alarms -> Alarms list) or night (moon icon).

Note: the definition of the "Service Level Agreement" for the site affects the percentage of alarms resolved based on priority. This is used to compare the performance of different maintenance companies (see paragraph" Maintenance rating").

The procedures for creating and deleting customers are similar to those described under "Navigation".

Procedure: enter exact position (geolocation) of the site

- 1. enter the latitude and longitude coordinates;
- click the save button 💟 2.

🛇 Note: when the procedure has been completed successfully, the message "record updated" is shown in the system message area.

Procedure: site position by map

- 1. click
- search for the desired point on the map 2.
- click the point 3.





오 Note: when the procedure has been completed successfully, the message "RECORD UPDATED" is shown in the system message area.

3.3 Supervisor detail

Each supervisor represents an individual supervisory system and belongs to a specific site.

3.3.1 Supervisors

Menu path: Configuration \rightarrow Installazion \rightarrow Supervisors (double click the supervisor row)

DETAIL PAGE

record retrieves			Maps Library	Models	Areas	rs Plants	Supervisor
💏 Refresh 🏠 Cance						+ Installation	Configuration
P	Plant:			Description:]	•	Identifier:
K ← 1 2 3 4 5 → N [1-5/22]		rows 5				Delete	New Update
							Filters 🔺
N = D = O = I Tags.	pe 💠 IP Address 💠 I 🗮 A 🕆 E 🗘 N 🕸 (🗢 Plant 💲 Type		 Description 			🔲 🗧 Identifier
🧇 (building x)	192.168.20.50 ≒ 🎺	[CW_AU] Building 01				Building 01	carel01
V (building x)	192.168.200.193 ≒ 👽 🤝	[CW_C2] Building 02				Building 02	carel02
V (building x)	192.168.200.190 ≒ 🥪	[CW_C3] Building 03				Building 03	carel03
w building x i	192.168.200.192 ≒ 🥪 🥪 🥪	[CW_HQ] Building 05				Building 05	carel05
	197 168 17 33	[CW HR] Building 06				Building 06	carel06

LIST PAGE

Supervisor	Controllers	Maintenances	Comments	Upload Documents	15		record retrieved
Configuration + Installation	on > <u>Supervisors</u>						🔲 📥 Delete 🤍 Update 🛶 Synchronise 📕 initial status
-							
Connection							
Supervisor Type:	* PlantVisorPRO	T			Connection:	* LAN	1
Identifier:	* Carel05				IP Address:	* 192.168.200.192	
Password:	* •••••				Description:	* Building 05	
MAC Address:	* [00110	En or			Language:	Italiano •	
Tags:	(building x)	ing us			112.	110	
Functions							
Turctors							
Connection From Intern	het:				Incoming Life T	art:	
Alarms List:					Events:	v	
Data:	ā				Notes:	2	
PCOWeb Credentials							
Utto Uron	-				ETR IIcon		
Http Password:					FTP Password:	<u> </u>	
Supervisors Available							
Total:	79						
pnnection pe of supervisor	boss, pCOWeb	<u>), PlantWatchPRC</u>	D, PlantVisorPRO,	Fig. 3.k	nced	Connection	Type of channel used for communication
pnnection pe of supervisor entifier	boss, pCOWeł Unique identii the password supervisor in c supervisor inte	2, PlantWatchPR(fication string ins to validate incor question. If these erface, no conne	D, PlantVisorPRO, side RemotePRO ning and outgoi e data do not cor ction will be esta	Fig. 3.k , <u>PlantVisor Enhan</u>). This is used toge ng connections to respond to those ablished.	nced ether with to the e set on the	Connection IP address	Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP. as this is temporary.
pnnection pe of supervisor entifier ssword	boss, pCOWeł Unique identii the password supervisor in ce supervisor inte This is used to connections to	 PlantWatchPR(fication string ins to validate incor question. If these erface, no conne gether with the o the supervisor. 	D, PlantVisorPRO, side RemotePRO ing and outgo e data do not cor ciction will be est. identifier to valic . If these data do	Fig. 3.k , PlantVisor Enhan). This is used toge ng connections to respond to those ablished. date incoming and not correspond to	ether with o the e set on the d outgoing to those se	<u>Connection</u> IP address	 Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP, as this is temporary. Extended description, e.g. name/ address of the site
nnection pe of supervisor entifier ssword	boss, pCOWel Unique identii the password supervisor in c supervisor inte This is used to connections t on the superv	p. PlantWatchPRC fication string ins to validate incor question. If these <u>arface, no conne</u> gether with the o the supervisor. <u>isor interface, no</u> <u>sumeric identific</u>	D, PlantVisorPRO, side RemotePRO ning and outgoi e data do not cor ction will be est identifier to valic of these data do connection will action code of th	Fig. 3.k , PlantVisor Enhan). This is used toge ng connections to respond to those ablished. date incoming and not correspond to lbe established. e. petwork card. Q	aced ether with o the e set on the d outgoing to those se	Connection IP address	Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP, as this is temporary. Extended description, e.g. name/ address of the site
nnection pe of supervisor entifier ssword AC address	boss, pCOWeł Unique identii the password supervisor in c supervisor inte This is used to connections t on the superv Unique alphar "pCOWeb" sup	<u>p. PlantWatchPRC</u> fication string ins to validate incor question. If these <u>erface, no conne</u> gether with the o the supervisor. <u>isor interface, no</u> umeric identific iervisors.	D, PlantVisorPRO, side RemotePRO ming and outgoi e data do not cor iction will be est identifier to valic . If these data do o connection will cation code of th	Fig. 3.k , PlantVisor Enhan . This is used toge ng connections to respond to those ablished. date incoming and not correspond to l be established. re network card. O	nced ether with o the e set on the d outgoing to those se Dnly for	Connection IP address Description tt Language	Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP, as this is temporary. Extended description, e.g. name/ address of the site Defines the language used to download the descriptions of the variables and controllers.
nnection pe of supervisor entifier ssword AC address ant	boss, pCOWeł Unique identii the password supervisor inte supervisor inte This is used to connections tt on the superv Unique alphar "pCOWeb" sup Site the super	<u>2</u> , PlantWatchPR(fication string ins to validate incor question. If these grface, no conne gether with the p the supervisor. isor interface, no numeric identific ervisors. visor belongs to	D, PlantVisorPRO, side RemotePRO ning and outgoi e data do not cor iction will be est identifier to valic . If these data do o connection will cation code of th	Fig. 3.k , PlantVisor Enhan O This is used toge ng connections to respond to those ablished. date incoming and not correspond to l be established. e network card. C	nced ether with o the e set on the d outgoing to those se Dnly for	Connection IP address Description Language M2	 Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP, as this is temporary. Extended description, e.g. name/ address of the site Defines the language used to download the descriptions of the variables and controllers. Normalisation factor (e.g. square metres)
ennection pe of supervisor entifier ssword AC address ant gs	boss, pCOWeł Unique identii the password supervisor inte This is used to connections to on the superv Unique alphar "pCOWeb" sup Site the super Tags (labels er	<u>p. PlantWatchPR(</u> fication string in: to validate incor question. If these gether with the p the supervisor. isor interface, no numeric identific ervisors. visor belongs to itered by the use	D, PlantVisorPRO, side RemotePRO ing and outgoi e data do not cor iction will be est identifier to valic If these data do connection will cation code of th er for filtering the	Fig. 3.k , PlantVisor Enhan . This is used toge ng connections to respond to those ablished. date incoming and not correspond to l be established. e network card. O e data)	nced ether with o the s set on the d outgoing to those se Dnly for	Connection IP address Description Language M2	 Type of channel used for communication Supervisor's IP address. A DNS record can also b entered (e.g.: supervisor.carel.com). If the type o connection is "Dynamic IP", enter the last knowr IP, as this is temporary. Extended description, e.g. name/ address of the site Defines the language used to download the descriptions of the variables and controllers. Normalisation factor (e.g. square metres)
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The procedures for creating and deleting customers are similar to those described under "Navigation".

Procedure: alarm synchronisation

This has the purpose of downloading the site configuration to RemotePRO; also downloaded are alarms, events and notes that are no more than 5 days old. If the "initial status" flag is selected, complete synchronisation is performed, so as to download all the data and restore any errors (missing configurations, lost alarms, ...) that may have occurred following extended connectivity problems between RemotePRO and the local supervisors:

synchronisable information					
Supervisor type	Notes	Data	Events	Alarms	
boss	YES	YES	YES	YES	
PlantVisorPRO	YES	YES	YES	YES	
PlantVisorEnhanced	NO	YES	NO	YES	

synchronisable information						
Supervisor type	Notes	Data	Events	Alarms		
PlantWatchPRO	NO	YES(*)	YES	YES		
pCOWeb	NO	YES	NO	YES		

Procedure:

1. select, if necessary, the checkboxes "Initial status"

2. click on "synchro" button

Note: when the procedure has been completed successfully, messages with process descrption appear.

(*) from the 2.1 version

Procedure: data alignment

This has the purpose of downloading to RemotePRO the data corresponding to the logged variables for the devices connected to the local supervisors.

1. click on "aligmant data" button

3.3.2 Controllers

Display/edit the data for the controllers/devices connected to the local supervisor.

Menu path: Configuration \rightarrow Installation \rightarrow Supervisors \rightarrow (double click the row) \rightarrow Controllers

Supervi	sor	Controllers	Maintenances	Comments	pload Documents						record retrieved
Configurat	ion 🔶 Inst	allation > <u>Supervisors</u> [Superm	arket 02]								🐢 Refresh 🌱 Cancel
Code: Device M	odel:			Desc Tags	cription:			10	0		
Update	Global M	odel	Jan 199		rows 5					K 4 9 10 11	12 13 14 15 16 🕨 🎽 [76-79/79]
Filters A											
Code	- Address		Description	= Logic = Active = Cancelle	d 🗧 Device Model		= K	ai ja	Subdevices	Tags	= Entry Time = Last Update
9.001	1	Energy Meter - CAREL emete	r3	V	Energy Meter - CAREL el	周	yes		P	()	2/17/15 10:41:45 AM 12/21/16 1:57:56 PM
1.006	6	MT 6 Dinamic 128			MPXPRO	目	no	•	P	1	2/19/15 2:11:42 PM 12/21/16 1:57:56 PM
2.062	62	Cold Room 288			MPXPRQ		yes	•	p [1	2/20/15 3:25:10 PM 12/21/16 1:57:56 PM
2.064	64	MT 64 Insulator			MPXPRO	P	yes	•	J [1	2/19/15 12:48:04 PM 12/21/16 1:57:56 PM
Export opti	ons: 👧 E	xcel 💼 PDF									

Fig. 3.I

Each device is associated with a model that describes its variables. Upon synchronisation with the local supervisor, RemotePRO automatically receives the model code. For older supervisors, customised models or standard models that are not available in RemotePRO, the device and model must be associated manually.

Procedure: assign a model to a controllers

- 1. for the desired rows, set the model code in the input field or select it from the help list
- 2. click on sul "modify" row

Procedure: assign the same model to multiple controllers

- 1. for the desired rows, set the model code in the input field or select it from the help list
- 2. select the checkboxes on the desired rows
- 3. click the "global model" button

Procedure: enable controller in the KPIs

This includes the device when calculating the alarm, usage and performance KPIs.

- 1. set the KPI field to YES
- 2. click on sul "modify" row



3.4 Models

The devices (controllers and energy meters) send data to the local supervisor corresponding to the required variables, specified by an address that depends on the protocol used (CAREL, ModBus[®],...). To associate values with the corresponding variables, the supervisor uses models, generated for example using the 1Tool programming tool or Device Creator.

Examples: associate information with pCOWeb variables, display values from custom devices in the temperature and energy KPIs.

Note: if the data is imported from files taken from a CAREL 1Tool project, a standard ZIP must be used (without password and without maximum compression), containing just two project files: *.2CF, *2CT.

Menu path: Configuration → Installtion → Models

Supervisors	Plants	Areas	Models	Maps Library				record retrieved
Configuration + Insta	llation						Refrest	Cancel 🛃 Upload
Code: Manufacturer: Company:				Description: Origin:				
Delete				rows 5	к ч	1 2 3	45678	▶ ▶ [21-25/239]
Filters 🔺								
Code =				Description		* Controllers	= Manufacturer	= Origin = Company
evdevo	EVD evolution					10	Carel S.p.A.	PP2
PJ_EASY	pj easy					10	2CF	XML
IREVM	IR33+ ModBus					9	2CF	XML
pLoadsModbus	pLoads (Modbus)					8	Carel Industries S.r.l.	PP2
GENERIC_GAS_ME	TER Generic Gas Meter					7		x
Export options: 🔜 E	xcel Pop PDF							

Procedure: Import a new model

1. Click "Upload" to display the popup;

2. Enter the code, description, select the ZIP file, type, application protocol, language (which must be among those configured in the model) and the company;

Fig. 3.m

3. Click "Upload" to complete the upload.

Note: when the procedure has been completed successfully, the message "record created" is shown in the system message area.

🛇 Note: the information that identifies a variable (type, address, length, size, bit position) must be unique in order to allow correct association with the devices.

Code: *	· · ·	
Description: *	N	
Zip File [2cf, 2ct] (Max 15 MB): 🇯	Scegli file Nessun file selezionato	
Type: 🔹	2CF/2CT	
App.Protocol 🔹	Carel	
Language: *	-	
Company:	T	

Fig. 3.n

3.5 Remote management of local users

Remote management of local users is used to access all of the local supervisors without needing to repeat the configuration of individual users on each one separately. On RemotePRO there are two different components:

1. Centralised administration, to create and delete users from one or more local supervisors and change the access password;

2. Remote access to the data in real time, for using custom pages (see maps) and broadcast operations.

🛇 Note: currently remote administration of local users is supported by the PlantVisorPRO (starting from version 2.0) and boss supervisors.

🛇 Note: currently remote administration of local users is supported by the pCO Web (each version) (a starting from version 2.0) and boss supervisors.

The list displayed is in addition to the users already present on the supervisors, as existing users will not be deleted or overwritten, unless the users are created/edited/deleted at a local level.

Menu path: Configuration → Access→ Local users

Users	Change User Data	Local Users						record retrieved
Configuration +	Access						o 💭 Ref	resh 🏠 Cancel 🚯 Synchronise
Account:								
New Delete	Add To Remove From			rows	5		КК	1 2 3) 1 [1-5/12]
Filters 🔺								
			 Account 				Sup. (Synch.)	Profile
admin.user							1(0)	System Administrator
administrator							3 (Jh)	System Administrator
Carel.spain							22 Building 09; Build	ding 10; m Administrator
Carelaccess							0(0)	System Administrator
end.user							0(0)	End User
Export options:	ns Excel Por PDF							
				Fig. 3.o				
ield	Description				Field	Description		
Account	User name				Profile	Profile assigned to the user		
Sup.(Synch.)	Number of supervi	isors the user has beer	associated with.	_				
	Those awaiting syr	chronisation are show	n in brackets					
	Those awarding syr		in in blackets	_	-			
Note: m	noving the mouse cu	ursor over each figure	shows the list of sup	ervisors o	onfigured			
	ioving the mouse et	abor over eden ligute	shows the list of sup		onnguicu	/		

Note: the four standard PlantVisorPRO 2.0 profiles can be selected (System Administrator, Installer, Service, End User). The operations that can be performed on the supervisor with each user created will vary depending on the authorisations assigned to the specific profile on each supervisor.

Note:

- supervisors that support remote management of local users will be enabled to accept this function. To enable the function, see the specific manual for the supervisor used;
 - as regards the operations carried out by RemotePRO, the rules are as follows: Create/edit a user:
 - If the user does not exist on the local supervisor: a new user is created;
 - If the user exists on the local supervisor: the existing user is edited.
 - Delete a user:
 - 1. If the user does not exist on the local supervisor: no action;
 - 2. If the user exists on the local supervisor: the existing user is deleted.

Menu path: Configuration → Access → Local users

Local User						record retrieve
Configuration +	Access > Local Users					- Delete V Updar
General Informa	atión					
Account: *	administrator			Password:		
incomina in []				Repeat Password: *		
Division: *	CR04 Customer 04	Į.		Profile: *	System Administrator	
			Supervisors			
Délete All	Add To					Page 1 [3/3]
			Supervisor			-
Building 10						4
Building 09						a
Building 02						*
			Users			
Delete All	Add To					Page 1 [3/3]
			Account			2
account.01						
account.02						
account.03						
			Fig. 3.p			
ield	Description			Field	Description	n

Field	Description	Field	Description
Supervisor	Contains the supervisor selected from the list that opens when clicking it	Password	Password
Account	Local user username	Repeat password	Repeat password
Profile	Local user profile		

Procedure: assign a supervisor to the local user

- 1. In the "Supervisors" section, click 🔎 to open the list of supervisors. Select the supervisor by double clicking;
- 2. Click Add to to assign the supervisor to the local user; this will be added to the list;

Procedure: remove a supervisor from the local user

1. Select the local user checkbox and click the button to remove the assignment from the local user;

Note: When returning to the main page: the number of supervisors for the local user is updated

Procedure: assign all supervisors to a local user

1. In the "Supervisors" section, click (AII); the local user will be associated with all the supervisors (as well as the Remote users).

Note: When returning to the main page again: the number of supervisors for the local user is updated

Procedure: local user synchronisation to transfer the changes made to the local user configuration on the supervisors. 1. Press the "Synchronise" button.

Note:

- the status column under Configuration -> Access represents the operation that must be performed on the local supervisor; in particular, the yellow background highlights the operations that are yet to be performed;
- the different icons indicate that the user:

nust be assigned to the local supervisor

Has already been assigned to the supervisor, but needs to be

updated (for example, the password has been changed)

 \geq Has already been assigned to the supervisor, but needs to be

updated (for example, the password has been changed)

if a supervisor is removed from the list of supervisors for the user, it will be marked by the X icon only if it had been previously created. If the user has
never been created on the supervisor by the local user management function, the item will be removed from the list directly, without making any changes
on the supervisor.

3.6 Alarm configuration

Before running synchronisation with the local supervisors, the related options need to be configured. On first synchronisation, RemotePRO receives the system configuration; external alarms, events and notes that are no more than 5 days old are also downloaded. To configure this maximum synchronisation interval and other options, go to:

Menu path: Configuration → Administration → System

Modules	System	Edit 118n	Log File Export	Gateway Configuration	record retriev
Configuration + A	Administration				🗸 Update 🛶 Synchronise 🔳 initial status 🛛 📩 Data Alignm
Synchronisation					
Synchronisation	n Options				
Synchronise On	Connection:	2			
Max Synch Days	s:	3 🔻			
Alarm Acknowle	edge And Note Options				
Mandatory ACK	For Reset Alarms:				
Check Notes On	Acknowledged Alarm:				
Default Acknow	vledge Note (Max 100 Cha	racters): Owner Note			
Resolution					
Mandatory Reso	olution Type For Reset Ala	rms:			
Email					
Subject:		RemotePRO S	Server		

Fig 3 g

	l ig		
Field	Description	Field	Description
Synchronise the	If the flag is enabled, RemotePRO, as well as opening	Check notes on	If this flag is enabled, to acknowledge an alarm at least one
connection	the supervisor page, will also start synchronisation.	acknowledged	alarm note must be entered.
	Otherwise, synchronisation is only performed by	alarms	
	the local supervisors or activated when clicking the		
	'Synchronise' buttons on the pages.		
	To connect to the local supervisor web interface:		
	access: Alarms -> Supervisor status; click 💴.		
Max synch days	This limit avoids downloading old events/alarms that	Default	If the "Check notes on acknowledged alarms" flag is enabled,
	may slow down/stop the operation of RemotePRO.	acknowledge	when "acknowledged" is selected from the list of "Active
		note (max 100	alarms" on one or more than one alarm WITHOUT notes,
		characters)	RemotePRO will create a note for each of these using the text
			entered here
Mandatory ACK for	If this flag is enabled, the alarm is moved from "Active	Subject	Subject of the alarm email
reset alarms	alarms" to "Reset alarms" only if the alarms have		
	ended (there is an end alarm date) and have been		
	"acknowledged".		

Note: after having configured a local supervisor, it is preferable to run an initial synchronisation with the remote system, i.e. download the information that has been selected during configuration (e.g. alarms, events). Synchronisation with the remote supervisor can be started manually by the remote user, as described below, or can start automatically if the local supervisor has been configured to call the remote supervisor in response to an alarm or event (see the corresponding manual).

Procedure: global alarm synchronisation

- The process can be activated on all supervisors
- Select the initial status checkbox.
- 2. Click the --- Synchronise button.

3.7 Life test configuration

Periodical verification of communication between the local supervisors and the RemotePRO server.

Function	Description
Outgoing life test	RemotePRO server calls the local supervisor
Incoming life test	The local supervisor calls the RemotePRO server

Note: see the local supervisor manual for details on configuring the call to RemotePRO.

The number of times the life test is performed each day can be configured.

Menu path: Configuration (Administration) System

Modules	System	Edit 118n	Log File Export	Gateway Configuration			record retrieved
Configuration + Admi	histration					Vpdate 🛶 Synchronise 🔳 initial status	🛃 Data Alignment
Life Test Daily Frequency Outgoing Via LAN: Incoming Via LAN:		4 • 12 •	Y H				
				Fig. 3.r			
Field Outgoing/incor	Descript n1 ,12,	ion 24 = Never,1 .	12, 24 times a c	lay	Field Outgoing/incoming	Description 1,6 = Never, 16 times a day	
ING VIA LAIN					via modern		

Note: The tests start at midnight: if 12 tests are set, the first test starts between 00:00 and 02:00, the second test between 02:00 and 04:00,..., etc.

Incoming life test



Fig. 3.s

Based on the set frequency the tests are divided across the day into the corresponding number of intervals. In the example shown, if at 3:00 a daily frequency of 6 incoming tests is set, at 4:00 RemotePRO will verify whether the calls from 50 supervisors have been received in the previous 4 hours. If no call was received or the call was delayed (after 4:00), the test is considered as having failed.



Important: configure the call to RemotePRO on each local supervisor!

ENG

Outgoing life test



Fig. 3.t

Based on the set frequency the tests are divided across the day into the corresponding number of intervals. For example, every 4 hours RemotePRO calls the local supervisors and checks that they all respond. If a supervisor does not respond, the outgoing life test for that supervisor is considered as having failed...

🛇 Note: as communication via modem is slower, a maximum of 6 incoming/outgoing life tests can be set in this mode.

3.8 Alignment

Data alignment is a procedure that is scheduled to be performed automatically 2 to 3 times a day. The scheduled time is settable.

Note: data alignment is only performed on local supervisors that have been configured accordingly. To enable the function, set the "data" parameter on the local supervisor.

Menu path: Configuration \rightarrow Administration \rightarrow System

Modules	System	Edit I18n	Log File Export	Gateway Configuration	record retrieved
Configuration + A	dministration				🗸 Update 🔸 Synchronise 🔳 initial status 🛃 Data Alignment
Data Alignment Server Options Data Alignment Daily Repeat: FTP Server:	Start Time:	01:00 • • • \$2,33,12,56			
erver option	s, data alignm	ent		Fig. 3.u	

Description
Starting time
2/3

 Field
 Description

 FTP server
 For pCOWeb local supervisors: in the "FTP server" field enter the IP address of the computer that RemotePRO is running on

Procedure: global data alignment

_

The process can be activated for all supervisors

1. Click the Data Alignment button.

3.9 Rules engine

To create automatic alarm notification actions, the following need to be configured:

- 1. Notification group: includes one or more contacts. The contacts that can be selected are read directly from the contacts (Configuration -> Contacts);
- 2. Rules: defines which alarms are managed;
- 3. Time bands: associates the notification group with the rules, also setting the time band in which these are enabled.

3.9.1 Notification groups

Groups to be notified of alarms by email.

Menu path: Activity (Rules engine

Notification Groups	Rules	Time Bands				record retrieved
Activity + Rules Engine						💏 Refresh 🎝 Cancel
Description:				Contact Type:	Ŧ	
New Delete			rows 5			K ◀ 1 2 3 ▶ N [1-5/11]
Filters 🔺						
			* Description			1
L.T Carel 2						
L.T Carel 3						
ELT Carel AU						
L.T Carel BR						
LT Carel FR						
Export options: 🔜 Excel 📷	PDF					
			Fig. 3.v			

DETAIL PAGE1

Notification Group Contacts	record retrieved
Activity + Rules Engine > <u>Notification Groups</u>	- Delete Vupdate
General Information	*
Description: * LT:- Carel 2	Contact Type: * Email *

Fig. 3.w

DETAIL PAGE2

Notification Group Contacts		record retrieved
Activity + Rules Engine > Notification Groups [L.T Carel 2]		Refresh 🔤 New
Notification Group: * LTCarel 2 Y	Contact: *	
Delete	rows 5	Page 1 [2/2]
Contact	≑ üser	
Customer] [CR04] Customer 04 [Carel 2] Carel 2 [2] account01@customer04.com		
Customer] [CR04] Customer 04 [Carel 2] Carel 2 [1] account02@customer04.com		
Export options: Excel B PDF		

Fig. 3.x

Procedure: creating a notification group

- 1. Click on **T** in main page;
- On the secondary page 1: Enter the Description and Contact Type: Email, Fax, Cell Phone, Phone;
 Click on to save; "Record created" is shown;
- 4. Click the navigation path to return to the main window.

0 Note: when the procedure has been completed successfully, the message "modified created" is shown in the system message area.

Procedure: adding contacts to the notification group

- 1. Click double on the row of the notification group created: the secondary page 1 opens; Cliccare su contacts si apre la pagina secondaria 2;
- 2. Click on 🔎: contact list opens;
- 3. Click double on the contact to be added;
- 4. Click on **T** to save: the contact is added in the list.

Note: when the procedure has been completed successfully, the message "modified created" is shown in the system message area.

3.9.2 Rules

Rules for notification of alarms by email.

Menu path: Activity Rules engine Rules

Notification Groups	Rules	Time Bands		record retrieved
Activity + Rules Engine				🚓 Refresh 🌱 Cancel
Description:				
New Delete			rows 5	K
Filters 🔺				
			* Description	
LT Carel 2				
📄 L.T Carel 3				
L.T Carel AU				
L.T Carel BR				
LT Carel FR.				
Export options:	DF			

Fig. 3.y

DETAIL PAGE

Rule							record retrieved
Activity 🕈 Rules Engin	ne > <u>Rules</u>						- Delete VIpdate
General Information Description: * Only Active Alarms Priority:	LT Carel 2 Exertifical High medium Low		Day / Night:	diumal nocturnal undefined			
Supervisor Type:			Supervisor:	210	Building 02		
Area:		J.	Plant:			P	
Division:			Maintenance Engineer:			厚	

Fig. 3.z

Field	Description	Field	Description	
Description	Name describing the rule being created	Priority	Only alarms with the selected	Day/night
			priority are notified. Multiple	Alarm notification interval:
			priorities can be selected.	Day/night: the alarms that are
			N.B.: the 'technical' priority	activated within/outside of the
			refers, for example, to alarms	set time band for each site are
			signalling a failed life test,	notified;
			generated by RemotePRO.	Not defined: no filter
Only active	Only alarm activation is notified, and not alarm reset	Supervisor	Only alarms from the selected	Supervisor, Area, Plant, Customer,
alarms		type	supervisors are notified	Maintenance Engineer Addi-
			(pCOWeb, PlantWatchPRO,	tional filters
			PlantVisorPRO, PlantVisor	
			Enhanced, boss)	

Procedure: creating a rele
 Click on in main page: secondary page opens;
 Insert filters to define the rule;
 Click on to save; "Record created" is shown;

4. Click the navigation path to return to the main page, where description of new rule is showned.

Note: when the procedure has been completed successfully, the message "modified modified" is shown in the system message area.

3.9.3 Time bands

Create time bands and associate rules with the notification group.

Menu path: Activity \rightarrow Rules engine \rightarrow Time bands

No	tifica	tion Groups		Rules	Time Bands		record retrieved
Act	vity 🔶	Rules Engine					🦛 Refresh 🆙 Cancel
Da	y Of Th	ie Week:		0	T		
New	Delet	e				rows 5	
Filte	rs 🔺						
	Enable	e 🗧 Interval Star	t = Interval	End Day Of The W	Veek	+ Rule	
	4	00:00	24:00	All Days	[24] L.T Carel ZA		
	¥	00:00	24:00	All Days	[25] L.T Carel HQ		
	V	00:00	24:00	All Days	[26] LT Carel 2		
	4	00:00	24:00	All Days	[27] LT Carel 3		
	~	00:00	24:00	All Days	[28] L.T Carel AU		
Expo	rt opti	ons: 📆 Excel	PDF PDF				

Fig. 3.aa

DETAIL PAGE1

Time Band	Notification Groups	record retrieved
Activity + Rules Engin	e → <u>Time Bands</u>	
General Information Enable: Interval Start: Day Of The Week:	Ø 00 ▼ : ★ 00 ▼ All Days ▼	Interval End: ★ 24 ▼ : ★ 00 ▼ Rule: ★ LTCarel 2 ▼

Fig. 3.ab

DETAIL PAGE2

Time Band Notification Groups		record retrieved
Activity + Rules Engine > Time Bands		🚓 Refresh 🔤 New
Time Band: * All Days 00:00 -> 00:00 : L.T Carel 2 V	Notification Group: *	
Delete		Page 1 [1/1]
	≎ User	
LT Carel 2		
Export options: 🔜 Excel 📑 PDF		

Fig. 3.ac

Procedure: creating a time band

- 1. Select rule-check box, day of the week and click on "New" in the main page; secondary page 1 opens;
- 2. Insert field of secondary page: start, end, day and associated-rule;
- 3. Click on to save; "Record created" showns;
- Click on "tab" to open window-page2
 Insert notification group and click on to save.

• Note: when the procedure has been completed successfully, the message "modified modified" is shown in the system message area.



4. ALARM MANAGEMENT

Alarms received by the supervisory system can be managed based on:

- supervisor status;
- the list of alarms on the entire system (or the part visible to the user).
- geolocation map of the plants.

The operations that can be performed from the local supervisor on an alarm, and that are also visible on RemotePRO, are:

- acknowledge: the alarm is marked as checked;
- cancel: if a delay is set between alarm activation and when action is required on the supervisor (e.g. notification, action on a relay, action on a parameter), the alarm is cancelled, i.e. the system does not perform the specified operations even the alarm remains active;
- reset: the local supervisor ignores the alarm in progress. If the alarm is reset and then occurs again, it is subsequently managed.

Active alarms are all the alarms sent from a local supervisor that have not been acknowledged on RemotePRO, or that have not yet been reset on the local supervisor. These are easily recognised as there is no end alarm date. These alarms can be acknowledged for subsequent management (ACK = acknowledgement). This operation has no effect on the alarm's status on the local supervisor.

Reset alarms are alarms that have ended on the local supervisor and have been acknowledged (ACK) on the remote supervisor.

Note: a reset alarm on the local supervisor is automatically reset on RemotePRO based on the setting of "Mandatory ACK for Reset Alarms" under "Configuration -> Administration -> System".

4.1 Supervisor status

Supervisor status gives an overview of all the sites via the information provided: icons relating to the 'life test' and 'status', columns indicating the date of last synchronisation and data alignment.

Menu path: Alarms (Supervisor status

Supervisors Status Geolocalization					record retrieve
Alarms + Supervisors Status	🖾 03:17 🥠	_			🐢 Refresh 🌱 Can
Supervisor: Status: Plant:	Type: > Division:				
	rows 5		K	1 2 3 4	5 1 [1-5/22
Filters A	∴ Simenaenr	Time	oppertio	= Last Synchin	⇒ Last Alignment
ne Customer 04 Building 01		29		2/21/17 7:11:42 AM	2/21/17 2:10:05 AM
incoming: not active Loutoning: online lng 03		2		2/20/17 4:29:48 PM	2/21/17 2:05:07 AM
Customer 04 Building 05 Building 05		23	12	2/21/17 8:49:39 AM	2/21/17 2:08:46 AM
Customer 04 Building 07 Building 07		2	10	2/16/17 9:32:20 AM	10/20/16 11:01:06 AM
 Customer 04 Building 09 Building 09 		22	1	2/15/17 9:31:52 AM	2/21/17 2:00:31 AM
Export options: 🔜 Excel 🙀 PDF					

Fig. 4.a

Field	Description	Description					
L.T. (Life Test)	Outcome c	Dutcome of the incoming and outgoing life tests					
	LED	MEANING					
	Red	At least 1 test has failed					
	Green	Both tests passed					
	Orange Test scheduled but not active						
	Grey Test not scheduled						
Status	Alarms on 1	the supervisor:					
	LED	MEANING					
	Red	Active alarms					
	Green	No active alarms					
Client	Customer t	Customer that owns/operates the site					
Plant	Site where	Site where the supervisor is installed					
Supervisor	Local super	rvisor					

Field	Description
Туре	Icon that identifies the type of supervisor (boss, PlantWatch-
	PRO, PlantVisorPRO, PlantVisorEnhanced, pCOWeb,)
Connection	Buttons for connecting to the supervisor's web interface
Last synchro	Date and time of last synchronisation
Last alignment	Date and time of last data alignment

Note: where configured, the connection button allows "auto-login" on the supervisor, a function that makes operations faster for the user. For further information see the paragraph corresponding to local users.

4.2 Management of alarms, devices, notes and events on the local supervisor

From the previous page, double clicking a row corresponding to a supervisor opens the detail page that shows the main information on the supervisor. The first tab provides an overview on the status of the controllers (the devices with alarms are shown at the top of the list). The other tabs are used to view active alarms, reset alarms, local events and local notes.

Menu path: Alarms <a> Supervisor status Double click the selected supervisor

4.2.1 Supervisor

Page showing an overview of the status of the devices connected to the supervisor.

Supervisor Controllers Active Alar	ms Reset Alarms	Local Events	Local Notes	record retrieved
larms 🔶 Supervisors Status -> <u>Supervisors Status</u>		☑ 00:01	8	🚓 Refresh 🛶 Synchronise 📕 initial status 🛛 👔 Info
Description: Supermarket 05 Plant: Supermarket 05	Identifier: Tisac IP Address: 190.8.138.33		Supervisor Type: 🏼 🎽 Tags: 🔹 supe	ermarket
rollers 【4 4 1 2 3 4 5 6 7 8 ▶ 】 [16-20/7:	Alarms List Acknowledge Inhibit Resolution	n Spare Parts Replacement	T	< 1 2 3 4 5 6 7 8 ▶ [1-5/46]
is Code Description	RA RS - Start Time	End Time Device		Description
9.033 Fruit and vegs 427	🔲 ✔ 🐘 2/21/17 9:02:43 AM.473 🕯	Fruit and vegs 433	OFFLINE	
9.040 Fruit and vegs 434	🔲 💕 🖬 system.admin - Spare Part	s Replacement t and vegs 429	OFFLINE	
9.041 Fruit and vegs 435	2/21/17 8:41:13 AM.396	Specials 622	No connection	
9.042 Fruit and vegs 436	2/21/17 8:40:43 AM.394	Fruit and vegs 432	OFFLINE	
9.043 Fruit and vegs 437	2/21/17 8:40:13 AM.392	Meat and chicken 41	4 OFFLINE	

Fig. 4.b

Field	Description	Field	Description				
Description	Supervisor description	Identifier	Supervisor identifier				
Supervisor type	-	Plant	Site where the supervisor is installed				
IP address	IP address	Tag	Device tag (see Config	uration	-> Plant)		
Status	Alarms on the device:	Code/	Code: device code sent by the local supervisor				
	LEDMEANINGRedActive alarmsGreenNo active alarms	Description	Description: descriptic	on of the	e device		
RA	Acknowledged alarm (ACK)	RS (RS)	How the alarm was res	solved:			
			Type of response	lcon	Type of response	lcon	
			No operation		Remote maintenance		
			On-site maintenance		Replace parts	Q	
Start time	Alarm start date/time on local supervisor lcons and an indicate if alarm is occured during opening hours of plant (day) o during the closing (night). See the plant configuration	End time	Alarm end date/time o	on local	supervisor		
Device	Description of the device	Description	Description of the alar	m			

Note: the tooltip shown when moving the mouse pointer over the RA and RS columns indicates:

- in the RA column: the user that acknowledged the alarm;
- in the RS column: the user that resolved the alarm and how it was resolved.

Procedure: Acknowledge

the alarm is displayed with a check sign;

- 1. select the desired rows using the corresponding checkboxes
- 2. click the Acknowledge button
- 3. click "OK" in the confirmation pop-up

Note: when the procedure has been completed successfully, the message "modified modified" is shown in the system message area.

Some alarms may be shown as active on RemotePRO even if they have been reset on the local supervisor. This may occur, for example, if a local supervisor remains offline (not accessible) for a time exceeding the "max synch days". Active alarms on RemotePRO that are reset on the local supervisor during this period cannot be synchronised, and therefore remain active on RemotePRO. In such situations of inconsistency the alarms cannot be forcibly reset.

Procedure: Inhibit alarms

- 1. select the desired rows using the corresponding checkboxe 📃
- 2. click the Inhibit button
- 3. click "OK" in the confirmation pop-up

Note: when the procedure has been completed successfully, the message "modified modified" is shown in the system message area.



Procedure: assign alarm response

- 1. select the desired rows using the corresponding checkboxes \square ;
- 2. Select from the drop-down menu for the made-resolution;
- 3. click the Resolution button.

The alarms are highlighted by different colours based on their priority. When an alarm has an end alarm date or has been acknowledged on the remote supervisor, it is highlighted in the same colour, only darker.

Active	Reset	Priority
alarm	alarm	
		Technical alarm (e.g. local supervisor offline)
		Very high
		High
		Medium
		Low

4.2.2 Controllers

List of devices connected to the supervisor

Supe	rvisor		Controllers	Active Alarms	Reset Alarms	Local Events	Local Notes		record retrieved
Alarma	s 🕈 Super	rvisors Stat	us > <u>Supervisors Status</u> [S	upermarket 05]					Refresh 🏠 Cancel
c.i.				Description		-1			
With	Alarms:			Descript Device M	ion: todel:	P	Tags:	0	
						rows 5		K 4 4 5 6 5	8 9 10 11 ▶ ▶ [36-40/71]
Filters									
= Statu	= Code	e ≑ Addres	s			Description		Device Model	Tags
	9.011	11	Diary 405					IR33+ ModBus	cell
	9.012	12	Diary 406					IR33+ ModBus	cell
	9.013	13	Diary 407					IR33+ ModBus	(cell)
	9.014	14	Meat and chicken 408					IR33+ ModBus	cabinet
	9.021	21	Specials 415					IR33+ ModBus	cabinet

Fig	1 4 c
1 IQ	. 4.C

Field	Description	Field	Description
Code/Description	Code / description of the device	Address	Device serial address (depends on the protocol)
With alarms	-	Device model	-
Tags	-		
Status	See explanation on the previous page	Code	-
Address	-	Description	-
Device model	-	Tags	-

4.2.3 Active alarms

List of active alarms on the supervisor

Supervisor	Controllers	Active Alarms	Reset Alarms	Local Events	Local Notes					record retrieved
Alarms + Supervisors S	itatus > <u>Supervisors Status</u> [S	upermarket 05]		0 4:5	2 5					🚓 Refresh 🦳 Cance
Description: Supervisor: 1084 Day / Night: + diur	Supermarket 05	From Devic Reso	e:	· 27	To: Priority: >	< <mark>21</mark> ⊧		Status:		-
Acknowledge Inhibit	Resolution no action	۲		rows 5			н (1234	567	8 ▶ ▶ [1-5/46]
= RA = R	s 🗢 Start Time.	End Time Curation	Supervisor	- Device	= Description	= Plant	# Area	= Division +	AK = CA =	RE 🚽 Arrival Time
= EO 🖌 🖻	2/21/17 9:02:43 AM.473	62d 03h 07m 45s	Supermarket 05	Fruit and vegs 433	OFFLINE	Supermarke	* South America	Customer 0		2/21/17 8:56:18 AM
🖩 💐 🛈 🏨 🖻	2/21/17 9:02:43 AM.473	62d 03h 07m 45s	Supermarket 05	Fruit and yegs 429	OFFLINE	Supermarke	* South America	Customer 0		2/21/17 8:56:18 AM
🔳 💟 🛈 🛛 system	admin 7 8:41:13 AM.396	62d 03h 29m 14s	Supermarket 05	Specials 622	No connection	Supermarke	* South America	Customer 0		2/21/17 8:34:58 AM
	2/21/17 8:40:13 AM.392	62d 03h 30m 15s	Supermarket 05	Fruit and vegs 430	OFFLINE	Supermarke	* South America	Customer 0		2/21/17 8:34:18 AM
	2/21/17 8:40:13 AM.392	62d 03h 30m 15s	Supermarket 05	Meat and chicken 410	OFFLINE	Supermarke	* South America	Customer 0		2/21/17 8:34:18 AM

		Fig. 4.d
Field	Description	
Description	Alarm description	
Status	acknowledged from remote, acknowledged, viewed, reset,	
	cancelled, inhibited, not inhibited	
Device	-	
Duration	Alarm duration filtering options: 30 min, 1 hour, 2 hours, 3	
	hours, 4 hours, 6 hours, 8 hours, 12 hours	
Resolution	See the previous page	

Field	Description
From/to	Alarm interval start/end date
Supervisor	Supervisor filtering options
Priority	See the previous explanation
Day/night	Alarm activated during the day, night, not defined

Field	Description	Field	Description
Green icon	Button for connecting to the supervisor's web interface	Info	The info shown here relates to the alarm (notes relating to the
			supervisor, site, customer, maintenance operators entered in
			the contacts, comments, documents)
RA	Acknowledged alarm (ACK)	RS	How the alarm was resolved: no operation, on-site mainte-
			nance, remote maintenance, replace parts
Start time	Alarm start date/time on local supervisor	End time	Alarm end date/time on local supervisor
Duration	Difference between current date/time and alarm start date/	Supervisor/	-
	time	device	
Description	Alarm description	Plant/Area	Site/area where the alarm occurred
Client	Customer relating to site with alarm	AK	Acknowledged
CA	Cancelled	RE	Reset
Arrival time	Time the alarm was received on RemotePRO		

The operations that can be performed by RemotePRO are the same as those available on the Supervisor page.

4.2.4 Reset alarms

List of reset alarms on the supervisor.

Supervis	sor	Controllers	Active Alarn	15	Reset Alarms	Local Events	Local Notes						records modified
Supervisor	> Supervisor	s Status [Supermarket 05]				2	04:55 🔥		_				Refresh 7 Cancel
Descripti Superviso Day / Nig	on: or: 1084 ht: Fdiurn	Supermarket 05		From: Device: Resolut	tion:	< 21>	To: Priority: 🕨	4	21	Status Durati	: F on: all		
Resolution	Local Maint	enance 🔻				rows	5		ŀ	(1 2 3	456	78	▶ [1-5/36.627]
Filters *	= RA = RS	= Start Time	= End Time	Duration	Supervisor	= Device	Description	Plant	≑ Area	= Division = AK	= CA = RE	= Inhibited	arrival Time
II 🖬 🛈		2/21/17 8:58:43 AM.459	2/21/17 9:02:13 AM	03m 30s	Supermarket 05	Fruit and vegs 429	OFFLINE	Supermarke	* South America	Customer 0			2/21/17 8:55:58 AM
II 🖬 🛈		2/21/17 8:58:43 AM.459	2/21/17 9:01:43 AM	03m 00s 9	Supermarket 05	Fruit and vegs 433	OFFLINE	Supermarke,	* South America	Customer 0			2/21/17 8:55:58 AM
II 🖬 🛈	4	2/21/17 8:58:43 AM.459	2/21/17 9:00:43 AM	02m 00s 9	Supermarket 05	Fruit and vegs 427	OFFLINE	Supermarke	* South America	Customer 0		1	2/21/17 8:54:59 AM
II 🖬 🛛		2/21/17 8:56:13 AM.450	2/21/17 8:58:13 AM	02m 00s 9	Supermarket 05	Fruit and vegs 429	OFFLINE	Supermarke	* South America	Customer 0			2/21/17 8:52:18 AM
II 🖬 🛈		2/21/17 8:48:43 AM.424	2/21/17 8:58:13 AM	09m 30s	Supermarket 05	Fruit and vegs 433	OFFLINE	Supermarke	* South America	Customer 0			2/21/17 8:52:18 AM

Fig. 4.e

See the table corresponding to "Active alarms". The final item, "Inhibited", indicates whether the alarm has been inhibited.

4.2.5 Local events

List of the local events on the supervisor received during synchronisation

Supervisor	Controllers	Active Alarms	Reset Alarms	Local Events	Local Notes	record retrieved
Alarms + Supervisors	Status > <u>Supervisors Status</u>	[Building 02]				Refresh 🎝 Cancel
From:	< 121 ×		To:	< <mark>\'±\</mark> ⊁		Type: 🗐 error 🗐 warning 🗐 info
				rows 5		I
Filters A						
🚽 Timestamp 🗧	Type 💠 User ≑ Categor	y		and the second second second	Description	
12/2/16 3:47:23 PM	Dispatcher Action	Action Dial to number (remoted	@cloud 123.140.125.63) not sent			
12/2/16 3:47:23 PM	Dispatcher Action	It is impossible to connect to the	ne remote installation			
12/2/16 3:47:10 PM	Dispatcher Action	Action E-mail to number (Syste	m Admin system.admin@carel.co	m) sent correctly		
12/2/16 3:47:05 PM	Dispatcher Action	Action Send email to System A	dmin managed by the Dispatcher	process		
12/2/16 3:47:05 PM	Dispatcher Action	Action RemotePRO Carel HQ m	anaged by the Dispatcher proces	s		
Export options: 🔜 Ex	kcel 🎫 PDF					

Fig. 4.f

Field	Description		Field	Description
Date and time	Date and time when the event occurred on the local supervisor		Туре	See the explanation below
User	-	-	Category	Category of the action (see local sup.)
Description	Description of the action			

There are three types of local events on the local supervisor (select the corresponding checkbox to filter the data)

7	Info	Information relating to correct system operation
4	Warning	Highlights configuration problems
8	Error	Highlights problems that prevent system operation



4.2.6 Local notes

List of notes from the local supervisor received by RemotePRO during synchronisation

	supervisor	Controllery	Active Abarma	Resut Klarms	tocal Frents	Local Notes				(second red in second
	Alarms + Supervisors S	tatus - Supervision Status							-	Reireih 7 Cincel
	Entry Time from: Last Update From: User Note:	- 10 - 10	1)* 1)-			stry Time To: ast Update To: infes:	· 泊· · 街·			
					ro	ws 100				Page 1 [4/4]
	Filters *				-				The owner water water water	and the second second
	Euternation Device dis	connected for maintenance							24/54/17 12:44:00	24/04/17 12:44:10
	systemadrun Energy de	sters for loads and lights							24/24/17 12:43:29	24/04/17 12:43:29
	system.admin HumiDiak	system numbing							14/04/17 12:43:09	24/04/17 12:43:09
	system asmir NT Rack	6 cabinets converted							34/04/17 1240:51	24(04/1712143153
	Export options: 💼 Exp	oel (🗮 PDF								
					Fig. 4	l.g				
Field Entry time from/to Last update from/to		Descript Time inte Update ir	ion rval to filter n nterval to filte	otes r notes	5	Field User note Notes		Descriptio User who e -	n ntered the	e note

Device detail 4.3

Menu path: Alarms (Supervisor status (Double click the selected supervisor (Double click the device

Double clicking a device opens the detail page. The second tab, "Log Data Graphs", shows graphs with the values of the device's logged variables (analogue and digital). The graph is displayed at the top, while at the bottom is the list of the variables that can be displayed on the graph, selecting these and choosing the corresponding colour (the default colour is defined by the model).



PERIOD SELECTION

From Period Date of the reference day for the data shown on the graph

- Time interval of the data:
- daily: data corresponding to the set day
 - weekly: data corresponding to one week starting from the set day
 - monthly: data corresponding a one month starting from the set day

 $igodoldsymbol{O}$ Note: the mouse can be used to zoom the graph: the minimum interval displayed is 1 hour.

Impo	rt From Model Upd	ate Model					P	age 1 [8/8]
Show	Device	Description		Colour	Minimum Value	Maximum Value	Average Value	Model Saved
۲	Fruit and vegs 10	Regulation Setpoint			3 [28/12 00:00]	3 [28/12 00:00]	3	4
	Fruit and vegs 10	Defrost Status			0 [28/12 00:00]	1 [28/12 03:02]	0.12	4
	Fruit and vegs 10	Regulation Temperature			1.5 [28/12 12:25]	9.9 [28/12 19:58]	4.03	4
	Fruit and vegs 10	Regulation Differential						
	Fruit and vegs 10	Working Setpoint						
	Fruit and vegs 10	Door Status						
	Fruit and vegs 10	Discharge Pressure						
		Fig. 4	Li .					
Field		Description	Field	Description				
Disp	lays	Checkboxes: select the variables to be displayed on the graph	Device (controller)	Description (na	me) of the o	controller		
Desc	ription	Description (name) of the monitored variable	Colour	Click the square	es to select 1	the colour t	hat the v	ariable will
				have on the gra	ph			
Mini	mum value	Minimum value measured in the selected period	Maximum value	Maximum value	e measured	in the sele	cted perio	bd
Mod	el	Indicates whether on the controller model the variable is	Saved	Indicates wheth	her the varia	able is logge	ed on Rer	notePRO

Procedures:

1. Import from model: used to restore the selections and colours to the default values for the device model;

2. Update model: used to set the current configuration as the default for the current controller model

🛇 Note: if no values are shown for a variable on the graph make sure the variable is checked as logged in the corresponding column.

Note: the available variables are those aligned with the Local Supervisor.

selected to be displayed on the graph by default

4.4 Alarm list

This menu shows the list of all alarms present (not divided by supervisor, as in Alarms → Supervisor status) The acknowledge, inhibit and resolution operations already described can also be performed from the "Alarms list" menu. See paragraph "Display alarms, devices, notes and events"

Menu path: Alarms → Alarms list

Active Alarms	Reset Alarms											record retrieve
Alarms 🔶 Alarms List				_	04:49	¢				-	-	Refresh ") Cano
Description:			From	E.	4 121×	To:	< 1 <u>1</u>		Status: 🕨			
Supervisor:	, p		Devi	ce:		Priority: >			Duration:			\supset
Day / Night: + di	urnal, nocturnal, unde		Reso	lution:								
Area:	P		Plant		1	Division:	厚					
Filters	RESOLUTION No action	End Time	= Duration	= Supervisor	rows 5	= Description	= Plant	÷ Area	2 3 4	5 = AK	6 7	8 ▶ ▶ [1-5/178] E → Arrival Time
	2/21/17 9:02:43 AM.473		62d 05h 13m 48s	Supermarket 05	Fruit and vegs 433	OFFLINE	Supermarke	* South America	Customer 0			2/21/17 8:56:18 AM
I I O 🖌	🚽 2/21/17 9:02:43 AM.473 📾		62d 05h 13m 48s	Supermarket 05	Fruit and vegs 429	OFFLINE	Supermarke	* South America	Customer 0			2/21/17 8:56:18 AM
	2/21/17 8:53:18 AM.984		62d 05h 23m 13s	Supermarket 02	Cold Room 347	No connection	Supermarke	* Europe	Customer 0			2/21/17 8:51:14 AM
	2/21/17 8:49:06 AM.687		62d 05h 27m 25s	Building 05	QG laboratorio test umidificatori PT - 42	Fuori linea	Building 0	* Europe	Customer 0			2/21/17 8:49:39 AM
	2/21/17 8:48:06 AM.671		62d 05h 28m 25s	Building 05	pChrono #15 - 1^ Piano - Area Produzione	Offline alarm of socket add.26	Building 0	* Europe	Customer 0			2/21/17 8:48:38 AM
					Fia. 4.i							

See the table corresponding to the active alarms for the description of the fields. For the procedures, see paragraph "Alarm management".

4.5 Alarm details, acknowledge, inhibit and resolve

Menu path: Alarms → Alarms list → Double click to open the details

	and an and a second	D. Adma	vierina D. Tohibit Alarm Well Resolution	I Generation L i Info L -/ P
Alarms + Alarms	List > <u>Active Alarms</u> [OFFLINE]	ALC NOTION	Neede to annot Aranni po Resolution ho action	Connection () and 12
General Informa	tion			
Description:	OFFLINE			
Day / Night:	*	Priority:	1	
Start Time:	2/21/17 9:02:43 AM.473	End Time:		
Duration:	62d 05h 15m 21s	Resolution:	е ,	
Device Informat	ion -			
Area:	* South America (LATAM_B)	Plant:	Supermarket 05 (TT_TI)	
Supervisor:	Supermarket 05 (1084)	Device:	Fruit and vegs 433 (433)	
Division:	Customer 01 (Tottus)			
Actions				
Remote Ack U	ser: system.admin	Remote Ack Ti	me: 4/24/17 8:40:52 AM.919	
Ack User:		Ack Time:		
Cancel User:		Cancel Time:		
Reset User:		Reset Time:		
Arrival Time				
Start Time:	2/21/17 8:56:18 AM.674	End Time:		
Refresh New	Update			
Notes: Cabine	t under maintnance			
Delete		rows 5		Page 1 [1/1]
Undate Liser	I last Update		Notes	



ACKNOWLEDGE, INHIBIT AND RESOLVE AN INDIVIDUAL ALARM

The procedure to acknowledge, inhibit and resolve the alarms are similar to those described in the previous paragraphs. The "Connection" button is the same as the green button for connecting to the supervisor's web interface. In addition, clicking the "graph" button directly opens the graph of device variables logged when the alarm occurred.

4.6 Geolocation

It is possible to view the implants on a geographic map. The function is available if you are connected to the Internet.



Fig. 4.I

5. ALARM KPIs

The alarm KPIs are used to carry out comparative analysis on active and reset alarms.

5.1 **Priority synoptic**

This offers a graphic representation of alarm distribution by priority. Consequently, site performance can be evaluated.

Menu path: Alarms (Priority synoptic



Fig. 5.a

Note: the number entered in the "Reset alarms" filter field represents the minimum number of alarms to be displayed for each supervisor (if the supervisor has a lower number of alarms, this is ignored).

Alarm analysis is distributed by supervisor. To examine the analysis in detail, simply click a bar on the graph or double click a row in the table to open the detailed analysis of the devices that belong to the selected supervisor.



Fig. 5.b

The list of alarms pertaining to a device can be accessed by selecting an element on the graph or the table.

Reset Alarms record retrieved								
Alarms + Priority Synoptic > <u>Reset</u> > <u>Reset/Device</u>		🖬 04:54 🦚	🐢 Refresh 🏻 🏠 Cancel					
Description: Supervisor: 1118 Day / Night: b diurnal, nocturnal, unde Area:	From: 10/24/2016 (1) Device: 744 (1) Resolution: Unmanaged, no action, Plant: (1)	To: 04/25/2017 (学) Priority: v very high, high, medium Division:	Status:) Duration: all					
Resolution	n	ws 5	I I 2 3 4 5 6 7 8 → I [6-10/103]					
Filters 🔺								
RA 🗘 RS 💠 Start Time 🗘 End Time		Description Plant Area	Division AK CA RE P Inhibited ✓ Arrival Time					
2/15/17 11:14:56 AM.468 2/15/17 11:16:26 AM	01m 30s Supermarket 02 LT pRack100 line 2 - 75	No connection Supermarke * Europe	Customer 0 2/15/17 11:13:38 AM					
2/10/17 11:22:57 AM.937	21h 26m 59s Supermarket 02 LT pRack100 line 2 - 75	L1 - Chillibooster maintenance alarm Supermarke * Europe	Customer 0 🛷 🛷 🛷 2/15/17 8:50:20 AM					
2/14/17 3:42:01 PM.562 2/14/17 3:43:01 PM	01m 00s Supermarket 02 LT pRack100 line 2 - 75	No connection Supermarke * Europe	Customer 0 2/14/17 3:40:45 PM					
2/14/17 1:00:45 PM.671 2/14/17 1:01:45 PM	01m 00s Supermarket 02 LT pRack100 line 2 - 75	No connection Supermarke * Europe	Customer 0 2/14/17 1:00:05 PM					
2/14/17 8:20:26 AM.359 2/14/17 8:21:26 AM	01m 00s Supermarket 02 LT pRack100 line 2 - 75	No connection Supermarke * Europe	Customer 0 2/14/17 8:17:59 AM					

Fig. 5.c



This is used to evaluate maintenance performed on the sites by analysing the alarms. For example, based on the Service Level Agreement (SLA), the system can compare the performance of maintenance companies.

Analysis by resolution

Displays the distribution of maintenance on the supervisors, divided by alarm resolution:

- not managed;
- resolved with no action;
- resolved with on-site maintenance;
- resolved with remote maintenance;
- resolved with replacement of parts in the Field.

Menu path: Alarms C Maintenance rating





Note: in the previous table, the colours define the operations based on cost:

blue (various shades): operations with a cost in terms of time or money;

• green (various shades): no cost.

To access the details for a supervisor, click a bar on the graph or double click a row in the table.



Analysis by service company

Displays the distribution of maintenance performance on the supervisors, divided by service company.

- The following can be analysed for each company:
- the number of alarms, divided by priority;
- the percentage of alarms not resolved in accordance with the SLA (Service Level Agreement);
- the number resolved by inhibiting.

Menu path: Alarms (Maintenance rating

					à	rows 5							Page 1 [5
Filters A	= Description	- Very High	- 5A	: Tobibited	= High	= SIA	= Inhibited	a Medium	= 51.4	Contract in the second seco	= iow	÷ SIA	○ Inhibited
LATAM_SC	Service Company LATAM	36285	17.93 %	146	955	6.72 %	2	3	0.0 %	0	126	38.89 %	
NORAM_SC	Service Company NORAM	2039	12.26 %	0		0.0 %	0		0.0 %	0	1801	0.0 %	
EMEA_SC	Service Company EMEA	8178	6.41 %	6	545	1.65 %	0	12	72.73 %	1	2506	1.64 %	
EU_SC	Service Company EU	8178	6,41 %	6	545	1.65 %	0	12	72.73 %	1	2506	1.64 %	
APAC_SC	Service Company APAC	71296	1.81 %	135	20	0.0 %	0		0.0 %	0	6	83.33 %	
xport options: 📑 Excel	PDF												
	very high		high				med	ium			lo	ww	
	very high		high				med	ium			k	w	

Fig. 5.f

To analyse the sites pertaining to a service company in detail, double click the row in the list of service companies.

Reset/Res	olution	Active/Resoluti	on	Service	1	Plant											record retriev
Alarms 🕈 Mair	ntenance Rating															c Re	fresh 🏠 Car
From: Day / Night:	03/24/2016 + diurnal, nocturr	< <mark>₩</mark> € 21 eal, unde		1	fo: 04/24/20	17	< <mark>21</mark> ⊧			Plant: Maintena	ance Enginee	er:			 		
								rows	5					K	4 1 2	34	6-10/17
Filters 🔺					_		_										
‡ Plant	+ Description	⇒ Very High	≑ SLA	\ddagger Inhibited	# Target	÷ High	÷ SLA	\doteqdot Inhibited	‡ Target	S Medium	÷ SLA	⇒ Inhibited	≑ Target	< Low	\$ SLA	÷ Inhibited	Target
TT_GC	Supermarket 03	1384	38,46 %	6	1	162	12.96 %	0	4	3	0.0 %	0	1	41	14.63 %	0	1
MSH_02	Supermarket 02	3149	7.91 %	0	1	545	1.65 %	0	4	12	72.73 %	1	2	513	7.99 %	0	4
BDK001	Supermarket 01	7728	1.55 %	4	1		0.0 %				0.0 %			4	0.0 %	0	48
CW_ZA	Building 10	1472	9.82 %	6	1		0.0 %				0.0 %				0.0 %		
CW_UK	Building 09	1889	2.08 %	11	1	8	0.0 %	0	4		0.0 %				0.0 %		
Export options	s: 🎘 Excel 🎼 PDI	F															
	very hig	ph			hig	jh				medium	1				low		
	(Jess)				1.11												
														100			
														-			
																A COM	
						-				10-11							

Fig. 5.g

Note: the Service Level Agreement (SLA) classification is set on the "Plants" page (Configuration -> Installation -> Plants).

6. USAGE KPIs

The KPIs (Key Performance Indices) relating to electricity, gas and water usage are used to make a comparison between sites or between performance of the same site over different time intervals, for example to:

- 1. identify short-term energy expense factors;
- 2. monitor improvements based on previously adopted energy saving measures;
- 3. implement suitable measures and define potential investments.

To compare different types of sites, a normalisation factor is used (this can be configured in the field "Label of normalised value" in: Usage \rightarrow Detail \rightarrow (tab) KPI Configuration. In the case of a hotel, if each floor is managed by a supervisor and the total hotel surface area exceeds the sum of areas assigned to each supervisor, this fact can be taken into account to compare situations that are not equivalent.



Note: other examples of normalisation factors include store opening hours, the number of visitors or a coefficient that takes account of different environmental parameters.

6.1 Site configurations

Page for entering the total normalisation factor for the site.

Menu path: Usage Configuration Plants

record re		Gas	Water	Energy	Supervisor	Plants
Search *					guration	Usage + Configu
						Description:
 4 4 1 2 3 4 5 ▶) [1·	rows 5					Update
						Filters A
M2 Sum Of Sup	Description					
595. 200.0						Building 01
2,000 100.0						Building 02
2,000 100.0						Building 03
10,000 100.0						Building 05

Fig. 6.b

🛇 Note: the data in field (3) "Sum of supervisors" is shown after entering the areas assigned to each supervisor on the following page.

ENO

6.2 Supervisor configuration

Page for entering the normalisation factor assigned to each supervisor.

Menu path: Usage (Configuration Supervisor

record retriev	ergy Water Gas	Supervisor	Plants
🐢 Search 🌇 Car		iguration	Usage 🔶 Configu
	Plant: *		Description:
4 4 1 2 3 4 5 ▶) [1-5/22	rows 5		Update
			Filters A
M2. # Cont.	Description		
200 15.0			Building 01
100 15.0			Building 02
100 44.0			Building 03
100 62.0			Building 05
100 25,0			Building 06

Fig. 6.c

Note: field (3) shows the number of controllers connected to the supervisor.

6.3 Energy meter network layout

6.3.1 Energy meter hierarchy

There are three types of energy meters:

- global: measure the power consumption of just one refrigeration unit or a group of partial meters, each relating to a sub-group of refrigeration units on the site;
- partial: measure the power consumption of a sub-group of refrigeration units;
- disabled: ignored by RemotePRO for calculating energy consumption.

Example:

RemotePRO measures the energy consumption of a system monitored by PlantVisorPRO.

- The system includes:
- 1. a cold room, with power consumption measured by emeter1;
- 2. six cabinets, divided into groups A, B, C, whose power consumption values are measured respectively by emeter3, emeter5, emeter6. emeter4 is used to measure the total power consumption of groups B+C+D, however its value is ignored for the total calculation, as this is already used by the global emeter2.

As well as the cold room, with a cooling capacity of 100 kW, there is a number of cabinets, each with a capacity of 10 kW:

- 1 cabinet in group A for dairy (identified in the tag column in the following screen as "dairy");
- 2 cabinets in group B, for vegetables (tag = vegetables);
- 3 cabinets in group C, for meat (tag = meat);
- 3 lights in group D.

Note: with this configuration, power consumption of the lights in group D is only measured by emeter4 and is shown in the "other" column (=global usage – partial usage) in the "benchmark" report. See the corresponding paragraph.



Fig. 6.d

The page shown below is used to set the network of meters as in the previous example. The Subdevice field shows the names of the meters, emeter1,..., emeter6.

Menu path: Usage 《 Configuration 《 Energy (Water, Gas)

Plants Su	pervisor Ener	gy	Water Gas					records modified
Usage + Configuration								💎 Search 🗂 Cancel
Plant: Device: Type:				Supervisor: Variable: Tags:) P 1	1		
Update Queue Elaboration				rows 5		N 4	1 2 3	4 5 6 7 8 🕨 🚺 [1-5/303]
Filters 🔺							_	
Plant C Supervise	r = Device	Subdevice	= Variable	= Global	: Туре	#Cabinet #	Coaling C.	Tags
📃 Building 01 Building 01	Board Room Meter - Emeter1	[1] Board room	Active energy	no 🔻	Loads T		.0	3
Building 01 Building 01	Devices Switches - pChrono	[1] Socket 01	Energy of socket(address 26) [kWh]	no 🔻	Generic T		.0	1
Building 01 Building 01	Devices Switches - pChrono	[2] Socket 02	Energy of socket(address 27) [kWh]	no 🔻	Generic 🔻		.0	<u>.</u>
Building 01 Building 01	Devices Switches - pChrono	[3] Socket 03	Energy of socket(address 28) [kWh]	no 🔻	Generic		.0	1
Building 01 Building 01	Devices Switches - pChrono	[4] Socket 04	Energy of socket(address 29) [kWh]	no 🔻	Generic T		.0	Ū

Fig. 6.e

Field	Description	Field	Description
Plant	Reference site	Global: yes, disabled, no	Yes = global meter
			Disabled = meter ignored by RemotePRO
			No = partial meter
Supervisor	Reference supervisor	Type of load:	
		 refrigeration; 	
		 medium temperature compressor rack (MT); 	
		 low temperature refrigeration (LT); 	
		 low temperature compressor rack (LT); 	
		 medium temperature refrigeration (MT); 	
		air-conditioning	
		• lights	
		loads	
		• generic	
Device	Name of the device	# cabinets	Number of units relating to the measurement
Subdevice	Additional description	Cooling capacity	-
Variable	Variable measured and sent to the supervisor	Tags	Label available for entry by the user for filtering

Menu path: Consumi @ Configuration @ Water Gas

Plants	Supervisor	Energy	Water	Gas				record retrieves
Usage 🔶 Configura	ation							💏 Search 🌱 Cance
Plant: Device: Tags:					Supervisor:	月		
Update Queue Ela	boration				rows 5			
Filters 🔺								
Plant = 5	supervisor = Device	Subdevice			🗢 Variable		= Global	Tags
🔲 Building 01 Bui	lding 01 Water Meter #1	[1]	Water Meter				yes 🔻	Ī
Building 02 Bui	Iding 02 Water Meter #1	[1]	Water Meter				yes 🔻	1
Building 03 Bui	Iding 03 Water Meter #1	[1]	Water Meter				yes 💌	C.
Building 05 Bui	Iding 05 Water Meter #1	[1]	Water Meter				disabled 🔻	Ĩ.
Building 07 Building 107 Building	Iding 07 Water Meter #1	[1]	Water Meter				yes 🔻	Ī
Export options:	Excel PDF							

Fig. 6.f

Energy Water Gas Plant: 目 目 Superv Device Variable: Tags: K ← 1 2 → N [1-5/7] Update Queue Elaboration rows 5 Filters A 🗐 🗢 Plant. 🖨 Su pervisor 🗢 Device Sub = Global Building 01 Building 01 Gas Meter #1 [1] Gas Meter ٣ yes 1 . Building 02 Building 02 Gas Meter #1 [1] Gas Meter yes 1 * Building 03 Building 03 Gas Meter #1 [1] Gas Meter yes 1 disabled **v** Building 05 Building 05 Gas Meter #1 [1] Gas Meter 1 Building 07 Building 07 Gas Meter #1 [1] ۳ Gas Meter yes T. Export options: 🛼 Excel | ቝ PDF

Fig. 6.g

Note: the subdevice field is used to assign an identifier in the case where different variables on the same controller are associated with multiple devices (for example, when pCOWeb is installed on a controller such as the CAREL pChrono, each variable represents the energy read by a meter, identified in the subdevice field).



6.3.2 Change meter network layout

- It may be necessary change the layout of the network of meters, for example in the event of:
- incorrect configuration;
- data logging that started before the network was configured.

The problem thus arises of interpreting the data measured by the energy meters before and after the changes. To reprocess all of the logged data based on the new layout, click "queue".

Note: in this case, the old data will be overwritten. if the "queue" function is not used, the past data is maintained and RemotePRO begins the new calculation using the new configuration set when selecting "Update".

6.4 Usage detail

The reports are based on the energy information acquired from the field, and are used to classify the sites with highest energy consumption.

6.4.1 Create KPI templates

KPI templates define what data is included in the reports.

ouper riser	Device Kpi Templa	tes KP	I Configuration			
sage 🔶 Detail						
Description:						
v Delete				rows 5		
lters 🔺						
		* Description				and the second second
Buildings Energy						system.admin
NRG Details						system.admin
Supermarkets Consumptions						system.admin
Kpi Template						
Description:	* Supermarkets Consumptions					
Description:	* Supermarkets Consumptions					
Description: Models	Supermarkets Consumptions					
Description:	Supermarkets Consumptions Energy Meter - IME Nemod4 Energy Meter - CAREL emeter1 Energy Meter - AREL emeter3 Energy Meter - AREL emeter3 Energy Meter - Ducati energia smart più	÷ ⊕			* *	
Description: Models	Supermarkets Consumptions Energy Meter - IME Nemod4 Energy Meter - CAREL emeter1 Energy Meter - AREL emeter1 Energy Meter - AREL emeter3 Energy Meter - Ducati energia smart piú	* *			1 7	
Description: Models Plants	Supermarkets Consumptions Energy Meter - IME Nemod4 Energy Meter - CAREL emeter1 Energy Meter - CAREL emeter3 Energy Meter - Ducati energia smart piú Supermarket 04 Building 03 Building 02 Building 03 Building 01	· · ·	Supermarket 04 Supermarket 01 Supermarket 02 Supermarket 03		7 7	
Description: Models	Supermarkets Consumptions Energy Meter - IME Nemod4 Energy Meter - CAREL emeter1 Energy Meter - AREL emeter1 Energy Meter - AREL emeter3 Energy Meter - Ducati energia smart più Supermarket 04 Building 03 Building 03 Building 04 Building 01	· · · · · · · · · · · · · · · · · · ·	Supermarket 04 Supermarket 01 Supermarket 02 Supermarket 03			

Fidite		
	Building 09 - 🕑 Supermarket Heos 03 Supermarket Heos 02 Hyperstore 05 -	
Controllers		
Plant:	J.	
Supervisor:		
	Θ	
	· ·	

Fig. 6.i

Procedure: create KPI template

1. click New (1) on the main page: the secondary page will be displayed;

2. enter (4) the description (name) of the new report.

Use the mouse to select the rows in the window on the left, and then use \bigcirc (\bigcirc) to add (remove) them to (from) the window on the right. The data contained in the reports can be selected based on:

- a. the model (5) of energy meter;
- b. the site (6) to acquire the data from;
- c. the controller that is shown after having entered the site (8) and the corresponding supervisor (9).

• Note: the data shown in the reports are filtered based on all the filters (logical AND). A new report template can only be saved if at least one window on the right is populated with data.



6.4.2 Set report colours/normalisation factor label

The background and text colours of the results shown in the reports can be set as desired.

		Default se	ettings			
Maximum value	Red	Average value	Yellow		Minimum value	Green
Over the average value	Orange	Under the average value	Light green]		

Menu path: Usage 🐁 Detail 🐁 KPI Configuration

Plant	Supervisor	Device	Kpi Templates	KPI Configuration			record retrieved
Usage 🕈 Detail							V Update →•+ Default
Engen							
chergy	and the second						
Label Of Norma	alizated Value:	Background Color			m2	Font Color	
Maximum Value	e:				Maximum Value:		
Over The Avera	age Value:						
Average Value:							100
Under The Aver	rage Value:						
Minimum Value	e:						
					Fig. 6.j		

Procedura 1: set report colours

1. Click the coloured square (e.g. red): use the cross-shaped cursor on the palette to select the new colour;

2. Click "Update" to save..

Procedura 2: set normalisation factor label

- 1. Enter the normalisation factor label in the field;
- 2. Click "Update" to save.

 \bigcirc Note: the label will be shown on the following pages: Usage \rightarrow Configuration \rightarrow Plants/Supervisors

6.4.3 Usage detail by site, supervisor

The reports are used to classify the sites in order of decreasing usage.

🛇 Note: the usage values can be shown by site or by supervisor, as there may be multiple supervisors on the same site.

Menu path: Usage 🧉 Detail 🗉 Plant, Supervisor

Plant	Supervisor	Device	Kpi Templates	KPI Configuration							Elaborated
Usage 🔶 Detail											search
Main Information Kpi Template: * From:	131 Superma 01/25/2017	kets Consumptions	_] <i>B</i> ^{E1}					Period: r	nonthly T		
										P	age 1 [0/0]
Filters 🔺							-	-			
1			# Plant				🚽 Value (KWh) 🚽 %	MZ	🗄 N. Value (KWh) 😂 %	# Cont. 🗢	Norm. Value
Supermarket 05							71610.70 61.29	5300.00	13.51 39.48	65.00	1101.70
Supermarket 04							20218.90 17.30	5000.00	4.04 11.62	18.00	1123.27
Supermarket 03							16582,70 14.28	2000.00	8.34 24.37	12.00	1390.23
Supermarket 01							8327.50 7.13	1000.00	8.33 24.33	8.00	1040.94
						average	29209.95		8.56		1164.03
						total	116839.80				
				Fig. 6.	k						
Field	Descriptio	n			Field	Descrip	otion				
Plant	Reference	site			N. Value (kWh) Normal	ised value (kW	/h)			
Value (kWh)	Energy co	nsumption			%	Norma	ised energy co	onsum	otion as a %		

Cont.

Norm. val

Procedure: detailed usage report

% M2

1. Click (1) and select the report template;

Energy consumption

Normalisation factor

Energy consumption as a %

2. In (2) select the start analysis date and the interval from the start analysis date: 1 day, 1 week, 1 month, 1 year;

3. Click "Search" to generate the report.

Normalised energy consumption as a %

Normalised value (energy per meter)

Number of meters



6.4.4 Usage detail by device

This report displays site usage divided by device (energy meter). The data corresponding to each energy meter are sorted in decreasing order and divided by the number of controllers, so as to estimate the average energy consumption per unit.

Menu path: Usage \rightarrow Detail \rightarrow Device

Plant	Supervisor	Device	(pi Templates	KP1 Configurat	tion						Elab
Usage 🔶 Detail											•
Maria Tafa anakina											
Main Information											
Kpi Template: *	131 Supermarket	ts Consumptions				Supervisor:		19 A			
From:	01/25/2017	21				Period:	monthly •				
filters A											
					Global						
= Plant	= Supervisor	= Device	Subdevice	= Value (KWh)	= %	# Cont.	Norm. Value	= %	C. C.	= Val. / C. C.	÷ %
upermarket 03	Supermarket 03	Egergy Meter	1	16682.70	66.70	12.00	1390.23	57.18	45.75	364.65	58
iupermarket 01	Supermarket 01	Global Energy Meter	1	8327.50	33,30	8.00	1040.94	42,82	32.50	256.23	-41
			average	12505.10			1215.58			310.44	
			total	25010.20							
xport options: 👧	Excel р PDF										
					Partial						
3 Plant	= Supervisor	# Device	Subdevice	= Value (KWh)	= %	# Cont.	= Norm. Value	2 %	C. C.	= Val. / C. C.	÷ %
upermarket 05	Supermarket 05	Refrigeration Consumption	ons 1	71610.70	73.14	65.00	1101.70	36.90	253.50	282.49	38
upermarket 04	Supermarket 04	Energy Meter - Refrigerat	ion 1	20218.90	20.65	18.00	1123.27	37,63	73.85	273.78	36
upermarket 01	Supermarket 01	Refrigeration Energy	1	5082.20	6.21	8.00	760.28	25.47	32.50	187.14	-25
			average	32637.27			995.08			247.81	
			1.1.1	07011.00							

Field	Description	Field	Description	Field	Description
Plant	Reference site	Value (kWh)	Energy consumption	%	Normalised value as a percentage
Supervisor	Reference supervisor	%	Energy consumption as a %	C.C.	Cooling capacity
Device	Reference device	# Cont.	Number of meters	Val/C.C.	Value/cooling capacity
Subdevice	Number of sub-devices	Norm. val.	Normalised value (energy per meter)	%	Percentage value

6.5 Create report template for usage KPIs

There are two types of templates for comparing the energy performance of different sites:

1. "benchmark": comparison of data presented in table form (number of sites: unlimited);

2. "analysis": comparison of data presented as a pie chart and time distribution with histogram (number of sites: MAX 4).

Menu path: Usage & Benchmark & Report templates

Benchmark Ana	lysis	Report Templates						record retrieved
Usage + Benchmark								🐢 Refresh 🏻 🏠 Cance
Description:				Period:	T		Type: All	T T
New Delete			rc	ws 5				K ← 1 2 → N [1-5/7]
Filters A								
🔲 Туре		* Description	= Share	= Period	₹ D	≑ E.	S User	= Update User
Benchmark Supermarkets daily t	benchmark			daily	4	-	system.admin	system.admin
Benchmark All stores weekly				weekly	V		system.admin	system.admin
Analysis Hypermarkets				daily		4	system.admin	system.admin
Benchmark Northern stores com	parison			daily		4	system.admin	system.admin
Benchmark Market Chain Benchr	mark			weekly	*		system.admin	system.admin
Export options: Excel Pop PD)F							

Fig. 6.m

Template	Real Property in the second se	record	retrieved
Usage + Benchmark	Report Templates	Delete	Update
Kpi Template Type: Description: Public: Channel: Email To Send Expo Report Frequency (Period: 🗶 daily 🔻	
Data Plant Type: Open: Plant:	Hyper No 24/7 Supermarket 02 Supermarket 03 Supermarket 04	Area: America	
		Fig. 6.n	

Field	Description	Field	Description
Kpi template			
Туре	Type of report: Benchmark, Analysis	Email to send export	As per export template
Description	Name of the report	Report frequency	Data sampling frequency
Public	Private: visible only to members of the user's company	Period	Period of data representation (from the starting date)
	Shared: visible to everyone		
Channel	Email: report sent via mail		
	Download: report saved in Reports -> Reports archive		
Data (filters)			
Plant type	Select one or more types: Hypermarket, Super, Convenience,	Area	Site area
	Express, Discount, Cold store, Other.		
	NOTE: no checkboxes selected is		
	equivalent to all checkboxes selected		
Open	24/7 (24 hours a day, 7 days a week),	Plant	Click the selection box: a drop-down menu is shown
	Not 24/7		for selecting 1 to 4 sites (MAX 4 only for "Analysis")

The procedure for creating a new report is similar to the procedure described under "Navigation".

6.6 Usage benchmarks

These reports compare consumption between two or more sites, listed in decreasing order of energy consumption (over a certain time interval).

Menu path: Usage 🗉 Benchmark 🗉 Benchmark

Benchmark Analysis Repo	Templates									Elaboral
Usage 🔶 Benchmark							-	Search 7	Cancel	Print En Scher
Template: Euildings Period: Monthly Area: Plants: Building 02 Building 03 Building 07 B	Plant Type: Use Normalized Values:	_		Fr Ol	rom: 🚸 01/2 pen:	1/2017	4	21		
Analyze										Page 1 [0/(
Filters 🔺										
	= Plant	Plant Type	= Opening	🗙 Energy ≑	Refrigeration	= Lights	air Cond.	= Loads	a Generic a	Other (Energy)
Building 05		Other	No 24/7	259,959	17,446,28	-	7,245.32	101,315.06	666.49	103,285.27
Building 03		Other	No 24/7	37,255		-	4,910.91	14,120.69	645.26	17,578.13
Building 02		Other	No 24/7	24,834	4	2,532	-	13,729	386.82	8,186,18
Building 01		Other	No 24/7	4,678			-	35.6	39.92	4,602.48
Building 10		Other	No 24/7	3,901	4	1,793	892.11	B117	43.86	1,090.33
			average total	66,125.4 330,627	47,446.88 47,446.88	2,162.5 4,325	4,349.45 13,048.34	25,856.41 129,282.06	356.47 1,782.34	26,948.48



Procedure 1: usage benchmark (comparison) between different sites in table form.

- 1. Click (1): a drop-down menu is shown for selecting the report template, by double clicking;
- To change the values of the filter fields, loaded by the report template, enter them manually (e.g.: to add/remove sites, use field (3) and then click "Search");
 Click "Search";
- Note: the data is shown in table form, with columns relating to total energy (Energy), divided by refrigeration unit (medium and low temperature units combined), lights, air-conditioning unit, loads and generic consumption. The last column "Other" represents the difference between global energy and the sum of consumption values divided by type (partial).

The same data can be represented on a pie chart and time-based histograms, so as to compare consumption data by time.



Procedure 2: time-based analysis of an individual site at different intervals.

Complete procedure 1 to show the data in table form.

- 1. in (4), select the checkbox only relating to the site being analysed and click "Analysis";
- 2. a page is shown with the consumption values for two different periods: set the start analysis date for the two periods and the duration, and click "Search"; the trends in consumption over time are shown on histograms.
- Note: clicking the histogram for a time unit (e.g.: hour) adjusts the pie chart change so as to represent the information with the same resolution. Click outside of the histogram to return to the global pie chart.



Procedure 3: add a variable

1. click 5, 6, 7, 8 to filter the data based on the site, supervisor, device and variable;

2. click (9) "new" and "Search" to update the data and show the graph.

Note: additional variables can be useful, for example, to compare air-conditioning system consumption against outside air temperature and relative humidity over time.



Procedure 4: time-based analysis of different sites

- Complete procedure 1 to show the data in table form.
- 1. In (4) select the checkboxes relating to the sites (MAX 4) being analysed, and click "Analysis";
- 2. The trends in consumption over time are shown on histograms.

ANALYZE



Note:

Opening

- Based on the analysis period, the histogram represents the data distributed over different intervals:
 - □ 1 day -> 24 hours;

24 hours / 7 days, or not

- □ 1 week -> 7 days;
- □ 1 month -> 30 days;
- □ 1 year -> 12 months.
- the colours in the site table are defined under: Usage -> Detail -> KPI configuration;
- the colours on the pie charts (not modifiable), are used to compare partial energy consumption (air-conditioning/refrigeration/lights,...) on the sites;

Energy consumed: air-conditioning

• the colours on the histogram, which represents specific consumption over the period, are the same as in the first column of the site table;

Air-cond

- the colours on the graphs of additional variables relate to the corresponding site;
- if the sites also have water and gas meters, other tables will be displayed.

values

ENG

6.7 Usage analysis

This report compares consumption between 1 ... 4 (MAX) sites, listed in decreasing order of energy consumption (over a certain time interval), in table form, on pie charts and histograms.

Menu path: Usage \rightarrow Benchmark \rightarrow Analysis

The procedure is similar to procedure 4 described in the previous paragraph, without making the selections. Use the "Analysis" template.



Fig. 6.r

6.8 Parameter broadcast

The parameter broadcast function is used to simultaneously manage the value of one or more parameters on a group of controllers/devices across numerous sites, based on pre-defined rules. The broadcast function can be activated manually by the user, or scheduled.

EXAMPLE: one way to implement an energy saving strategy, in a certain time period, may be to change the temperature set point and differential for all the controllers on a specific site.

Menu path: Activity → Parameter Broadcast

record retriev		Broadcast Operations	Broadcast Schedulations	Templates
🚓 Refresh 🎝 Car			Broadcast	Activity + Parameters E
	Division:			Description:
4 4 1 2 3 4 ▶ ▶ [1-5/19	vs 5		s New	Vew Delete Save As
				Filters 🔺
Tags Company		* Description		
int type: analog value: 0.0	variable model: setpoint type: a		oint	cstore summer setpo
it;setpoint type: analog value: 20.0 Customer 04	variable model: ac-unit;setpoint		nt	cstore winter setpoin
zone type: analog value: 23.9 ditySetpoint type: analog value: 50.0 ngDifferential type: analog value: 2.0 nit type: analog value: 2.0	variable model: tempzone type: variable model: humiditySetpoin variable model: coolingDifferent variable model: setpoint type: a			emea zone units
int type: analog value: 2.0 ket device: fruit variable model: defrost_inteval type: integer value: 8.0 ket device: fruit variable model: night_diff type: analog value: 2.0	variable model: setpoint type: a supervisor: supermarket device: supervisor: supermarket device:			energy optimization
ket device: fruit variable model: night_diff_type: analog_value: 2.0 kets_device: cabinet_variable_model: setpoint_type: analog_value: 0.0	supervisor: supermarket device: supervisor: supermarkets device			energy saving

DETAIL PAGE1



Procedure: Create a recipe (rule) for broadcasting the parameters

- 1. click (1): the secondary page is displayed (to copy an existing recipe select it and click "Save as");
- 2. enter (2) the description (name) of the recipe;
- 3. specify the customer (3), the area (4) and the sites (5): these fields act as filters on the set of devices that the recipe will manage;
- 4. under Tag (6): click the arrows: drop-down menus will be shown for selecting the tags relating to the site, supervisor, device and variable for the recipe being set, and the type (digital, analogue, integer);
- 5. finally click (7) "+": a row is shown in zone (8) that specifies which devices and variables will be managed by the recipe;
- repeat steps 4, 5 to add new variables to the recipe; 6.
- 7 click (9): zone (10) displays the devices that will be involved in the broadcast function;
- 8. finally click (11): start broadcast.

Note: if on a controller the value of a parameter is outside of the allowed limits, the change will be ignored. Consistency (e.g. verification that the new set point is between the minimum and maximum values) is managed by the local supervisor.

6.8.1 Scheduled broadcasts

As well as being started manually, a broadcast can also be scheduled. When scheduling a broadcast, the administrator also defines which users are able to start the broadcast.

Menu path: Activity (Broadcast schedulation

Template	es Broadcast	Schedulations	Broadcast Operations								record retrieved
Activity 🔶 P	Parameters Broadcast					_				-	Refresh 7 Cance
Descriptio)n:						Hour:				
New Delete	e			rows 5						4 4 1 2	▶ ₩ [1-5/6]
Filters 🔺											
🔲 = Enable			Description		Account	* Schedule Time	Day Of The Week	= Interval	‡ Start	≑ End	Company
	cstore summer setpoint			595	stem.admin	06:00	Wednesday	4	6/1/16 12:00:00 AM	6/1/16 12:00:00	AM
	cstore winter setpoint			sys	stem.admin	08:15	Friday	4	1/1/16 12:00:00 AM	1/1/16 12:00:00	AM
	emea zone units			sys	stem.admin	09:00	Monday Wednesday Friday				
	energy optimization			sys	stem.admin	10:15	Monday				
E 🛷	energy saving			sys	stem.admin	16:00	Thursday				

DETAIL PAGE1

Broadcast Schedulati	ion	record retrieved
Activity + Parameters Broad	cast > <u>Broadcast Schedulations</u>	V Update — Delete
General Information		
Enable:	2	Template: * 19 cstore summer setpoir 🔎
Hour:	* 06 *	Minute: * 00 *
Day Of The Week:	* 🕨 Wednesday	Account: * system.admin
Valid Only In Interval:	* 🗹	
Start:	* 06/01/2016 4 21 »	End: * 06/01/2016
		Fig. 6.v

Procedure: Scheduling a broadcast

1. click (1), the secondary page is displayed; in (3) select the recipe template being scheduled, or alternatively:

- 2. double click the recipe row: the secondary page is displayed;
- 3. check (2) to enable scheduling and the hours/minutes and day of the week for broadcasting;

4. select the user account (4): see the table below for the permitted operations based on the profile.

• Note: the "user" level account cannot access the "Activity" menu and thus "Parameter broadcast". Nonetheless, the administrator can assign scheduling to a "user" level account; if the account has authorisation to perform the broadcast operations on the local supervisor, these will be performed.

ENG

6.8.2 Verify broadcast outcome

Once a broadcast has been completed (manual or scheduled), the outcome can be verified.

Menu path: Activity @ parameter Broadcast @ Broadcast oprations

Templates	Broadcast Schedulations	Broadcast Operations			record retrieved
Activity > Parameters	Broadcast			_	Refresh 🕥 Cance
Description:	< 1 <u>211</u>)-	Account: *	Status:	×	
		rows 5			Page 1 [5/5]
Filters 🔺					
and the second division of the	Description	Tags 🗘 Account	🕳 Start	# End	E Status 💠 Company
energy optimization		area: * Europe supervisor: supermarket device: fruit variable model: defrost_inteval type: integer value: 8.0 system.admin 4/	/25/17 11:49:56 PM 4/	/25/17 11:53:56 PM	*
energy optimization		area: * Europe supervisor: supermarket device: fruit variable model: defrost_inteval type: integer value: 8.0 system.admin 4/.	/25/17 11:49:36 PM 4/	/25/17 11:59:56 PM	*
energy optimization		area; " Europe supervisor supermarket device: fruit variable model: defrost_inteval type: integer value; 8.0. system.admin 4/ supervisor supermarket device: fruit variable model: night_diff type: analog value: 2.0	/25/17 11:49:24 PM 4/	/25/17 11:50:56 PM	*
energy optimization		supervisor: supermarket device: fruit variable model: defrost_inteval type: integer value: 8.0 supervisor: supermarket device: fruit variable model: night_diff type: analog value: 2.0	/25/17 11:48:53 PM		
energy optimization		supervisor: supermarket device: fruit variable model: defrost_inteval_type: integer value: 8.0 supervisor: supermarket device: fruit variable model: night_diff_type: analog_value: 2.0	/25/17 11:46:53 PM		
	_	Fig. 6.w			

DETAIL PAGE

Broadcast Operation				record retrieved									
Activity + Parameters Broadcast > Broadcast Opera	Activity + Parameters Broadcast > Broadcast Operations												
General Information													
Description: energy optimization	Tags: Supervisor: supermarket; device: fruit; variable model integer; value: 8.0; supervisor: supermarket; device: fruit; variable model value: 2.0;	: defrost_inteval; type: + : night_diff; type: analog; *											
Start: 21/04/17 07:07:35,170	End: 21/04/17 07:09:45.056												
Plant	Supervisor	Start	End	Result									
Supermarket 01	Supermarket 01	21/04/17 07:07:35.420	21/04/17 07:08:23.449										
Supermarket 02	Supermarket 02	21/04/17 07:07:35.482	21/04/17 07:09:45.056	*									
Cuparmarket 02	Supermarket 03	21/04/17 07:07:35 457	21/04/17 07:08:20 745	66									

Fig. 6.x

Procedure: Verify broadcast outcome

- 1. to check the outcome of the broadcast operation, go to: Activity \rightarrow Parameter broadcast \rightarrow Broadcast operations, the green check mark (red cross) indicates that the operation was successful (not successful);
- 2. double click the row relating to the recipe: the secondary page with the details is displayed.

7. PERFORMANCE KPIS

The temperature KPI reports offer users a rapid overview of supervisor performance. By identifying the devices that are not working optimally, corrections can be made to the configuration or parts replaced, so as to prevent the loss of goods and guarantee product quality.

7.1 Create a temperature KPI template

- In the KPI templates, data can be grouped by:
- model;
- site;
- supervisor;controller
- controller.

Menu path: Performance \rightarrow Temperature compliance \rightarrow KPI Templates

Period	Daily	Kpi Templates	KP1 Configuration			record retrieved
Performance +	Temperature Complia	ince				🐢 Refresh 🛛 🎝 Cancel
Description:						
New Delete				rows 5		K ← 1 2 3 4 → M [1-5/17]
Filters A						
			* Description			= Account
LT Cabinets	S				system.admin	
MT Cabinets					system.admin	
Supermarkets	s Fruit And Vegetable	s			system.admin	
EMEA Building	igs AC				system.admin	
CUstomer 01	Chest Freezers				system.admin	
Export options:	🔝 Excel р PDF					

Fig. 7.a

DETAIL PAGE

Kpi Template		record retrieved
Performance + Temperature Complian	e > <u>Kpi Templates</u>	
Kpi Template		
Description:	te Supermarkets Fruit And Vegatables	
Models		
	PJ-Easy IR 33 DIN - H MMXPRO IR32 M S Y X C for refrigeration IR 33 - C	
Plants		
	Supermarket 04 Building 03 Building 02 Building 06 Building 01	-
Supervisors		
Plant:	Building 09 Supermarket Hoos 03 Supermarket Hoos 02 Hyperstore 05	
Controllers		
Plant: Supervisor:		2

Fig. 7.b

Procedure:

- 1. Click "new" to display the secondary page and enter the name of the new template and the filter fields, based on: model/site/supervisor/controller;
- 2. Use the mouse to select and double click (or click ^O) the option to load a model/site/supervisor/controller in the field on the right (similarly, select and click ^O to remove it);
- 3. Click "+New" to create the template only for the current user or "+Create for everybody" to make the template visible to all users.



7.2 Variables and thresholds for temperature KPI evaluation

Monitoring of control system performance depends on the variables sent to RemotePRO by the local supervisors.

The following variables are considered in the reports:

- 1. control temperature;
- 2. set point;
- 3. differential;
- 4. cooling (compressor relay);
- 5. defrost (defrost relay

Menu path: Performance \rightarrow Configuration \rightarrow Threshold

The page displays all the devices that are potentially enabled for performance analysis.



Fig. 7.c

Note:

- the control temperature is the only compulsory variable for performing the analysis. To display only the supervisors that send the "Control temperature" variable, check (2) and click "Search";
- the absolute thresholds are fixed, the relative thresholds refer to the set point. The default thresholds refer to the set point and are shown in zone 1;

• logged variables are marked with a green check, those that are not available have a red cross.

The following situations are possible, in which each zone is numbered and the zone number depends on the number of variables sent.

ABSOLUTE THRESHOLDS	RELATIVE THRESHOLDS
Available variables: control temperature, thresholds (3 zones)	
REG_T	REG_T ↑
High threshold	
Low threshold	
	NOTE: this report does not provide useful information.
	Fig. 7.d



Fig. 7.f

▶ Note: REG_T = control temperature.

7.3 KPI temperature report representation

The areas defined by the 5 parameters: low temperature threshold, set point, differential, high temperature threshold, are represented as follows:

Over critical	Temperature value above the high temperature threshold (critical)
Over range	Temperature value between the differential and the high temperature threshold (critical)
In range	Temperature value between the set point and the differential threshold
Under range	Temperature value between the set point and the low temperature threshold (critical)
Under critical	Temperature value below the low temperature threshold (critical)
Undefined	Temperature value not recordedo



To change the colours:

Menu path: Performance \rightarrow Temperature compliance \rightarrow KPI Configuration

record retrieved			KPI Configuration	Kpi Templates	Daily	Period
√ Update →••+ Default				ice .	Temperature Compliar	Performance + T
					ompliance	Temperature Co
	Font Color			Background Color		
—		Over Critical:				Over Critical:
						Over Range:
						In Range:
- MI -						Under Range:
E						Under Critical:
E						Defrost:
1		Undefined:				Undefined:



Procedure: change the colour of the bar charts

1. select the colours (background and fond);

2. click "Update". The results of the setting will be displayed for all the "Performance" menu items.

Note: after having set the colours, to make the changes active, it may be necessary to clear browser's cache.

7.3.1 Display temperature KPI reports by period

The data period options are daily, weekly, monthly.

Menu path: Performance \rightarrow Temperature compliance \rightarrow Period

DETAIL PAGE1

(at the bottom right, the numbers in red indicate active alarms)

Period Daily Kpi Temp	lates KPI Config	juration					record	retrieve
Performance							·	searc
Kpi Template: * 332 Hyperstores	P		From: * 10/18/2016	4 141 ×	Period	i: monthly T]	
			rows 5	1	(1 0 11 12 13 14 1	5 16 17 🕨	N [66-;	70/549]
Filters A								
Plant = Supervisor = Device Subdevice			%		Defrost	Cooling	LT HT O	DD AA
Hyperstore 01 Hyperstore 01 Frozen food 95 cabinet	41	%	31 %	25 %	2 2% - (975 m	in) 0% - (0 min	0 0 0	0
Hyperstore 01 Hyperstore 01 Frozen food 96 cabinet	11 %	35 %	a second data and the	51.0	3 2% - (925 m	in) 0% - (0 min	0 0 0	4
Hyperstore 01 Hyperstore 01 Frozen food 97 cabinet	12 %	32 %	4	P M.	7 % 1% - (875 m	in) 0% - (0 min	0 28 0	58
Hyperstore 01 Hyperstore 01 Frozen food 98 cabinet	.22 %	37 %		35%	2 1% - (795 m	in) 0% - (0 min	0 0 0	0
Hyperstore 01 Hyperstore 01 Frozen food 99 cabinet	26 %		39 %	32 %	2 1% - (670 m	in) 0% - (0 min	0 1 0	1
Export options: 🔜 Excel 📭 PDF								
Over critical: temperature's value raised over high Over range: temperature's value varied between or In range: temperature's value varied between set Under range: temperature's value varied between Under critical: temperature's value descended un Undefined: temperature's value have not been sto	critical threshold lifferential and high critical thresho point and differential threshold set point and low critical threshold der low critical threshold red	ld						

F:		-		L
ыл		1		n
119	٠		٠	

Field	Description	Field	Description	Field	Description
Plant	Reference site	%	Percentage of time in which the temperature is within	ΗT	High temperature alarm
			the predefined areas		
Supervisor	Reference supervisor	Defrost	%/minutes of defrosting	OD	Open door alarm
Device	Device name	Cooling	%/minutes of compressor	AA	All the alarms
			activation		
Subdevice	Sub-device identifier	LT	Low temperature alarm		

DETAIL PAGE2



Fig. 7.i

Procedure:

1. Enter the KPI template, the starting date and the analysis period;

2. Click "Search": secondary page 1 is shown, with a diagram that expresses the percentage of time in which the control temperature is within the various predefined areas;

3. Double click the row relating to the site (plant): secondary page 2 is shown, with the graph displaying the trend in temperature; each row represents one day.

Note: Double click a row: page 3 is shown, with the graph relating to the device and all of its variable

Note:

the colours on the temperature graphs are fixed, as described in the table below:

VARIABLE	COLOUR
Control temperature	Dark yellow
Set point	Green
Defrost	Purple
High temperature threshold	Red
Low temperature threshold	Blue
Differential	Light yellow

• when clicking the box with the temperature graph colour key, this moves from one corner to the other.

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<u>CAREL</u>

PROCEDURA: HACCP Report

Press on "HACCP" text in the botton of table. The result is a PDF file similar to:

remotepro							F	Perio	od p	er [Devi	ce													CAREL
Description	Day	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 18, 2016	-17.14	-18.87	-8.39 *	-19 50	-20.38	-20.26	-20.54	-20.35	-20.19	-20.33	-19.64	÷17.35	-19.55	-18.02	e17.91	-17.49	-16.71	-16.71	-19.64	-20.34	-19.77	-18.90	-16.77	-20, 16
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 19, 2016	-18.27	-17.40	-8.45 *	-18.88	-18.95	-18.11	-19.48	-19.44	-20.33	-20.39	-20.33	•20.47	-20.45	-20.46	-20.42	-20,50	-20.35	-20.53	-20.47	-20.43	-20,45	-20.53	-20.41	-20.54
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 20, 2016	-20.42	-20.09	-8.74 * 帶	-19.58	-20.44	-20.62	-20.46	-20.25	-20.26	-20.25	-20.46	-20.17	-20.12	-20.30	-15.62	-16.17	-18.87	-18.63	-15.75	-14.94	-16.26	-19.95	-19.95	-15.91
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 21, 2016	-16.63	-16.35	-7.33 *	-18.55	-19,48	-19.29	-17,29	-16.36	-15.51	-19.49	-20.18	-20.32	-19 79	-16,46	-15.97	-14.69	-18.07	-18.04	-17.54	-17.62	-17,98	-17.57	-18.08	+17,41
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 22, 2016	-18 39	-17.25	-6.76 *	-16.48	-16.95	-17.90	-18.57	-16.83	-15.91	-16.86	-14.25	-14.37	-15.40	-15.72	-14.3B	-15.42	-17.32	-15.86	-16.36	-15.27	-15.69	-17.03	-13.28	-16.18
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 23, 2016	-17,47	-16.73	-8,46 *	-14.98	-16.90	+18.09	-13.02	-16.79	-17.65	-17.42	-14,57	-13.18	-13.35	-13.41	-13.38	-14.09	-14-45 *	-19,90	-19.44	-19.35	-19.36	-19.36	-19.29	-19.40
Hyperstore 01 Hyperstore 01 Frozen food 97 1 Temperature	Oct 24, 2016	-19.32	-19,36	-10.22	-19.11	-19,44	-19.40	-19,28	-19.38	-17.98	-16.18	-14.40	-18.78	-14.60	-17.68	-18.48	-18.91	-19.03	-18.97	-17.56	-14.44	-14.33	-18.53	-17.53	-14.13
	Over cr	itical		ter	nperat	ure's v	alue ra	aised o	ver hig	h critic	cal thre	shold													
	Over ra	inge		ter	nperat	ure's v	alue va	aried b	etwee	n differ	ential	and hig	gh critic	cal thre	eshold	-					_				
-	In rang	e		ter	nperat	ure's v	alue va	aried b	etwee	n set p	oint an	d diffe	rential	thresh	old										
	Under	ange	1	ter	nperat	ure's v	alue va	aried b	etwee	n set p	oint an	d low	critical	thresh	old						-				
	Under	critical		ter	nperat	ure's v	alue d	escend	led un	der low	/ critica	al three	shold		_	_				_	-				
	Undefin	ned	_	ter	nperat	ure's v	alue h	ave no	t been	stored		-	_							_	-				
12	Defrost			de	frost re	lay ha	ve bee	en turn	ed on																

Fig. 7.j

7.3.2 Display daily temperature KPI report

In this report, the data are represented on a daily basis, and the behaviour of different devices on the same day can be compared. The procedure is similar to the one described in the previous paragraph.

Menu path: Performance \rightarrow Temperature compliance \rightarrow Daily



Fig. 7.k

8. REPORT

8.1 Export report configuration

Menu path: Report \rightarrow Configuration \rightarrow Export configuration

Scheduled Reports Report T	emplates Export Config.	record retriev
Reports + Configuration		√ Upo
JSV Settings		
eparator: \star 🔅		Decimal Places: * 5
housands Separator:		Decimals Separator:
leader Settings		
ihow Plant:		Show Supervisor:
how Device:		Show Variable:
Group Plant (If Possible): 🗹		Group Supervisor (If Possible): 📝
mail		
Subject: * Export from Remote	PRO Server	
	Fig. 8.a	

Field Description Description Field CSV settings Separator Thousands separator Separator character Decimal places Number of digits after the decimal point Dec. point or comma, based on the format (e.g. ITA/USA) Decimal separator Dec. point or comma, based on the format (e.g. ITA/USA) Header settings Show plant Include site name Show supervisor Include supervisor name Show device Include controller name Show variable Include variable name If possible, the site is only shown once in the header Group supervisors If possible, the supervisor is only shown once in the header Group plant Email Subject Subject of the email with the exported report

8.2 Create template

To select the logged data to be exported, first the template (DataLog) describing which variables are included needs to be defined. The variables can be selected in the templates in two ways:

- variable model: the variables are selected according to the model of device; when exporting, all the devices on all the sites with the specified model and the selected variables will be identified
- 2. variable: the variables are selected individually for each specific device on a site.

Menu path: Report \rightarrow Configuration \rightarrow Report Templates ("New button")

Report Template	neuron de la constance de la co	retrieved
Reports → Configuration →	> Report Templates	Update
Kpi Template		
Description: Channel: Email To Send Export:		
Period:	* daliy T	
Variable Model		
variable model Models:	159 pRack PR100 (FLSTDmR0) pRack PR100 (FLSTDmR0C) 1 - Fans compensation scheduler pRack PR100 (FLSTDmR0C) PRack PR100 (FLSTDmR0C) pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Suction removare pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Suction removare pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Backup suction pressure pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Backup suction pressure pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Backup suction pressure pRack R100 (FLSTDmR0C) 1 - Backup suction pressure PRack R100 (FLSTDmR0C) 1 - Backup suction pressure	
Variables variables Supervisor: Device:		
	Fig. 8.b	
nolate		
cription	Description of the report, used as the prefix for the file name and the subject of the email	
olic	Template visibility	
	- Private: only available to the user that created it	
	- Shared: also available to other users from the same company	
nnel	How the report is sent	
	- Email: the report is sent as an email attachment	
	- Download: the report is saved on the server and can be viewed online in the "Reports archive"	
ail to send export	Email address that the report will be sent to. Multiple addresses can be entered, separated by a semi-colon ','	
ort frequency	Frequency for logging the variable values	
od	Time interval of the exported data: daily weekly monthly	



Procedure: (create template)

- 1. enter the description of the new template and the fields that define the report;
- 2. select the variables by model or supervisor/device.

Note:

- when selecting "Variable model", variables can be added from known models, and the data relating to these variables exported from all instances of that model. If selecting "Variable", on the other hand, the data relating to the selected variables will be exported;
- it is not possible to export specific variables and model variables at the same time.

8.3 Manual export

This option generates a report manually. The fields are initially populated with the default values defined in the selected template. The values can then be changed before clicking the button to generate the report.

Menu path: Report \rightarrow Export export

Export Report				not found
Reports + Export R	eport			Page Contraction
Template Type: Description: Channel: Email To Send Ex From:	DataLog V Hyperstore pRack Data - 2016-10-23 Enail Download prott: system.admin@remotepro.com I0/23/2016 (Template: * Hyper iod: * daily	store pRack Data -	Daily J ^{III}
	Fig. 8.c			
Field	Description		Field	Description
Template	Type of template to be used:		Email	Email address that the report will be sent to.
type	• DataLog		to send	Multiple addresses can be entered, separated by a
	Energy Benchmark (Benchmark/Analysis, see the corresponding section	on)	export	semi-colon';'
	HACCP (daily "Temperature compliance", see the corresponding section	on)		
KPI template	List of available templates, filtered according to the selected type		From	Report starting date
Description	Description of the report, used as the prefix for the file name and the sul	oject of	Period	Interval of the exported data: daily, weekly, monthly
	the email			
Channel	How the report is sent			
	 Email: the report is sent as an email attachment 			
	Download: the report is saved on the server and can be viewed online	5		

Procedure: export report:

- 1. select the type of template, the name, the interval of data analysis (starting date and period) and how the report is exported: if sent by email, enter the address;
- 2. click "Queue elaboration" to start exporting the report;
- 3. at the top right, the message "record queued" is displayed;
- 4. after processing:
 - i. the report will be sent by email, or
 - ii. will be available under Reports -> Reports archive.

Note: once started, this process will be run in the background.

8.4 Scheduled export

This function is used to generate a report at a scheduled time. The fields are initially populated with the default values defined in the selected template. The values can then be changed before clicking the button to generate the report.

Menu path: Report → Configuration → Scheduled Report ("New" button)



Fig. 8.d

Scheduled Repor	rt				record retrieved
Reports + Configuratio	on > <u>Scheduled Reports</u>				Delete 🗸 Updat
Enable:	×.				
Template Type:	* Energy Benchmark	•	Kpi Templat	e: * Supermarkets Consumptio	ons
Description:	* Supermarkets Consumptions - Wee	kly			
Channel:	* Email 🗹 Download 🗹				
Email To Send Expo	rt: * system.admin@remotepor.com;en			and the second s	
Period:	* weekly * "Start every week at	00:00"	Day Of The V	Veek: Monday 🔻	
Data Export Start T	ime: * 00:00 T				
			Fig. 8.e		
eld	Description			Field	Description
mplate type	Type of template used:			Email to send	Email address that the report will be sent to.
	DataLog			export	Multiple addresses can be entered, separated
	5				

	 Energy Benchmark (Benchmark/Analysis, see section on usage KPIs)
	• HACCP (daily "Temperature compliance", see section on performance KPIs)
KPI template	List of available templates, filtered according to the selected type
Description	Description of the report, used as the prefix for the file name and the
	subject of the email
Channel	How the report is sent
	 Email: the report is sent as an email attachment
	• Download: the report is saved on the server and can be viewed online

Email to send	Email address that the report will be sent to.
export	Multiple addresses can be entered, separated
	by a semi-colon ';'
Period	Scheduling period and interval of the exported
	data: daily, weekly, monthly
Day of the week	Scheduled day for exporting the report
Data export start	Scheduled time for generating the report
time	

Note: reports can only be scheduled with the following frequency:

• daily: with 24 hours of data

ENG

- weekly: with 7 days of data
- monthly: with one month of data

8.5 Download reports

The exported reports, both scheduled and generated manually, can be viewed or downloaded.

Menu path: Report \rightarrow Reports archive

Reports Archive	record retrieved
Reports + Reports Archive	🚓 Refresh 🍏 Cancel
Description:	User:
Delete Download	rows 5
Elescription	.≑ Name 🛱 File Size 🚽 Upload Date 🗍 Sizer Download
Supermarkets Consumptions - Weekly	Supermarkets Consumptions - Weekly 2016-10-23 00-00 (weekly).zip 0 KB 23/10/16 00:00:00 AM system.admin 🚸
Supermarkets Consumptions - Weekly	Supermarkets Consumptions - Weekly 2016-10-16 00-00 (weekly),zip 🛛 0 KB 16/10/16 00:00:00 AM system.admin 🛛 🐥
Supermarkets Consumptions - Weekly	Supermarkets Consumptions - Weekly 2016-10-9 00-00 (weekly).zip 0 KB 09/10/16 00:00:00 AM system.admin 😽
Supermarkets Consumptions - Weekly	Supermarkets Consumptions - Weekly 2016-10-02 00-00 (weekly).zip 🛛 0 KB 02/10/16 00:00:00 AM system.admin 🛛 🐣
Supermarkets Consumptions - Weekly	Supermarkets Consumptions - Weekly 2016-09-25 00-00 (weekly),zip 🛛 0 KB 25/09/16 00:00:00 AM system.admin 😽
	Fig. 8.f

Procedure (download)

• click the arrow icon to save an individual document, or

• select multiple documents and export a compressed file containing all the documents by clicking "Download".



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"remote**pro**" +0400022EN - rel. 2.0 - 16.05.2017